

Tuesday

9/16/2008

Opening Ceremony

Room: 5

9:00 AM - 9:30 AM

OC **Opening Ceremony**

Session Chair(s): Alexander Fay

Welcome by the President of the Helmut-Schmidt-University

Hans Christoph Zeidler

Official opening of ETFA 2008 by the IEEE IES President

Kouhei Ohnishi

Keynote

Room: 5

9:30 AM - 10:30 AM

K 1 **Keynote Speech**

Session Chair(s): Paul Drews

Intelligent Mechatronics and Robotics

Fumio Harashima, Satoshi Suzuki

Keynote

Room: 5

11:00 AM - 12:00 PM

K 2 **Keynote Speech**

Session Chair(s): J. David Irwin

Networks, Multicore, and Systems Evolution - Facing the timing beast

Rolf Ernst

WiP Room: 1 1:00 PM - 3:00 PM

S 1 Automation Systems

Session Chair(s): Thilo Sauter, Athanasios Kalogeras

Orchestration of Time-Constrained BPEL4WS Workflows <i>Markus Mathes, Roland Schwarzkopf, Tim Dörnemann, Steffen Heinzl, Bernd Freisleben</i>	1
An evolutionary approach for the industrial introduction of virtual commissioning <i>Rainer Drath, Peter Weber, Nicolas Mauser</i>	2
A Practical Preprocessing Treatment for Pipeline Leak Locating Improving <i>Marllene Daneti</i>	3
SARBAU - An IP-fieldbus based Building Automation Network <i>Stefan Knauth, Rolf Kistler, Christian Jost, Alexander Klapproth</i>	4
Aspects of Development and Engineering of a Migration Solution for Existing Heterogeneous Distributed Automation Systems <i>Christian Hahn, Robert Lehmann, Martin Wollschlaeger</i>	5
Integrated Real-Time System for Perishable Freight Transport Management <i>Athanasios Kalogeras, Konstantinos Charatsis, Ioannis Mourtos, Fotios Liotopoulos, Georgios Asimakopoulos, Panagiotis Konstantinopoulos</i>	6
An IEC 61499 based run-to-run controller for chemical mechanical planarization process <i>Kiah Mok Goh, Benny Tjahjono, Abdul Manaf, Anton Aenderoomer</i>	7
Graphical representation of Factory Automation Markup Languages <i>Fabian Lopez, Edurne Irisarri, Elisabet Estevez, Marga Marcos</i>	8
e-based inter-enterprise supply chain Kanban for demand and order fulfilment management <i>L.S. Chai</i>	9
On Full Aspect Conveyed Object Inspection at High Speed <i>Marc Pearson, Tim Clarke</i>	10
An existing complete House Control System based on the REFLEX Operating System: Implementation and Experiences over a Period of 4 Years <i>Karsten Walther, Reinhardt Karnapke, Joerg Nolte</i>	11
Modules, version and variability management in automation engineering of machine and plant manufacturing <i>Tze Ying Sim, Fang Li, Birgit Vogel-Heuser</i>	12
Automation Objects for Product Service System Enabler Device <i>Kiah Mok Goh, Benny Tjahjono, James Joseph, Li Qun Zhuang</i>	13
Dynamic Operations and Manpower Scheduling for High-Mix, Low-Volume Manufacturing <i>Tay Jin Chua, Tian Xiang Cai, Mei Wan Joyce Low</i>	14
Determination of Launching Parameters for Throwing Objects in Logistic Processes with direct Hits <i>Heinz Frank</i>	15
An Approach to use Model Driven Design in Industrial Automation <i>Elisabet Estévez, Marga Marcos</i>	16
Improving program flexibility and application engineering for decentralized control in factory automation <i>Hartmut Ruedele, Florian Kantz</i>	17
Aquaculture Production Quality Certification Model Utilizing Web Semantics and Wireless Technologies <i>Konstantinos Charatsis, Athanasios Kalogeras, Christos Alexakos, Panagiotis Konstantinopoulos, Joanna Iliopoulou Georgoudaki</i>	18

Tuesday

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Track 4

Room: 2

1:00 PM - 3:00 PM

S 1 Factory and Process Automation

Session Chair(s): Orlando Arrieta, Andrei Lobov

Evaluation of Sequential Function Charts Execution Techniques. The Active Steps Algorithm.

Ramón Piedrafita Moreno, José Luis Villarroel Salcedo

Rapid prototyping of logic control in industrial automation exploiting the generalized actuator approach

Andrea Paoli, Matteo Sartini, Andrea Tilli

Selecting orchestrator paths in manufacturing lines: alternatives to scheduling

Corina Popescu, Jose L. Martinez Lastra

Structured Reactive Controllers and Transformational Planning for Manufacturing

Thomas Ruehr, Dejan Pangercic, Michael Beetz

An algorithm to compensate for large data dropouts in Networked Control Systems

Pablo Millán, Isabel Jurado, Carlos Vivas, Francisco Rodríguez

Track 4

Room: 3

1:00 PM - 3:00 PM

S 2 Modelling and identification

Session Chair(s): Pedro Balaguer, Ubirajara Moreno

Constraints Graph Based Approach for The Control of Time Critical Systems

Patrice Bonhomme

Identification of Incompatible states in Mode Switching

Gregory Faraut, Laurent Piétrac, Eric Niel

Observability analysis of interpreted Petri nets under partial state observations using estimations reachability graph

Luis Aguirre-Salas, Alejandra Santoyo-Sanchez

Robust control of a manufacturing system: flow-quality approach

Achraf Jabeur Telmoudi, Lotfi Nabli, Radhi M'hiri

Real Number Laplace Transformation-based Identification for First-order System including Time-delay

Satoshi Suzuki, Katsuhisa Furuta

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Track 6

Room: 108

1:00 PM - 3:00 PM

S 1 Human robot interface and telerobotics

Session Chair(s): *Monica Ballesta*

Speaker Selection Algorithm Using Audio And Video Information In A Cluttered Environment

Yoonseob Lim, Jongsuk Choi

Analysis of machine operation skills using hand discrete movement

Satoshi Suzuki, Fumio Harashima

Object-transportation control for a human-operated robotic manipulator

Naoki Uchiyama, Atsushi Mori, Yuichiro Kajita, Shigenori Sano, Shoji Takagi

Teleoperation mechanisms in a Multi-Agent System

Vasco Santos, Pedro Santana, Luís Correia, José Barata

Shared Control of a Pan-Tilt Camera on an All-terrain Mobile Robot

Carlos Cândido, Pedro Santana, Luís Correia, José Barata

SS 02

Room: 109

1:00 PM - 3:00 PM

SS 02-1 Development of Automation Systems: The impact of IEC standards

Session Chair(s): *Kleanthis Thramboulidis, Georg Frey*

An IEC 61499 Interpretation and Implementation Focused on Usability

Florian Wagner, Joachim Bohl, Georg Frey

CEC Designer: Domain Specific Modelling for the Industrial Automation Based on the IEC 61499 Standard

Marco Colla, Tiziano Leidi, Murat Kunt, Jean-Philippe Thiran

Framework for Management of Replicated IEC 61499 Applications

Adriano Santos, Mario de Sousa

An Engineering Method for Batch Process Automation using a Component Oriented Design based on IEC 61499

Wilfried Lepuschitz, Alois Zoitl

Implementation Alternatives for the OMAC State Machines Using IEC 61499

Nils H. Hagge, Bernardo Wagner

A Survey of Distributed Intelligence in Automation in European Industry, Research and Market

Ivanka Terzic, Alois Zoitl, Bernard Favre-Bulle, Thomas Strasser

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WiP Room: 1 4:00 PM - 5:30 PM
S 2 Computational Intelligence

Session Chair(s): Thilo Sauter, Athanasios Kalogeras

Application-based approach for automatic texture defect recognition on synthetic surfaces 1
Marcus Niederhöfer, Volker Lohweg

Integrating Agents and Soft Computing in Intelligent Manufacturing System Models 2
Luiz Márcio Spinosa, Leandro Coelho

Efficient failure-free Foundry Production 3
Yoseba Penya, Pablo García Bringas, Argoitz Zabala

Modular Assembly Machine - Ontology Based Concept 4
Ivanka Terzic, Munir Merdan, Alois Zoitl, Ingo Hegny

Gesture Recognition Using Evolution Strategy Neural Network 5
Johan Hägg, Batu Akan, Baran Cürüklü, Lars Asplund

A flexible biological inspired multi-agent based shop floor control architecture for manufacturing systems 6
Dania A. El Kebbe, Juan Gomez-Fernandez

Green Surveillance Applications 7
Javier Silvestre-Blanes

Descending Deviation Optimization Techniques For Scheduling Problems 8
Kevin McCarty, Milos Manic

Refining the Window Size of Sliding Window Operations in Running Data Processing Systems 9
Bernhard Wolf, Mario Neugebauer

Track 4 Room: 2 4:00 PM - 5:30 PM
S 3 Process control I

Session Chair(s): Ramón Piedrafita, Corina Popescu

Considerations on PID Controller Operation: Application to a Continuous Stirred Tank Reactor
Orlando Arrieta, Ramon Vilanova, Victor M. Alfaro, Romualdo Moreno

Analytical Robust Tuning of PI Controllers for First-Order-Plus-Dead-Time Processes
Victor M. Alfaro, Ramon Vilanova, Orlando Arrieta

Sucker-Rod Pumping System: Simulator and Dynamic Level Control Using Downhole Pressure
Bernardo Ordonez, Andres Codas, Ubirajara Moreno, Alex Teixeira

Multivariable PID Control Tuning: A Controller Validation Approach
Pedro Balaguer, Norhaliza Abdul Wahab, Reza Katebi, Ramon Vilanova

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SS 06

Room: 105

4:00 PM - 5:30 PM

SS 06 Building and Home Automation

Session Chair(s): Alexander Klapproth, Stefan Knauth

An Adaptive Network Architecture for Home- and Building Environments

Rolf Kistler, Stefan Knauth, Alexander Klapproth

A Data Exchange Format for the Engineering of Building Automation Systems

Stefan Runde, Alexander Fay

Functional safety and system security in automation systems - a life cycle model

Thomas Novak, Albert Treytl

Localization by Superposing Beats: First Laboratory Experiments and Theoretical Analyzes

Matthias Schneider, Ralf Salomon

Track 6

Room: 108

4:00 PM - 5:30 PM

S 2 Automation and Sensors

Session Chair(s): Juan Jesus Garcia

Practical Obstacle Avoidance Using Potential Field for a Nonholonomic Mobile Robot with Rectangular Body

Hiroaki Seki, Satoshi Shibayama, Yoshitsugu Kamiya, Masatoshi Hikizu

Localization in a wide range of industrial environments using relative 3D ceiling features

Daniel Lecking, Oliver Wulf, Bernardo Wagner

Optimal Test-Point Positions For Calibrating An Ultrasonic Lps System

F. Daniel Ruiz, Jesús Ureña, José M. Villadangos, Isaac Gude, J. Jesús García, Alvaro Hernández, Ana Jiménez

Two Camera System for Robot Applications; Navigation

Jörgen Lidholm, Fredrik Ekstrand, Lars Asplund

A fast Visual Line Segment Tracker

Peer Neubert, Teresa Vidal-Calleja, Simon Lacroix, Peter Protzel

SS 02

Room: 109

4:00 PM - 5:30 PM

SS 02-2 Development of Automation Systems: The impact of IEC standards

Session Chair(s): Georg Frey, Kleanthis Thramboulidis

Restricting IEC 61131-3 Programming Languages for use on High Integrity Applications

Mario de Sousa

Transformation of existing IEC 61131-3 automation projects into control logic according to IEC 61499

Christoph Sünder, Monika Wenger, Christian Hanni, Ivo Gosetti, Heinrich Steininger, Josef Fritsche

Analyzing the Liveliness of IEC 61499 Function Blocks

Nils H. Hagge, Bernardo Wagner

A Formal Approach to Check and Schedule Reconfigurable Embedded Control Systems

Mohamed Khalgui, Olfa Mosbahi, Hans-Michael Hanisch

Tuesday

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Track 2

Room: 110

4:00 PM - 5:30 PM

S 1

Real-Time Ethernet Networks

Session Chair(s): Françoise Simonot-Lion, Julian Proenza

Segmentation of Standard Ethernet Messages in the Time-triggered Ethernet

Vaclav Mikolasek, Astrit Ademaj, Stanislav Racek

An Evaluation of Switched Ethernet and Linux Traffic Control for Real-Time Transmission

Joan Vila-Carbó, Joaquim Tur-Masanet, Enrique Hernández-Orallo

A performance analysis of EtherCAT and PROFINET IRT

Gunnar Prytz

An Arbitration-based Access Scheme for EtherCAT Networks

Gianluca Cena, Adriano Valenzano, Claudio Zunino

WiP Room: 1 9:00 AM - 11:00 AM
 S 3 Dependability Aspects

Session Chair(s): Thilo Sauter, Athanasios Kalogeras

A Mechanism for Deadline Missing Prediction in Systems based on Distributed Threads <i>Patricia Della M�ea Plentz, Carlos Montez, R�omulo Silva de Oliveira</i>	1
Accurate Modeling Of Repair Time In Two-Machine Production Lines <i>Hassanein Amer, Ramez Daoud</i>	2
Web services on Deeply Embedded Devices with Real-Time Processing <i>Guido Moritz, Steffen Pr�uter, Frank Golaowski, Dirk Timmermann</i>	3
Proposal of an Industrial Information System Model for Automatic Performance Evaluation <i>Eduardo Alves Portela Santos, Eduardo de Freitas Rocha Loures, Fernando Deschamps, Marco Antonio Buseti de Paula</i>	4
A Simulation Approach to a Real-Time Ethernet Protocol: EtherCAT <i>Lucia Seno, Claudio Zunino</i>	5
Verification and Analysis of Dependable Automotive Communication Systems based on HW/SW Co-Simulation <i>Michael Karner, Eric Armengaud, Christian Steger, Reinhold Wei�, Daniel Watzenig, Gernot Knoll</i>	6
A Model for Security Management of SCADA Systems <i>Ivamo M. dos Anjos, Agostinho M. Brito Jr., Paulo S. Motta Pires</i>	7
Modeling Flexible Mechatronical Based Assembly Systems through Simulation Support <i>Martijn Rooker, Thomas Strasser, Gerhard Ebenhofer, Michael Hofmann, Ricardo Velez</i>	8
Development of a Flexible Gateway Platform for Automotive Networks <i>Andreas Puhm, Peter Roessler, Marcus Wimmer, Rafael Swierczek, Peter Balog</i>	9
Why IEEE 1394 ("FireWire") might not be a perfect choice for factory automation today - a case study from the printing industry <i>Andreas Rehkopf, Johannes Weber, Hans-Detlef Groeger</i>	10
Using a CORBA Synchronous Scheduling Service in Pick&Place Operations <i>Isidro Calvo, Itziar Cabanes, Adri�n Noguero, Asier Zubizarreta, Luis Almeida, Marga Marcos</i>	11
Denial-of-Service in Automation Systems <i>Wolfgang Granzer, Christian Reinisch, Wolfgang Kastner</i>	12
Real-Time Enabled Debugging for Distributed Systems <i>Georg Gaderer, Patrick Loschmidt, Thilo Sauter</i>	13
Network Diagnostics for Industrial Ethernet <i>Oliver Kleineberg, Max Felser</i>	14
Security in Virtual Automation Networks <i>Dirk Reinelt, Mario Wolframm</i>	15
Designing and Verifying Media Management in ReCANcentrate <i>Manuel Barranco, Juli�n Proenza, Lu�s Almeida</i>	16
Use of Interleaving and Error Correction to Infrared Patterns for the Improvement of Position Estimation Systems <i>Nikos Petrellis, Fotios Gioulekas, Michael Birbas, John Kikidis, Alexios Birbas</i>	17
A Secure Agent Platform for Active RFID <i>Albert Treytl, Werner Spenger, Bilal Riaz</i>	18
Clock Synchronization of PTP-based Devices through PROFINET IO Networks <i>Paolo Ferrari, Alessandra Flammini, Daniele Marioli, Stefano Rinaldi, Emiliano Sisinni, Andrea Taroni, Francesco Venturini</i>	19

Wednesday

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Track 4

Room: 2

9:00 AM - 11:00 AM

S 4 Applications

Session Chair(s): J. Jesús García

Event-Based Control and Wireless Sensor Network for Greenhouse Diurnal Temperature Control: A Simulated Case Study

Andrzej Pawlowski, José Luis Guzmán, Francisco Rodríguez, Manuel Berenguel, José Sánchez, Sebastián Dormido

Petri Nets based Coordination of Flexible Autonomous Guided Vehicles in Flexible Manufacturing Systems

David Herrero-Pérez, Humberto Martínez-Barberá

Resource Management and Usage in highly flexible and adaptable Manufacturing Systems

Michael Heinze, Joern Peschke, Arndt Lueder

Improvement of output voltage using six-phase matrix converter

Manuel Ortega, Francisco Jurado

An Application of BPEL for Service Orchestration in an Industrial Environment

Juha Puttonen, Andrei Lobov, Jose Luis Martinez Lastra

Track 4

Room: 3

9:00 AM - 11:00 AM

S 5 Fault detection, diagnostics and prognostics

Session Chair(s): Thomas Wagner

Fault Diagnosis of Electrical Systems using Interpreted Petri Nets

Alejandra Santoyo Sanchez, Elvia Ruiz Beltran, Luis Aguirre Salas, Victor Ortiz Muro

Extension of model-reference based estimator for fault isolation in a bioprocess

Nabil Kabbaj, Andrei Doncescu

Network Calculus Based Fault Diagnosis Decision-Making for Networked Control Systems

Christophe Aubrun, Jean-Philippe Georges, Dominique Sauter, Eric Rondeau

Diagnosis of Intermittent Fault Dynamics

Antonio Correcher, Emilio García, Francisco Morant, Ramón Blasco-Giménez, Eduardo Quiles

A Neural Network MultiAgent Architecture Applied to Fieldbus Intelligent Control

Vinicius Machado, Adriaio Doria Neto, Jorge Dantas de Melo, Leonardo Ramalho, Juliana Medeiros

Track 3

Room: 105

9:00 AM - 11:00 AM

S 1 Scheduling

Session Chair(s): Tullio Facchinetti, Roberto Passerone

Scheduling of Semi-Independent Real-Time Components: Overrun Methods and Resource Holding Times

Moris Behnam, Insik Shin, Thomas Nolte, Mikael Nolin

Adaptive real-time scheduling for legacy applications

Luca Abeni, Luigi Palopoli

Scheduling Analysis of Distributed Real-Time Systems Under Functional Constraints

Alexander Metzner

Exact Scheduling Analysis of Accumulatively Monotonic Multiframe Tasks Subjected to Release Jitter and Arbitrary Deadlines

Areej Zuhily, Alan Burns

Wednesday

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Track 1

Room: 109

9:00 AM - 11:00 AM

S 1 Information Technology in Automation I

Session Chair(s): Kai Hansen, Wolfgang Kastner

Generic Service Information System Architecture - A Reference Model Based Approach for Evaluating Information Systems in Industrial Service

Michael Amberg, Timo Holm, Kristian Dencovski, Mathias Maurmaier

AutomationML – the glue for seamless Automation Engineering

Rainer Drath, Arndt Lüder, Jörn Peschke, Lorenz Hundt

Challenges in the Development of Mechatronic Systems: The Mechatronic Component

Kleanthis Thramboulidis

XML-based Middleware Approach for industrial wireless Communication Systems

Volker Schuermann, Aurel Buda, Joerg F. Wollert

OPC UA supporting the automated engineering of production monitoring and control systems

Miriam Schleipen

Track 2

Room: 110

9:00 AM - 11:00 AM

S 2 Industrial Wireless Communications I

Session Chair(s): Christos Koulamas, Nicolas Navet

Exploiting Publish/Subscribe Communication in Wireless Mesh Networks for Industrial Scenarios

Andre Herms, Michael Schulze, Joerg Kaiser, Edgar Nett

Synchronized Wireless Sensor Networks for Coexistence

Paolo Ferrari, Alessandra Flammini, Daniele Marioli, Emiliano Sisinni, Andrea Taroni

Some Factors Affecting Performance of a Wireless Sensor Network – Entropy-Based Analysis

Marko Paavola, Mika Ruusunen

Performance Evaluation of a Compression Algorithm for Wireless Sensor Networks in Monitoring Applications

Ivanovitch Medeiros Dantas Silva, Luiz Affonso Guedes, Francisco Vasques

On the Timeliness of Multi-Hop Non-Beaconed ZigBee Broadcast Communications

Paulo Bartolomeu, José Fonseca, Francisco Vasques

Keynote

Room: 5

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K 3 Keynote Speech

Session Chair(s): James Hung

Wireless Control in Theory, Practice and Production

Jan-Erik Frey

WiP Room: 1 1:30 PM - 3:30 PM
 S 4 Modelling and Tools

Session Chair(s): Thilo Sauter, Athanasios Kalogeras

Customer-oriented Innovation of Engineering Tools – a Holistic Methodology to Close the Gap to Customer Productivity <i>Kristian Dencovski, Thomas Wagner</i>	1
Concept for Proactive Ramp-up Validation of Body-in-White Lines <i>Sven Mandel, Thomas Bär, Alexander Fay</i>	2
Virtual Prototyping through Co-simulation of a Cartesian Plotter <i>Marcel A. Groothuis, Arjen S. Damstra, Jan F. Broenink</i>	3
Communication Performance Simulation for Object Access of BACnet Web Service Building Facility Monitoring Systems <i>Chuzo Ninagawa, Tomotaka Sato, Yahiko Kawakita</i>	4
Sharing IO Devices using Hardware Virtualization Method for Component-Based Industrial Controllers <i>Tatsuya Maruyama, Tsutomu Yamada</i>	5
On Working with the Concept of Integration Ontologies <i>Andreas Gössling, Martin Wollschlaeger</i>	6
XML-based Modeling of an Alarm Management <i>Annerose Braune, Stefan Hennig</i>	7
Towards Migrating Legacy Real-Time Systems to Multi-Core Platforms <i>Farhang Nemati, Johan Kraft, Thoman Nolte</i>	8
Message-Oriented and Workflow-Based Inter-Process Communication for Distributed Manufacturing <i>Patrick Otto, Erik Hennig, Martin Wollschlaeger</i>	9
Rapid Migration and Commissioning of Industrial Equipment <i>Volodymyr Vasyutyynskyy, Jens Naake, Andre Roeder, Klaus Kabitzsch</i>	10
Feasibility Analysis for Networked Control Systems by Simulation in Modelica <i>Liu Liu, Georg Frey</i>	11
Leveraging Model-driven Development for Automation Systems Development <i>Mathias Maurmaier</i>	12

Wednesday

9/17/2008

Track 4

Room: 2

1:30 PM - 3:30 PM

S 6 Automation Systems

Session Chair(s): Andrzej Pawlowski, David Herrero-Pérez

An asymptotic discrete second order sliding mode control law for highly non stationary systems

Mohamed Mihoub, Ahmed Said Nouri, Ridha Ben Abdennour

Efficient management of an advanced data acquisition system with real time streaming

Enrique García, Juan García, Jesús Ureña, Álvaro Hernández, Ana Jiménez, M^a Jesus Diaz

Application Of The Supervisory Control Theory In The Project Of A Robot-Centered, Variable Routed System Controller

Eduardo Portela, Daniel Silva, Agnelo Vieira, Marco Busetti

Environment Modelling for the Robust Motion Planning and Control of Planar Rigid Robot Manipulators

Luca Capisani, Tullio Facchinetti, Antonella Ferrara, Alessandro Martinelli

Application of Latent Nestling Method using Coloured Petri Nets for the Fault Diagnosis in the Wind Turbine Subsets

Leonardo Rodríguez Urrego, Emilio García Moreno, Francisco José Morant Anglada, Antonio Correcher Salvador, Eduardo Quiles Cucarella

Track 3

Room: 105

1:30 PM - 3:30 PM

S 2 Real-Time Systems

Session Chair(s): Luigi Palopoli, Thomas Nolte

Pinpointing Interrupts in Embedded Real-Time Systems using Context Checksums

Daniel Sundmark, Henrik Thane

Framework for Real-Time Analysis in Rubus-ICE

Kaj Hänninen, Jukka Mäki-Turja, Staffan Sandberg, John Lundbäck, Mats Lindberg, Mikael Nolin, Kurt-Lennart Lundbäck

Automatic Refinement-based Specification of Feasible Control Tasks in Benchmark Production Systems

Mohamed Khalgui, Hans-Michael Hanisch

A Quantitative Study on Automatic Validation of the Diagnostic Services of Electronic Control Units

Philipp Peti, Armin Timmerberg, Thomas Pfeffer, Simon Müller, Christoph Rätz

Functional and Structural Properties in the Model-Driven Engineering Approach

Daniela Cancila, Roberto Passerone

Track 6

Room: 108

1:30 PM - 3:30 PM

S 3 Simultaneous Localization and Mapping (SLAM)

Session Chair(s): Eduardo Montijano

Delayed Inverse-Depth Feature Initialization for Sound-Based SLAM

Rodrigo Munguia, Antoni Grau

Analysis of Map Alignment Techniques in visual SLAM systems

Monica Ballesta, Oscar Reinoso, Arturo Gil, Miguel Julia, Luis Paya

Line-Based Incremental Map Building Using Infrared Sensor Ring

Danilo Navarro García, Gines Benet Gilabert, Francisco Blanes

3D-Based Monocular SLAM for Mobile Agents Navigating in Indoor Environments

Dejan Pangercic, Radu Bogdan Rusu, Michael Beetz

Wednesday

9/17/2008

Track 1

Room: 109

1:30 PM - 3:30 PM

S 2 Information Technology in Automation II

Session Chair(s): Georg Frey, Jürgen Jasperneite

Towards a Time-Constrained Web Service Infrastructure for Industrial Automation

Markus Mathes, Steffen Heinzl, Bernd Freisleben

Extending the Watchdog Pattern for Multi-threaded Windows based Traffic Management and Control Applications

Christoph Stoegerer, Wolfgang Kastner

A Novel Method for Auto Configuration of Realtime Ethernet Networks

Jahanzaib Imtiaz, Karl Weber, Juergen Jasperneite, Gunnar Lessmann, Franz-Josef Goetz

A Lookup Service in an Interconnected World of Uniquely Identified Objects

Elias Polytarchos, Nektarios Leontiadis, Stylianos Eliakis, Katerina Pramatarí

Track 2

Room: 110

1:30 PM - 3:30 PM

S 3 Industrial Wireless Communications II

Session Chair(s): Max Felser, Christos Koulamas

Meeting Reliability and Real-Time Demands in Wireless Industrial Communication

Magnus Jonsson, Kristina Kunert

Is CSMA/CA really efficient against interference in a Wireless Control System? An experimental answer

Matteo Bertocco, Giovanni Gamba, Alessandro Sona

Evaluating Severe Noise Interference in IEEE 802.15.4 based Location Systems

José Oliveira, Paulo Bartolomeu, José Fonseca, Luís Costa

When HART Goes Wireless: Understanding and Implementing the WirelessHART Standard

Anna N. Kim, Fredrik Hekland, Stig Petersen, Paula Doyle

Track 4

Room: 2

4:00 PM - 5:30 PM

S 7 Computer and Control Systems

Session Chair(s): Christophe Aubrun, Leonardo Rodríguez Urrego

Optimal On-line (m,k)-firm Constraint Assignment for Real-time Control Tasks Based on Plant State Information

Flavia Felicioni, Jia Ning, Françoise Simonot-Lion, Song YeQiong

Triangular Decoupling with Simultaneous Disturbance Rejection for General Linear Time Delay Systems via Measurement Output Feedback

Fotis N. Koumboulis, George E. Panagiotakis

Step State-feedback Supervisory Control of Discrete Event Systems using Interpreted Petri Nets

Alejandra Santoyo-Sanchez, Antonio Ramirez-Trevino, Carlos De Jesus Velasquez, Luis Aguirre Salas

Structuring of Large Scale Distributed Control Programs with IEC 61499 Subapplications and a Hierarchical Plant Structure Model

Thomas Strasser, Martijn Rooker, Gerhard Ebenhofer, Alois Zöttl, Christoph Sünder, Antonio Valentini, Allan Martel

Wednesday

9/17/2008

Track 3

Room: 105

4:00 PM - 5:30 PM

S 3 Sensor Networks

Session Chair(s): Alexander Metzner, Thomas Nolte

A Topology Management Protocol with Bounded Delay for Wireless Sensor Networks

Emanuele Toscano, Lucia Lo Bello

Web-service enabled Wireless Sensors in SOA environments

Domnic Savio, Stamatīs Kamouskos

FZepel: RF-level Power Consumption Measurement (RF-PM) for Zigbee Wireless Sensor Network-Towards Cross Layer Optimization

Md. Rezaul Hoque Khan, Roberto Passerone, David Macii

CoReDac: Collision-Free Command-Response Data Collection

Thiemo Voigt, Fredrik Österlind

Track 6

Room: 108

4:00 PM - 5:30 PM

S 4 Modelling and simulation

Session Chair(s): Antoni Grau

Modeling of MR Fluid Actuator Enabling Safe Human-Robot Interaction

Muhammad Rehan Ahmed, Ivan G Kalaykov, Anani V Ananiev

Sensor and actuator modeling of a realistic wheeled mobile robot simulator

José Gonçalves, José Lima, Hélder Oliveira, Paulo Costa

Humanoid Robot Simulation with a Joint Trajectory Optimized Controller

José Luis Lima, José Alexandre Gonçalves, Paulo Gomes Costa, António Paulo Moreira

Position-Based Navigation Using Multiple Homographies

Eduardo Montijano, Carlos Sagues

Track 1

Room: 109

4:00 PM - 5:30 PM

S 3 Information Technology in Automation III

Session Chair(s): Georg Frey, Jürgen Jasperneite

Optimized FPGA Implementations of Demanding PLC Programs Based on Hardware High-Level Synthesis

Christoforos Economakos, George Economakos

BOUNCE, a Concept to Measure Picosecond Time Intervals with Standard Hardware

Ralf Joost, Ralf Salomon

Performance Investigation and Optimization of IEEE802.15.4 for Industrial Wireless Sensor Networks

Mohsin Hameed, Henning Trsek, Olaf Graeser, Juergen Jasperneite

Wednesday

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Track 2

Room: 110

4:00 PM - 5:30 PM

S 4

Applications and Innovations

Session Chair(s): Jose Alberto Fonseca, Marga Marcos

Synchronization in a Force Measurement System Using EtherCAT

Mattias Rehnman, Tobias Gentzell

Reactivity Analysis of different Networked Automation System Architectures

Jürgen Greifeneder, Georg Frey

Using Wireless Sensor Networks to Enable Increased Oil Recovery

Simon Carlsen, Stig Petersen, Amund Skavhaug, Paula Doyle

Simulative Investigation of Intermediate Checksum Schemes in the Presence of Deadlines

Andreas Willig

WiP	Room: 1	9:00 AM - 10:30 AM
S 5	Control Systems	
<i>Session Chair(s): Thilo Sauter</i>		

A neuro-fuzzy delay compensator for distributed control systems <i>Ana Antunes, Fernando Dias, José Vieira, Alexandre Mota</i>	1
Next Generation of Embedded Controllers: Developing FPGA-based reconfigurable controllers using Matlab/Simulink <i>T. Barlas, M. Moallem</i>	2
Smith predictor based intelligent control of multiple-input-multiple-output systems with unknown delays <i>Jorge Herrera, Asier Ibeas, Salvador Alcantara, Ramon Vilanova, Pedro Balaguer</i>	3
Using Neuroevolution for Optimal Impedance Control <i>Jose de Gea, Frank Kirchner</i>	4
Multi-Domain Model-Driven Design of Industrial Automation and Control Systems <i>Thomas Strasser, Martijn Rooker, Gerhard Ebenhofer, Ingo Hegny, Monika Wenger, Christoph Sünder, Allan Martel, Antonio Valentini</i>	5
Online Management and Control System for growing of monocrystal semiconductor materials in multi-zone furnaces <i>Dirk Bräuer, Andreas Rehkopf</i>	6
A java based tool for distributed control systems <i>Mikel Eguiraun, Josu Jugo</i>	7
A Closed Loop Welding Controller for a Rapid Manufacturing Process <i>Giovanni Muscato, Giacomo Spampinato, Luciano Cantelli</i>	8
Extended Kalman filtering using wireless sensor networks <i>Pietro Muraca, Paolo Pugliese, Giuseppe Rocca</i>	9
Stabilization of a 5-link Bipedal Robot by means of Dorsal Movement Compensation <i>Luiz R. Douat, Eugênio B. Castelan, Ubirajara F. Moreno</i>	10
Analysis of evaluation metrics for networked control systems <i>Carlos H. Costa, Carlos B. Montez, Ubirajara F. Moreno</i>	11
Component based Colored Petri Net model for Ethernet based Networked Control Systems <i>Abouelabbas Ghanaim, Georg Frey</i>	12
Adaptation of Powered Wheelchairs for Quadriplegic Patients with Reduced Strength <i>Margarida Urbano, José Fonseca, Urbano Nunes, Luís Figueiredo, Arminda Lopes</i>	13
Supervisory System for Hybrid Productive Systems based on Bayesian Networks and OO-DPT Nets <i>Roy Andres Gomez, Jose Isidro Garcia Melo, Paulo Eigi Miyagi</i>	14

Track 4

Room: 2

9:00 AM - 10:30 AM

S 8 Distributed Control

Session Chair(s): David Gómez–Gutiérrez

Function blocks for decentralised analysis of product flow paths*Gustavo Quirós, Martin Mertens, Ulrich Epple***UML-Based Modeling and Model-Driven Development of Distributed Control Systems***Francesco Basile, Pasquale Chiacchio, Domenico Del Grosso***Evaluation of Effectiveness and Impact of Decentralized Automation***Thomas Wagner, Andreas Schertl, Jürgen Elger, Jan Vollmar***Measuring the Effort of a Reconfiguration Processes***Amro Farid, Wuttiaphat Covanich*

WiP

Room: 3

9:00 AM - 10:30 AM

S 6 Wireless Communications

Session Chair(s): Athanasios Kalogeras, Christos Koulamas

Porting application between wireless sensor network software platforms: TinyOS, MANTIS and ZigBee*Mohammad Mostafizur Rahman Mozumdar, Francesco Gregoretti, Luciano Lavagno, Laura Vanzago*

1

**Management Of A Real Factory Simulation Connected With A Physical Platform Using Rfid-lmsii Methodology
>>This Paper is withdrawn<<***Julio C. Encinas, Javier de las Morenas, Andrés García Higuera, José Manuel Pastor García, Rafael Ota Simal*

2

Investigating wireless networks coexistence issues through an interference aware simulator*Matteo Bertocco, Giovanni Gamba, Alessandro Sona, Federico Tramarin*

3

An Experimental Evaluation on Using TDMA over 802.11 MAC for Wireless Networked Control Systems*Gennaro Boggia, Pietro Camarda, Alfredo Grieco, Giammarco Zacheo*

4

DSTiPE Algorithm for Fuzzy Spatio-Temporal Risk Calculation in Wireless Environments*Kurt Derr, Milos Manic*

5

Distributed Asset Tracking using Wireless Sensor Network*Li Qun Zhuang, Wei Liu, Dan Hong Zhang, Jing Bing Zhang, Ian Kamajaya*

6

Preamble Detection for Wireless Clock Synchronization in Frequency Selective Fading Channels*Aneeq Mahmood, Georg Gaderer*

7

Modular Wireless Fieldbus Gateway For Fast and Reliable Sensor/Actuator Communication*Ralf Heynicke, Housam Wattar, Dirk Krüger, Gerd Scholl*

8

Genetic Machine Learning Approach for Data Fusion Applications in Dense Wireless Sensor Networks*Alex Pinto, Benedito Bitencort, Mário Dantas, Carlos Montez, Francisco Vasques*

9

Wireless Technologies for Safe Automation – Insights in Protocol Development*Axel Sikora, Dirk Lill*

10

Evaluating WiMAX for Vehicular Communication Applications*André Costa, Hugo Proenca, Paulo Pedreiras, José Fonseca, Alvaro Gomes, Joao Nuno Matos, Jorge Sales Gomes*

11

On the adequacy of 802.11p MAC protocols to support safety services in ITS*Nuno Ferreira, José Fonseca, J. Sales Gomes*

12

CWFC: A Contention Window Fuzzy Controller for QoS support on IEEE 802.11e EDCA*Salvatore Vittorio, Emanuele Toscano, Lucia Lo Bello*

13

Thursday

9/18/2008

Track 3

Room: 105

9:00 AM - 10:30 AM

S 4 Real Time Communication

Session Chair(s): Lucia Lo Bello, Thomas Nolte

Self-configuration of an Adaptive TDMA wireless communication protocol for teams of mobile robots

Frederico Santos, Luis Almeida, Luis Seabra Lopes

Properties of BuST and Timed Token Protocols in Managing Hard Real-Time Traffic

Gianluca Franchino, Giorgio Buttazzo, Tullio Facchinetti

Less Pessimistic Worst Case Delay Analysis for Packet-Switched Networks

Mattias Wecksten, Magnus Jonsson

Probabilistic upper bounds for heterogeneous flows using a Static Priority Queueing on an AFDX network

Frédéric Ridouard, Jean-Luc Scharbarg, Christian Fraboul

SS 05

Room: 109

9:00 AM - 10:30 AM

SS 05 Industrial Agents

Session Chair(s): Paulo Leitao, Francisco Maturana

Decision Support System in a Service-oriented Control Architecture for Industrial Automation

Paulo Leitao, Marco Mendes, Armando Colombo

Distributed Multi Sensor Agent for Composite Curing Control

Francisco Maturana, Dan L. Carnahan, Donald D. Theroux, Ken H. Hall

Determination of the Itinerary of Imprecise Mobile Agents using an Adaptive Approach

Luciana Rech, Carlos Montez, Rômulo de Oliveira, Fábio Reis Cecin, Cláudio Geyer

Control the chaos in agent based manufacturing systems

Kamel Benaïssa, Daniel Diep, Alexandre Dolgui

Track 5

Room: 110

9:00 AM - 10:30 AM

S 1

Session Chair(s):

Application of a Group Search Optimization based Artificial Neural Network to Machine Condition Monitoring

Shan He, Xiaoli Li

Neural Network Modeling of Magnetic Hysteresis

Vahab Akbarzadeh, Maryam Davoudpour, Alireza Sadeghian

A neural network delay compensator for networked control systems

Ana Antunes, Fernando Dias, Alexandre Mota

Thursday

9/18/2008

Track 4

Room: 2

11:15 AM - 12:30 PM

S 9 Design tools

Session Chair(s): *Domenico Del Grosso*

Automatic generation of PLC code beyond the nominal sequence

Knut Guettel, Peter Weber, Alexander Fay

Design-Time Management of Run-Time Data in Industrial Embedded Real-Time Systems Development

Andreas Hjertström, Dag Nyström, Mikael Nolin, Rikard Land

Automatic Generation of Bond Graph Models of Process Plants

Sebastian Beez, Alexander Fay, Nina Thornhill

Track 4

Room: 3

11:15 AM - 12:30 PM

S10 Process control II

Session Chair(s): *Amro Farid*

Network based controller applied to a highly dynamic system

Michael Morawski, Antoni Zajaczkowski

From monotone inequalities to Model Predictive Control

Guezzi Abdelhak, Philippe Declerck, Jean-Louis Boimond

Centralized PID Control by Decoupling for TITO Processes

Fernando Morilla, Francisco Vazquez, Juan Garrido

SS 04

Room: 108

11:15 AM - 12:30 PM

SS 04 Auto-ID Applications in the supply chain

Session Chair(s): *Athanasios Kalogeras, Ioannis Mourtos*

Simulation and Design for 3D RFID Application

Liu Wei, Wong Ming Mao, Tan Chak

Traceability applications based on Discovery Services

Jose Juan Cantero, Miguel Angel Guijarro, Guillermo Arrebola, Ernesto Garcia, Janie Baños, Mark Harrison, Thomas Kelepouris

A Low-Cost Perspective in Identifier-Based Services of Supply Chains

Zsolt Kemeny, Elisabeth Ilie-Zudor, Marcell Szathmari, Laszlo Monostori, Erik A. F. Langius

SS 08

Room: 109

11:15 AM - 12:30 PM

SS 08 Interactive media with personalized networked devices

Session Chair(s): *Raffaele Bolla, Mingyu Lim*

A general collaborative platform for mobile multi-user applications

Mingyu Lim, Niels Nijdam, Nadia Magnenat-Thalmann

A Context-Aware Architecture for QoS and Transcoding Management of Multimedia Streams in Smart Homes

Raffaele Bolla, Matteo Repetto, Stefano Chessa, Francesco Furfari, Mark Asbach, Mathias Wien, Bernhard Reiterer, Hermann Hellwagner, Rik Van de Walle, Saar De Zutter

Design and Implementation of a wearable, context-aware MR framework for the Chloe@University application

Xavier Righetti, Achille Peternier, Mathieu Hopmann, Daniel Thalmann

Thursday

9/18/2008

Track 5

Room: 110

11:15 AM - 12:30 PM

S 2

Session Chair(s):

Hippocampal-like Categorization of Object Views: A Self-Organizing Learning Approach to Vision Modeling using Stochastic Grammar Inference and Associative Memory

Peter Michael Goebel, Markus Vincze, Bernard Favre-Bulle

Cultural Differential Evolution Approach to Optimize the Economic Dispatch of Electrical Energy Using Thermal Generators

Leandro dos Santos, Adriano Del Vigna de Almeida, Viviana Cocco

Meta-Heuristic Approaches for a Soft Drink Industry Problem

Claudio Toledo, José Filho, Paulo França

Keynote

Room: 5

1:30 PM - 2:30 PM

K 4

Keynote Speech

Session Chair(s):

Track 4

Room: 2

2:30 PM - 4:00 PM

S11

Hybrid systems

Session Chair(s): Fernando Morilla

Parallel Timestep Simulation Scheduling (PTSS) with Variable Time Increments for Factory Simulation Applications

Jürgen Roßmann, Gerrit Alves

Towards Step-Wise Safe Switching Climate Control for a Greenhouse

Fotis N. Koumboulis, Maria P. Tzamtzi

Joint state-mode observer design for switched linear systems

David Gómez-Gutiérrez, Guillermo Ramírez-Prado, Antonio Ramírez-Treviño, José Javier Ruiz-León

Control of a Constant Turning Force System via Step-Wise Safe Switching Iterative Feedback Tuning

Fotis N. Koumboulis, Maria P. Tzamtzi, Christoforos E. Economakos

Thursday

9/18/2008

Track 3

Room: 105

2:30 PM - 4:00 PM

S 5 Platforms

Session Chair(s): Daniel Sundmark, Roberto Passerone

Hardware Acceleration for Verifiable, Adaptive Real-Time Communication

Sebastian Fischmeister, Insup Lee, Robert Trausmuth

A supervisor implementation approach in Discrete Controller Synthesis

Emil Dumitrescu, Mingming Ren, Laurent Pietrac, Eric Niel

Using Neural Networks for Quality Management

Mohamad Jaber, Jacques Combaz, Loïc Strus, Jean-Claude Fernandez

Comparison of FPGA-based Implementation Alternatives for Complex Algorithms in Networked Embedded Systems – the Encryption Example

Enrico Heinrich, Sebastian Staamann, Ralf Joost, Ralf Salomon

SS 03

Room: 109

2:30 PM - 4:00 PM

SS 03 Embedded Systems Security & Dependability

Session Chair(s): Dimitrios Serpanos

Creating An Elliptic Curve Arithmetic Unit For Use In Elliptic Curve Cryptography

Apostolos Fournaris, Odysseas Koufopavlou

Modelling and Designing Reliable On-Chip-Communication Devices in MpSoCs with Real-Time Requirements

Maurice Sebastian, Rolf Ernst

Secure and Customizable Software Applications in Embedded Networks

Fritz Praus, Thomas Flanitzer, Wolfgang Kastner

Track 5

Room: 110

2:30 PM - 4:00 PM

S 3

Session Chair(s):

Decentralized Routing Control for Guided Transportation Systems

Alexander Fay, Stefan Jerenz, Frank Schumacher

Integrated Automated Design Approach for Building Automation Systems

Stefan Runde, Henrik Dibowski, Alexander Fay, Klaus Kabitzsch

Production order life cycle in agent-based distributed manufacturing

Aleksey Bratukhin

Planned lead times for one-level assembly system with service level constraint

Alexandre Dolgui, Mohamed Aly Ould Louly, Faicel Hnaien

Closing Ceremony

Room: 5

4:00 PM - 4:15 PM

CC Closing ceremony

Session Chair(s): Alexander Fay

Invitation to ETFA 2009

Antoni Grau

Change log

Version	Date	What has changed
4	20 Aug 2008	Inserted this table of changes.
		Fixed an error in the order of the session chairs Kleanthis Thramboulidis, Georg Frey in Special Session SS02-1.
5	25 Aug 2008	Updated session chairs for track 3
		Added chair for WiP-session 6
6	26 Aug 2008	Updated paper order in WiP-session 5