



Regional Conference on Embedded and Ambient Systems

22-24 November 2007

RCEAS 2007 PROGRAM

Sponsors of the Conference:



Organizers:



Working Party for Innovative
Embedded and Ambient
Systems, John von Neumann
Computer Society



Faculty of Electrical
Engineering and Informatics,
Budapest University of
Technology and Economics



Department of Automation,
University of Miskolc



Department of Software
Engineering,
University of Szeged

Plenary Session I. (in F08)

Date/start: 22-11-2007 / 15:00

Chair: Gábor Péceli

15:00 Welcome and Conference opening

15:30 Šerbedžija, Nikola B.: *Engineering Pervasive-Adaptive Systems (Invited talk)*

16:00 Goebel, Reinhard: *AAL and Austria: current status and related issues (Invited talk)*

Assistive technologies and applications (in F08)

Date/start: 22-11-2007 / 17:00

Chair: Péter Hanák

17:00 A. Lőrincz, S. L. Kálmán, and M. Turcsányi-Szabó: *Intelligent Assisting Home: Prototype project at the Helping Communication Center of the Hungarian Bliss Foundation*

17:20 Bálint Tóth, Géza Németh: *Speech Enabled GPS Based Navigation System for Blind People on Symbian Based Mobile devices in Hungarian*

17:40 Attila Benkő, Cecília Sik Lányi: *Intelligent Emotional Agent*

18:00 Gy. Hévízi, Z.R. Bárdosi, G. P. Zsiák, and A. Lőrincz: *Self-calibrating ubiquitous interfaces: Flexible concept for gaze, head, and limb based interactions*

18:20 Barnabás Takács, Dávid Hanák: *Robots in the Home Assisting the Elderly*

18:40 Pavel Kubu: *Continua Health Alliance addressing The Need for Interoperable Health & Medical Devices*

Plenary Session II. (in F08)

Date/start: 23-11-2007 / 09:30

Chair: László Kutor

09:30 Kadlec, Jiří: *ARTEMIS and the Czech Republic: current status and related issues (Invited talk)*

09:40 Kadlec, Jiří: *Embedded development environment for a family of Xilinx FPGAs (Invited talk)*

10:00 Hanák Péter: *The eVITA National Programme Initiative in Hungary (Invited talk)*

Wireless (sensor) networks (in F08)

Date/start: 23-11-2007 / 11:00

Chair: Csaba Tóth

11:00 Vilmos Bilicki, Miklós Kasza: *A novel approach for monitoring the ad-hoc networks*

11:20 Lóránt Vajda, Ákos Nagy, András Szabó: *Proposal for Intelligent Home Network Gateway Architecture*

11:40 Thomas Patzke, Lóránt Vajda, Attila Török: *A Lean Approach for Evolving Heterogeneous Wireless Sensor Networks - An Assisted Living Case Study*

12:00 Zs. Palotai, A. Szabó, and A. Lőrincz: *Self-organizing ultrasonic mote community: Application of the Survivable Pipeline Protocol concept*

12:20 Balázs Scherer, Csaba Tóth: *Configuring Sensor Networks with Graphical Methods*

Development, Modeling (in F08)

Date/start: 23-11-2007 / 14:00

Chair: Jiří Kadlec

14:00 Zs. Palotai, B. G. Horváth, Z. R. Bárdosi, A. Lőrincz: *Intelligent Socket System: Software technology with predictive capabilities for ambient intelligence*

14:20 Gergely Pintér, István Majzik: *Model Based Automatic Code Generation for Embedded Systems*

14:40 Gergely Patai: *Embedded Functional Programming*

15:00 András Balogh, András Pataricza, Gergely Pintér, Áron Sisak, Michalis Anastasopoulos, Jaejoon Lee: *Model-driven Specification, Analysis, and Realization of Assisted Living Systems*

15:20 András Balogh, András Pataricza, György Csertán, Balázs Polgár: *Model-based Analysis and Synthesis Methods for Dependable Embedded Systems*

Algorithms, Solutions (in F08)

Date/start: 23-11-2007 16:00:00

Chair: **Ándrás Lőrincz**

- 16:00 **Kutor László:** *Near-field communication with mobile phones*
- 16:20 **Károly Molnár, Sándor Szilvási:** *Comparison of Different Fourier Analysis Methods for Unevenly Sampled Data*
- 16:40 **Gergely Vakulya, Gyula Simon:** *An Efficient Flood Routing Algorithm for Dense Randomly Deployed Sensor Networks*
- 17:00 **Gyöngyi Szilágyi Kocsisné:** *Application of Artificial Intelligence Methods for mobile ECG Data Analysis*
- 17:20 **Tatiana Hodoroega, Mircea-Florin Vaida:** *Biomolecular Cryptographic Algorithm as a Subset of Java Cryptography Extension*
- 17:40 **D. Auth, Z. R. Bárdosi, Sz. Mikó, and A. Lőrincz:** *WinGazer*

Embedded hardware I. (in F07)

Date/start: 22-11-2007/ 17:00

Chair: Oniga Ștefan

- 17:00 **Gabriel Stoian, Mircea Preda:** *Advanced ADSL Line Cards Design using Intel Network Processors*
- 17:20 **Péter Serfözö, József Vásárhelyi, Ján Turán:** *The Optimization of the Mojette Transform for Hardware Implementation*
- 17:40 **Ágoston M. Srp, Gábor E. Marosy, Zoltán Gy. Kovács:** *Field Programmable Gate Arrays in the European Student Moon Orbiter On-Board Data Handling System*
- 18:00 **Ștefan Oniga, Alin Tisan, Attila Buchman, Claudiu Lung:** *Hardware Implementation of Simple Competitive Artificial Neural Networks with Neuron Parallelism*
- 18:20 **Péter Szántó:** *High Performance Multi-Channel DMA*

Embedded Hardware II. (in F07)

Date/start: 23-11-2007 / 11:00

Chair: **Fehér Béla**

- 11:00 **A. Tisan, S. Oniga, A. Buchman, C. Gavrincea:** *Hardware/software codesign of a pattern recognition system with on-chip learning*
- 11:20 **Tamás Raikovich, Béla Fehér, Péter Laczkó:** *LOGSYS - Development Environment of Embedded Systems*
- 11:40 **János Lazányi:** *Handheld embedded system using FPGA technology*
- 12:00 **Gergely Kiss, Mo Azimi, Béla Fehér:** *Analysis of indoor active acoustic source tracking*
- 12:20 **Dr. Arató Péter, Bíró Imre, Egri Attila, Kertész Zsolt, Kocza Gábor, Dr. Loványi István:** *Design and implementation of a scalable sensor network for real-time autonomous navigation in 3D*

Engineering (in F07)

Date/start: 23-11-2007 / 14:00

Chair: **Alexandros Soumelidis**

- 14:00 **A. Soumelidis, Z. Fazekas and F. Schipp:** *Embedded computing solutions used in a multi-camera corneal topographer*
- 14:20 **Tamas Gaizer, Csaba Tóth:** *WebSense – The Development of a Facility-Monitoring System Using Embedded Systems and Smart Sensor Technology*
- 14:40 **György Orosz, László Sujbert, Gábor Péceli:** *"Real" Signal Processing with Wireless Sensor Networks*
- 15:00 **Dávid Károly, Tivadar Szemethy, Árpád Bakay:** *System and Signal Monitoring for IPTV Set-Top-Box Systems*
- 15:20 **Tihamér Ádám, Áron Ballagi:** *Mobile Robot Control with Visual Odometry*

dEAmo (in F08)

Date/start: 24-11-2007 / 10:00

Chair: **Stefan Marsiske**

- 10:00 **Barnabás Takács, Dávid Hanák:** *Robots in the Home Assisting the Elderly*
- 10:10 **Bálint Tóth, Géza Németh:** *Text-to-Speech based Mobile Applications*
- 10:20 **Ándrás Lőrincz:** *Tools for Self-Organizing Ambient Assisting Intelligence*
- 10:30 **Break for demonstrations**
- 11:00 **András Pataricza, András Balogh, Gergely Pintér, György Csertán, Balázs Polgár:** *Toolchain for the Model-based Development of Dependable Embedded Systems*
- 11:10 **Béla Fehér, Tamás Raikovich, Péter Laczkó:** *LOGSYS - Development Environment of Embedded Systems*
- 11:20 **Balázs Scherer, Csaba Tóth:** *Configuring Sensor Networks with Graphical Methods*
- 11:30 **Break for demonstrations**
- 12:00 **László Kutor, Zsolt Domozi, Gabriella Nagy, Csaba Peller, Tamás Véső:** *Object Identification and Local Information Services Using Near Field Communication*
- 12:10 **Tamás Pósa:** *AyCare: a sensory presence for the elderly and disabled*
- 12:20 **Ákos Maróty:** *Using Zigbee motes as wireless mesh-networked environmental sensors in the Corpora project*
- 12:30 **Break for demonstrations and buffet lunch**
- 13:00 **Vilmos Bilicki, Robert Béládi:** *(two-page short paper) A novel approach for distributed Management and Monitoring of Wireless Mesh Networks*
- 13:10 **Gábor Filep, Péter Kulik, Viktor Sinka, Zoltán Szatmári:** *Educational boards for embedded systems*
- 13:20 **Lóránt Vajda, Attila Török, András Szabó, Ákos Nagy, Gordos Géza:** *Proposal for Intelligent Home Network Gateway Architecture*
- 13:30 **Break for demonstrations**
- 14:00 **Balázs Scherer, Csaba Tóth, Péter Csordás:** *Education of automotive technologies at BUTE DMIS*
- 14:10 **Gergely Patai:** *Assistive Robot Experiments*
- 14:20 **Closing Words**
- 15:00 **Close of dEAmo section**