

**CSCS-15**  
**15th INTERNATIONAL CONFERENCE ON**  
**CONTROL SYSTEMS AND COMPUTER**  
**SCIENCE**

**May 25-27, 2005**  
**POLITEHNICA University of Bucharest**

**PROGRAMME**

# **15th INTERNATIONAL CONFERENCE ON CONTROL SYSTEMS AND COMPUTER SCIENCE**

CSCS15 is the 15th biennial conference to be held at “POLITEHNICA” University of Bucharest, Bucharest, Romania, from 25 to 27 May 2005. The technical programme reflects the aims of the Conference. It consists of specialized sections dedicated to major topics in theory and applications of systems science and computer science.

## **ORGANIZERS**

CSCS15 is organized by:

- Romanian Society of Control Engineering and Technical Informatics (SRAIT)
- Romanian Academy – "Information Science and Technology" Section
- IEEE Region 8
- Faculty of Control and Computers of “POLITEHNICA” University of Bucharest.

## **INTERNATIONAL PROGRAMME COMMITTEE**

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## LOCAL ORGANIZING COMMITTEE

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Daniela Saru  
Mihai Spataru

### TIMETABLE

#### Wednesday, May 25, 2005

14.00 – 18.00                      Registration

#### Thursday, May 26, 2005

8.00 – 18.00                      Registration  
9.00 – 9.30                        Opening Ceremony (EC105)  
9.30 – 11.15                      Conference sessions  
11.15 – 11.30                      Coffee break  
11.30 – 13.00                      Conference sessions  
13.00 – 14.30                      Lunch  
14.30 – 16.15                      Conference sessions  
16.15 – 16.30                      Coffee break  
16.30 – 18.15                      Conference sessions  
19.30                                 Get Acquainted Cocktail Party

#### Friday, May 27, 2005

8.00 – 18.00                      Registration  
8.30 – 10.30                      Conference sessions  
10.30 – 11.00                      Coffee break  
11.00 – 13.00                      Conference sessions  
13.00 – 14.00                      Lunch  
14.00 – 16.00                      Conference sessions  
16.00 – 16.30                      Coffee break  
16.30 – 18.30                      Conference sessions  
18.30 – 19.00                      Closing Ceremony  
20.00                                 Dinner

## **Session A1. DATA ACQUISITION AND MEASUREMENT**

**Session Chairs: Radu DOBRESCU, Traian IONESCU - ROMANIA**

**Thursday, May 26, 2005, 9.30 – 11.15, Room A1**

- A1.1** Design and Use of a Dedicated Radio Modem for Mobile Sensor Networks  
*Radu Dobrescu, Maximilian Nicolae, Dan Popescu, Radu Varbanescu - ROMANIA*
- A1.2** Electric Powers Measurement with LabVIEW  
*V. D. Ulieru, C. Cepisca, H. Andrei - ROMANIA*
- A1.3** Acquisition and Monitoring of Process Parameters Using Internet  
*Madalin Stefan Vlad, Irina Rancea, Valentin Sgarciu - ROMANIA*
- A1.4** Data Logging and Analysis by Virtual Instrumentation  
*Nicolae Patrascoiu, Adrian Marius Tomus- ROMANIA*
- A1.5** Automatic Car License Plate Recongnition System  
*Gheorghe Sebestyen, Zoltan Pap – ROMANIA*
- A1.6** The Architecture of the Virtual Industrial Enterprise - A New Paradigm in Distributed Data Processing and Communications  
*Marius Guran – ROMANIA*
- A1.7** A Fingerprint-Based Structure and Algorithm for Secure Access  
*Traian C. Ionescu, Vlad Nagea, Cristian Guef – ROMANIA*
- A1.8** The Use of Biometrics in Secure Client-Server Transactions  
*Traian C. Ionescu, Vlad Nagea, Cristian Guef – ROMANIA*

## **Session A2. MODELING AND SIMULATION (I)**

**Session Chairs: Silviu DUMITRIU, Emil POP - ROMANIA**

**Thursday, May 26, 2005, 9.30 – 11.15, Room A2**

- A2.1** Modeling Simulation and Software Implementation of Nonlinear Controler by Distributions Properties  
*Emil Pop, Monica Leba - ROMANIA*
- A2.2** Numerical Phenomena in the Computer Simulations of Some Physical Processes  
*D.A. Iordache, V. Iordache – ROMANIA, P.P. Delsanto – ITALY*
- A2.3** Complex Thermal Experimental Benchmark. Implementing and Modelling Notes  
*Dorin Isoc, Aurelian D. Ignat – ROMANIA*
- A2.4** A Variant of Numerical Modelling and Simulation for a Kinetic Rapid Redox Reaction  $\text{Cu}^{2+}$  with  $\text{S}_2\text{O}_3^{2-}$   
*M. L. Unguresan, M. Abrudean, T. Colosi – ROMANIA*
- A2.5** Electrohidraulic Systems' Simulation using AMESim Software  
*M. Lebrun – FRANCE, D. Vasiliu, N. Vasiliu – ROMANIA*
- A2.6** Modular System for Neural Analysis and Stimulation  
*S. Pasca, R. Strungaru, M. Ungureanu – ROMANIA*
- A2.7** Detection of Airway Obstructions and Sleep Apnea by Analyzing the Submental EMG  
*M. Ungureanu, R. Strungaru, S. Pasca - ROMANIA*

## **Session A2. MODELING AND SIMULATION (II)**

**Session Chairs: Tiberiu COLOSI, Sergiu ILIESCU - ROMANIA**

**Thursday, May 26, 2005, 11:30 – 13.00, Room A1**

- A2.8** Modelling and Simulation of the Isotopic Separation Processes  
*Francisc Dulf, Mihai Abrudean, Tiberiu Colosi – ROMANIA*

- A2.9** Applications of a Modeling and Numerical Simulation Procedure for Distributed Parameters Processes  
*Eva Dulf, Tiberiu Colosi, Mihai Abrudean – ROMANIA*
- A2.10** About the Mathematical Modelling and Simulation of the ( $15^N$ ) Isotope Separation Column  
*Eva Dulf, Clement Festila – ROMANIA*
- A2.11** Process Modeling and Management in Supply Chains Using XML-Nets  
*Dan Vacariu, Viorel Minzu, Daniela Cernega – ROMANIA*
- A2.12** System Modelling Versus Residual Generation in FDI Methods  
*I.Fagarasan, S. St.Iliescu, S.Barbulea, P.Arsene – ROMANIA*
- A2.13** On the Implementations of the Idea of Electromechanical Systems' Co-simulation  
*D. Cazacu, E.Lefter – ROMANIA*
- A2.14** Multigrid Techniques for Inverse Problems Involving Incompressible Flows  
*Andrei Draganescu, Bart Van Bloemen Waanders - USA*

### **Session A3. SYSTEMS THEORY**

**Session Chairs: Corneliu POPEEA, Adrian-Mihai STOICA - ROMANIA**

**Thursday May 26, 2005, 11.30 – 13.00, Room A2**

- A3.1** Some New Results of Stability of Systems with Saturation and Multiple Delay in Command and Multiple Delay in State  
*Marcel Nicola – ROMANIA*
- A3.2** State Feedback Q-Stabilization with Robust  $H^\infty$  Performance for Systems with LFT Based Parametric Uncertainty  
*Adrian-Mihail Stoica – ROMANIA*
- A3.3** Rotational Interpolation With Disspativity Constraints  
*Corneliu Popeea, Boris Jora – ROMANIA*
- A3.4** Diagonal Invariance and Comparison Methods  
*Octavian Pastravanu, Mihaela-Hanako Matcovschi – ROMANIA*
- A3.5** Sythesis Methodology For Active Element Using Impedances - Based Bond Graph Methods  
*Nasta Tanasescu – ROMANIA*
- A3.6** A State Space Approach to the GPC Design in Delta Operator  
*Cristina Haluca, Corneliu Lazar - ROMANIA*
- A3.7** Mathematical Programs with Equilibrium Constrains and Applications to Control  
*Mihai Anitescu – USA*

### **Session A4. PETRI NETS**

**Session Chairs: Hasanne Alla – FRANCE, Simona CARAMIHAI - ROMANIA**

**Thursday May 26, 2005, 14.30 – 16.15, Room A1**

- A4.1** Supervisor Design for a Class of Discrete Event Systems  
*Daniela Cristina Cernega – ROMANIA*
- A4.2** Supervisory Synthesis for Safe Petri Nets  
*C. Bratosin, S. I. Caramihai – ROMANIA Hassane Alla – FRANCE*
- A4.3** From Forbidden States to Linear Constraints for the Optimal Supervisory Synthesis  
*Abbas Dideban, Hassane Alla – FRANCE*
- A4.4** Controlling A Manufacturing Cell Using a Multiagent System  
*Leonard Iurescu – ROMANIA*
- A4.5** Timed Continuous Extended State Machines – Study of Markings Evolutions  
*Mihaela-Hanako Matcovschi, Octavian Pastravanu – ROMANIA*

- A4.6** Petri Nets in Hybrid System Simulation Under Simulink  
*M.H. Matcovschi, C. Lefter, O. Pastravanu – ROMANIA*
- A4.7** SME's Integration on Collaborative Enterprise  
*Dan Nitescu, Radu Vasile - ROMANIA*

## **INVITED SESION AIS1. BUILDING BRIDGES BETWEEN HEALTHCARE AND ENGINEERING**

**Session Chairs: Lacramioara Stoicu-TIVADAR - ROMANIA, Leonidas ORFANIDIS – GREECE**

**Thursday, May 26, 2005, 14.30 – 16.15, Room A2**

- A5.1** Statistical and Logical Inference in Medicine  
*Adriana Albu – ROMANIA*
- A5.2** Aspects Regarding the Maintenance of a GP Information System in the Framework of a Sentinel Dispensary Network  
*Dorin Berian – ROMANIA*
- A5.3** A Model Framework to Characterise the NEHR Preparedness: A South-East European Perspective  
*Leonidas ORFANIDIS – GREECE*
- A5.4** A Meta-Incremental Development of an Integrated Information System for General Practice.  
*Vasile Stoicu-Tivadar – ROMANIA*
- A5.5** Continous Wavelet Transform and Heart Rate Variability as Methods for ECG Signal Processing - A new diagnostic tool  
*Victor Dan Moga – ROMANIA*

## **INVITED SESION AIS2. E-LEARNING APPLICATIONS**

**Session Chairs: Jacques LOTTIN - FRANCE, Dumitru POPESCU – ROMANIA**

**Thursday, May 26, 2005, 16.30-18.15, Room A2**

- A6.1** Virtual Laboratory – Didactical Platform Remote Control  
*Ion Matei, Ciprian Lupu, Dumitru Popescu – ROMANIA, Luk DeBacker Kahosl University, Gent - BELGIUM, Aziz Nakrachi - FRANCE*
- A6.2** Remote Control of a Magnetic Levitation System  
*Jacques Lottin – FRANCE, Dumitru Popescu – ROMANIA*
- A6.3** Control of Energy Consumption in Home Automation by Ressource Constrain Scheduling  
*Duy Long Ha, Stéphane Ploix, Eric Zamaï, Mireille Jacomino - FRANCE*
- A6.4** E-Learning-SkyNurse Satellite Communication System  
*Christina Drace – ITALY, Ion Matei, Catalin Petrescu, Sorin Popa – ROMANIA*
- A6.5** Computer-Based Learning Shell for Discrete Event System  
*S. I. Caramihai, J. Culita, C. Munteanu – ROMANIA*

## **Session A7. ADAPTIVE CONTROL ELECTRICAL DRIVE**

**Session Chairs: Constantin MARIN, Clement FESTILA – ROMANIA**

**Friday, May 27, 2005, 8.30 – 10.30, Room A1**

- A7.1** Adaptive Noise Cancellation Using Labview  
*C. Dumitrescu – ROMANIA*
- A7.2** Adaptive Control of DC Drives Based on Pseudo-Derivative Feedback  
*A.K.Boglou, S.Pitarokilis, G.D.Pasgianos, K.G.Arvanitis – GREECE*
- A7.3** Adaptive Control Strategies for a Class of Recycled Depollution Bioprocesses  
*Emil Petre, Constantin Marin, Dan Selisteanu – ROMANIA*
- A7.4** Stability Analysis of the Direct Field Oriented Control System of the Induction Motor  
*Corneliu Mandrescu, Olimpiu Stoicuta – ROMANIA*
- A7.5** About the Optimal Operation of the Inverter FED Induction Motor  
*Rodica Festila, Vasile Tulbure, Clement Festila – ROMANIA*
- A7.6** Adaptive Control Based on Locally Learning Techniques  
*Nicolae Constantin – ROMANIA*

### **Session A8. OPTIMAL AND PREDICTIVE CONTROL**

**Session Chairs: Didier DUMUR - FRANCE, Nicolae CONSTANTIN - ROMANIA**

**Friday, May 27, 2005, 8.30 – 10.30, Room A2**

- A8.1** The Generalized Predictive Control Applied to an Induction Drive  
*Popescu Marius-Constantin, Petrisor Anca – ROMANIA*
- A8.2** Constrained Receding Horizon Predictive Control for Position Tracking of an Induction Motor  
*Sorin Olaru, Didier Dumur – FRANCE*
- A8.3** Genetic Algorithm – Quadratic Programming Based Predictive Control For MLD Systems  
*Jean Thomas - EGYPT, Sorin Olaru, Jean Buisson, Didier Dumur - FRANCE*
- A8.4** Robust Predictive Control Applied Within a Virtual Machine Tool to Positioning During Complex Form Machining  
*Mara Susanu, Didier Dumur – FRANCE*
- A8.5** Run-to-run Optimization of Filamentous Fungal Fermentation  
*L.Bodisz, D.Bonvin – SWITZERLAND, B.Srinivasan – CANADA*
- A8.6** A Predictive Control Algorithm Applied to the Inverse Pendulum on a Cart  
*Radu Balan, Vistrian Marties, Olimpiu Hancu, Sergiu Stan – ROMANIA*
- A8.7** Solving Optimal Control Problems by Means of Genetic Algorithms  
*Ecaterina Vladu – ROMANIA*

### **INVITED SESSION AIS3. ENVIRONMENTAL CONTROL AND MONITORING SYSTEMS**

**Session Chairs: Costica NITU – ROMANIA, F. A. MKRTCHYAN – RUSSIA**

**Friday, May 27, 2005, 8.30 – 10.30, Room A3**

- A9.1** Assessing the Environmental Parameters  
*Vladimir F. Krapivin, Ivan Potapov - RUSSIA, Costica I. Nitu – ROMANIA*
- A9.2** Ecoinformatics Based Approach to the Monitoring and Prediction of the Natural Catastrophes  
*K.Ya. Kondratyev, V.F. Krapivin - RUSSIA, Costica I. Nitu – ROMANIA*
- A9.3** Remote Monitoring of the Soil-Plant Formations  
*Vladimir F. Krapivin, Anatolij M. Shutko, Alexander A. Chukhlantsev, Sergei P. Golovachev – RUSSIA, Costica I. Nitu – ROMANIA*
- A9.4** An Adaptive Spectroellipsometric Technology for the Precise Real-Time Monitoring of the Aquatic Environment,

*F.A. Mkrtyan, V. F. Krapivin, V.I. Kovalev, V.V. Klimov, A. I. Rukovishnikov, S.P. Golovachev – RUSSIA*

- A9.5** An Adaptive Technology for the Classification and Qualitative Interpretation of the Data of Remote Monitoring of Water Surface  
*Mkrtyan F.A., Krapivin V.F., Golovachev S.P., Shapovalov S.M. – RUSSIA*
- A9.6** Data Compression and Transfer within Environmental Processes  
*Alexandru Dumitrascu, Hangiu Mihai, Dan Stefanoiu - ROMANIA*
- A9.7** High Energy Efficiency Wireless Sensor Networks for Environmental Monitoring  
*Costica Nitu, Anda Dobrescu – ROMANIA*
- A9.8** A Distributed Model for Decision Support Systems  
*Corneliu C.Nitu – ROMANIA*
- A9.9** Environmental Image Integration within a Web-Based Application  
*Gabriel Costache – ROMANIA*
- A9.10** Using G.I.S. Technology for Digital Representation and Monitoring of Floodable Zones  
*Radu Ungureanu – ROMANIA*

### **Session A10. CONTROL SYSTEMS**

**Session Chairs: Dan NECSULESCU, Ioana MIHU - ROMANIA**

**Friday, May 27, 2005, 11.00 – 13.00, Room A1**

- A10.1** Automatic System for the Wheat Grind Process  
*Vintila Florin Filipescu – ROMANIA*
- A10.2** Analysis of Formation Control Schemes for Vechiles Subject to Kinematic Constraints  
*Maciek Kepka, Dan Necsulescu, Jerzy Sasiadek - CANADA*
- A10.3** A Hierarchical Architecture for Control Systems Using Blackboard Technology  
*Ozten Chelai – ROMANIA*
- A10.4** On the Robustness of Modified Smith Predictor Control for Time - Delay Systems  
*Ioan Dumitrache, Ioana Mihu, Raluca Misleanu – ROMANIA*
- A10.5** Performance Guided Hybrid LQ Controller for Time-Delay Systems  
*Vojislav Filipovic – SERBIA AND MONTENEGRO*
- A10.6** Leader Election Using Spatial Information for Real-Time Cooperative Control: Synthesis and Experimental Results  
*Cristian Tapus, Lars B. Cremean – USA*
- A10.7** Practical Solution for Software Implementation of Algorithms Switching in Multiple Models Control Systems  
*Ciprian Lupu, Catalin Petrescu, Dumitru Popescu – ROMANIA*

### **Session A11. INDUSTRIAL PROCESS CONTROL AND IDENTIFICATION**

**Session Chairs: Dumitru POPESCU, Sergiu CARAMAN - ROMANIA**

**Friday, May 27, 2005, 11.00 – 13.00, Room A2**

- A11.1** Maximum Power Point Tracking for Wind Power Systems: A Minimal Knowledge Approach  
*A.I. Bratcu, I. Munteanu, Dan Dulman – ROMANIA*
- A11.2** Identification of Nonlinear Plants Via Distributions; Application for Wastewater Biodegradation Process  
*C. Marin, E. Petre, D. Selisteanu, D. Sendrescu – ROMANIA*
- A11.3** Robust Multimodel Control Using QFT Techniques of a Wastewater Treatment Process  
*S. Caraman, M. Barbu, E. Ceanga – ROMANIA*
- A11.4** Advanced Control of Aerobic Industrial Wastewater Treatment



*Matei Vinatoru, Eugen Iancu - ROMANIA*

- A11.5** The Remote Control of Industrial Processes Using the Mobile Phone Network  
*Ravigan Florin, Petrisor Anca – ROMANIA*

### **Session A12. INTELLIGENT SYSTEMS**

**Session Chairs: Matei VANATORU, Lavinia FERARIU - ROMANIA**

**Friday May 27, 2005, 11.00 – 13.00, Room A3**

- A12.1** Efficient Algorithms for the Planning of Some Intelligent Vehicles Used for the Detection and Extinction of Fire  
*Valeriu Lupu, Catalin Lupu – ROMANIA*
- A12.2** Evolutionary Design of Heterogenous Neural Architectures with Application to System Identification  
*Lavinia Ferariu – ROMANIA*
- A12.3** A Fault Detection and Isolation System Using Neural Networks  
*Eugen Iancu, Matei Vanatoru – ROMANIA*
- A12.4** Simulation of an Implementation for a Two Decision-Making Layers Intelligent Vehicle-Highway System  
*Valentin Avram – ROMANIA*
- A12.5** Training MLP Neural Networks by Means of Genetic Algorithms  
*Ecaterina Emilia Vladu, Sanda Dale – ROMANIA*

### **Session A13. ROBOT CONTROL**

**Session Chairs: Adrian FILIPESCU, Monica DRAGOICEA - ROMANIA**

**Friday, May 27, 2005, 14.00-16.00, Room A1**

- A13.1** Reinforcement Learning Applied in Mobile Robot Path Planning  
*Mihaela Oprea – ROMANIA*
- A13.2** Diversity and Intelligence in Multi-Robot Teams  
*Monica Dragoicea – ROMANIA*
- A13.3** Attractiveness Condition and Parameter Identification for Robust Sliding-Mode WMR Control  
*A. Filipescu, A. Mocanu, S. Stamatescu - ROMANIA*
- A13.4** The Kinematic Model and the Simulation of an Omidirectional Mobile Robot  
*Angela Egri, Olimpiu Stoicuta - ROMANIA*
- A13.5** The Dynamic Accuracy Modeling in Robotics  
*Iuliu Negrean, Gabriela-Darius Albetel, Dan-Calin Negrean – ROMANIA*

### **INVITED SESION AIS4 (I). MOBILE ROBOTICS**

**Session Chairs: Mircea IVANESCU, Catalin BUIU – ROMANIA**

**Friday, May 27, 2005, 14.00-16.00, Room A3**

- A14.1** Rapid Prototyping of a Mobile Robot Controller Using FPGA Techonology  
*S. Nicola – ROMANIA*
- A14.2** Model of Underwater Mobile Robot Motion in Disturbed Environment  
*M.C. Niculescu – ROMANIA*
- A14.3** Walking Movement with Controlled Style of the Passive Leg  
*A. Petrisor – ROMANIA*
- A14.4** Videoservoing for Mobile Robots  
*D. Cojocararu – ROMANIA*

### **Session A15. ROBOTICS**

**Session Chairs: Dan POPESCU, Silviu IONITA - ROMANIA**

**Friday, May 27, 2005, 16.30-18.30, Room A1**

**A15.1** HIL Simulation and Software Control Implementation for Five Degrees of Mobility Robot by Cinematic Inverted Model

*M. Leba, E. Pop, P. Stoian – ROMANIA*

**A15.2** Beyond the Resolution of Machine Vision

*K.Khalili, S.A. Razavi – IRAN*

**A15.3** High Speed, Multitasking Visual Robot Guidance

*Th. Borangiu, F. D. Anton, S. Tunaru, A. Dogar - ROMANIA, M. Manu- USA*

**A15.4** Vision Based Anticollision System with Application on Industrial Robots

*Silviu Ionita, Petre Anghelescu – ROMANIA*

**A15.5** Tracking Trajectories for Walking Robot Control

*Constantin Marin, Anca Petrisor – ROMANIA*

### **INVITED SESION AIS5. NEW MODELS IN BIO-INFORMATICS AND HUMAN-RELATED SCIENCES**

**Session Chairs: Horia-Nicolai TEODORESCU - ROMANIA**

**Friday, May 27, 2005, 16.30 – 18.30, Room A2**

**A16.1** Tent Map Based Chaotic Circuits Application to Neuromorphic Eye

*Horia-Nicolai Teodorescu, Ciprian Zamfir – ROMANIA*

**A16.2** Neural Network Implementation of a Decision Block for the Evaluation of Genomic Sequences Recognition Scores

*Lucian-Iulian Fira, Horia-Nicolai Teodorescu – ROMANIA*

**A16.3** Recurrent Fuzzy Rules (Teodorescu's Fuzzy Systems) in Economic Process Modeling

*Marius-Dan Zbancioc – ROMANIA*

**A16.4** Assesment of Voice Quality Based on Nonlinear Dymanic Analysis

*Horia-Nicolai Teodorescu, Raluca Ganea, Monica Feraru, Ada Burlui - ROMANIA*

**A16.5** Model of Artificial Intelligence. Between Digital and Analog: From Formal to Intuitive Reasoning

*S. Ionita, E.Sofron, M.M. Ionita – ROMANIA*

**A16.6** Adaptive Fuzzy Interpolative Controllers and Applications

*Balas Marius, Balas Valentina - ROMANIA*

### **INVITED SESION AIS4 (II). MOBILE ROBOTICS**

**Session Chairs: Mircea IVANESCU, Catalin BUIU – ROMANIA**

**Friday, May 27, 2005, 16.30-18.30, Room A3**

**A14.5** New Trends in Mobile Robots

*M. Ivanescu – ROMANIA*

**A14.6** Fuzzy Logic Control for Mobile Robots Based on Artificial Potential Field Method

*M. Ivanescu – ROMANIA*

**A14.7** Controlling a Mobile Robot Along Planned Trajectories

*M. Nitulescu – ROMANIA*

**A14.8** Control Strategy and Kinematics for High Risk Environment Inspection Mobile Robot

*N. Bizdoaca – ROMANIA*

## **Session C1. ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS (I)**

**Session Chairs: Cristian GIUMALE, Adina FLOREA - ROMANIA**

**Thursday, May 26, 2005, 9.30 – 11.15, Room C1**

**C1.1** Parallel Java Expert System Shell

*Dana Petcu - ROMANIA*

**C1.2** Argumentative Agents for Flexible Diagnosis in Health Care

*Ioan Alfred Letia, Raluca Vartic – ROMANIA*

**C1.3** A Cognitive Trust Approach of Delegation in Multi-Agent Systems

*Ioan Alfred Letia, Radu Razvan Slavescu – ROMANIA*

**C1.4** Z-Based Agents for Service Oriented Computing

*Ioan Alfred Letia, Anca Chioran, Adrian Groza - ROMANIA*

**C1.5** Securing Interaction in Agent-Based Systems

*Cristian Giumale, Lorina Negreanu- ROMANIA*

**C1.6** The Effect of Flag Introduction on the Explosion of Nogood Values when using the Asynchronous Backtracking Technique

*Muscalagiu Ionel, Balan Mihai- ROMANIA*

**C1.7** Syntactic Recognition Using Fuzzy Grammar

*Decebal Popescu, Cornel Popescu – ROMANIA*

**C1.8** Neuro-Fuzzy System for Fingerprint Recognition

*Nirvana Popescu, Cornel Popescu - ROMANIA*

## **Session C2. COMPUTER NETWORKS AND DISTRIBUTED SYSTEMS**

**Session Chairs: Mihai MOCANU, Razvan RUGHINIS - ROMANIA**

**Thursday May 26, 2005, 9.30 – 11.15, Room C2**

**C2.1** Designing and Implementating an IP Telephony Architecture Over a Heterogenous Infrastructure

*Razvan Runghinis, Ioan Herisanu - ROMANIA*

**C2.2** Software Architecture Used to Develop Mobile Context and Location Aware Applications

*Mihai Cristian Enescu, Ruxandra Jitianu – ROMANIA*

**C2.3** Capturing the TCP/IP Traffic in an Ethernet LAN

*Mihai Mocanu, Mihai Dorobantu - USA, Sorin Capra – ROMANIA*

**C2.4** Design of a Remote Control Casching Proxy Administration System: Algorithm and Implementation

*Khaled Negm, Mariam Al-Aly – UAE*

**C2.5** Processor-Based Periodic Testing and Repair in Distributed Systems Using Software Agents

*Liviu Miclea, Enyedi Szilard, Gavril Todorean – ROMANIA, Dimitris Gizopoulos, Yiorgos Xenoulis – GREECE*

**C2.6** Descriptive Dynamic Rewriting GSPN-Based Performance Modeling of Computer Systems

*Emilian Gutuleac - R. MOLDOVA, Mihai Mocanu – ROMANIA*

**C2.7** A Method Taking Fast and Accurate Geo\* Snapshots of Large P2P Networks

*A.Iosup – ROMANIA, P. Garbacki, J.A. Pouwelse, D.H.J. Epema - THE NETHERLANDS*

### **Session C1. ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS (II)**

**Session Chairs: Cristian GIUMALE, Adina FLOREA - ROMANIA**

**Thursday, May 26, 2005, 11:30 – 13.00, Room C1**

- C1.9** The Redundance of Messages in the Nogood Learning Techniques Case  
*Muscalagiu Ionel, Manuela Panoiu, Osaci Mihaela – ROMANIA*
- C1.10** Agent World in Economic Learning  
*Amine Soueidy – LEBANON*
- C1.11** Character Recognition Using Neural Networks  
*Eugen Ganea, Marius Brezovan, Simona Ganea – ROMANIA*
- C1.12** Conceptual Architecture and Sample Implementation of a Multi-Agent e-Commerce System  
*Amalia Parvanescu, Costin Badica - ROMANIA, Maria Ganzha, Marcin Paprzycki – USA*
- C1.13** Reinforcement Learning with Logical Models: A Distance Based Approach  
*Mircea Preda, Dan Popescu – ROMANIA*
- C1.14** A Comparative Study on Two Hybrid Metaheuristics  
*Liviu Beldiman, Viorel Minzu – ROMANIA*

### **Session C3. SECURITY**

**Session Chairs: Nicolae TAPUS, Valentin SGARCIU - ROMANIA**

**Thursday May 26, 2005, 11.30 – 13.00, Room C2**

- C3.1** One Time Passwords for Uncertain Number of Authentications  
*Bogdan Groza, Dorina Petrica – ROMANIA*
- C3.2** New Data Coding Approach Using Quantum Cryptography  
*Madalin Stefan Vlad, Valentin Sgarciu – ROMANIA*
- C3.3** Assessment of Thor - Optical Fingerprinting to Protect Data  
*Adrian Vintu, Dacian Grapini – ROMANIA*
- C3.4** Secure Messaging System  
*Victoria Jordan – ROMANIA*
- C3.5** Design, Implementation and Testing of Mobile Agent Protection Mechanism for Manets  
*Khaled E.A. Negm – UAE*
- C3.6** A Case Study of the Pki-Tsp Based on a Practical Implementation  
*Marinescu Cristian, Nicolae Tapus - ROMANIA, Gianluca Ramunno - ITALY*
- C3.7** Secure Encryption for Confidential Information  
*Andrei Hagiescu, Tiberius Pircalabu, Nicolae Tapus – ROMANIA*
- C3.8** Trace Back Flows Methods for Tracking DoS Attacks  
*Victor-Valeriu Patriciu, Iustin Priescu, Sebastian Nicolaescu – ROMANIA*

### **Session C4. NEW TRENDS IN COMPILERS**

**Session Chairs: Irina ATHANASIU, Virgil PALANCIUC - ROMANIA**

**Thursday May 26, 2005, 14.30 – 16.15, Room C1**

- C4.1** Model Checking of Small Code Components  
*Bogdan Panghe, Irina Athanasiu – ROMANIA*
- C4.2** If-Conversion Controlled by Instruction Scheduling  
*Bogdan Ditu – ROMANIA*
- C4.3** An Informed Factorization Framework  
*Dragos Badea – ROMANIA*
- C4.4** An Evaluation of Current State-Of-Art Register Allocation Algorithms  
*Virgil Palanciuc – ROMANIA*

- C4.5** Reconfigurable High-Level/Low-Level Feedback  
*Simona-Sorina Costinescu, Anca-Gabriela Zane – ROMANIA*
- C4.6** Architecture Specification Issues in the Context of Reconfigurable Compilers  
*Raluca Vranita – ROMANIA*
- C4.7** Data Structure Verification  
*Raluca Sauciuc, Irina Athanasiu – ROMANIA*

## **Session C5. COMPUTER ARCHITECTURES**

**Session Chairs: Adrian PETRESCU, Ion BUCUR – ROMANIA**

**Thursday May 26, 2005, 16.30 – 18.15, Room C2**

- C5.1** Three Implementations of the General Smith-Waterman Algorithm: a Comparative Study  
*Octavian Cret, Zsolt Mathe, Balint Szente, Stefan Mathe, Lucia Vacariu, Adrian Darabant – ROMANIA*
- C5.2** An Interactive Approach to Support Vector Machines  
*Paul Bogdan – ROMANIA*
- C5.3** Constructing Checkers from PSL Properties  
*Stefan Valentin Gheorghita - THE NETHERLANDS, Radu Grigore – ROMANIA*
- C5.4** Undetectable Bridging Faults in Combinational Circuits  
*Ion Bucur – ROMANIA*
- C5.5** Partitioning Combinational Circuits  
*Ion Bucur – ROMANIA*
- C5.6** Mapping Techniques Targeting Minimum Delay for k-LUT Based FPGA Evaluation  
*Ion Bucur – ROMANIA*
- C5.7** Strategies in Functional Verification Based On SAT and BDDs  
*Ion Bucur, Daniel Avieritei – ROMANIA*
- C5.8** A Variable Single-Cycle Instruction Data Path Simple MIPS Processor  
*Jacob Petrescu, Adrian Petrescu – ROMANIA*

## **Session C6. INVITED SESSION: GRID COMPUTING**

**Session Chairs: Nicolae TAPUS, Valentin CRISTEA – ROMANIA**

**Friday, May 27, 2005, 8.30 – 10.30, Room C1**

- C6.1** Aspects of Grids Over Mobile Phone Network  
*Bogdan Ioan Fartatescu – ROMANIA*
- C6.2** A Simulation Study for T0/T1 Data Replication and Production Activities  
*Iosif Legrand - USA, Ciprian Mihai Dobre, Ramiro Voicu, Corina Stratan, Catalin Cirstoiu, Lucian Musat – ROMANIA*
- C6.3** Distributed Agents for Global Optimization and Control in MonALISA Framework  
*Iosif Legrand - USA, Mihaela Toarta, Ramiro Voicu, Costin Grigoras, Adrian Muraru, Corina Stratan – ROMANIA*
- C6.4** LISA (Local Host Information Service Agent)  
*Iosif Legrand - USA, Ciprian Mihai Dobre, Ramiro Voicu, Corina Stratan, Catalin Cirstoiu, Lucian Musat – ROMANIA*
- C6.5** Real-Time Job Monitoring in GRID Environments Using MonALISA and ApMon  
*Iosif Legrand - USA, Corina Stratan, Catalin Cirstoiu, Mihaela Toarta, Costin Grigoras, Adrian Muraru – ROMANIA*
- C6.6** Information Gathering and Management in MonaALISA Framework

*Costin Grigoras, Adrian Muraru, Lucian Musat, Mihaela Toarta, Ramiro Voicu – ROMANIA, Iosif Legrand – USA*

**Session C7. DATABASES AND APPLICATIONS (I)**

**Session Chairs: Mircea PETRESCU, Florin RADULESCU -ROMANIA**

**Friday, May 27, 2005, 8.30 – 10.30, Room C2**

**C7.1** Transposed Relation Implementation: Past, Present and Future

*M.Petrescu, F. Radulescu – ROMANIA*

**C7.2** A New Method for Content-Based Region Query

*Dumitru Dan Burdescu, Liana Stanescu, Anca Ion – ROMANIA*

**C7.3** Software System for Content-Based Region Query with Relative Localization

*Liana Stanescu, Dumitru Dan Burdescu, Mihai Suiu - ROMANIA*

**C7.4** FP-Growth Algorithm for Multi-Level Databases

*Robert Gyorodi, Cornelia Gyorodi, Mirela Pater, Ovidiu Boc, Zoltan David – ROMANIA*

**C7.5** Multi-Level Apriori Algorithms

*Mirela Pater, Robert Gyorodi, Cornelia Gyorodi, Ovidiu Boc, Zoltan David – ROMANIA*

**C7.6** Security Enforcement of Query Optimizers

*Lorina Negreanu, Cristian Giumale – ROMANIA*

**Session C7. DATABASES AND APPLICATIONS (II)**

**Session Chairs: Mircea PETRESCU, Florin RADULESCU -ROMANIA**

**Friday, May 27, 2005, 11.00 – 13.00, Room C2**

**C7.7** Cryptography at the Relational Database Management System Level

*Dan Gheorghe – ROMANIA*

**C7.8** Using Web Services in Web Information Retrieval

*Mihai Mocanu, Mihai Dorobantu – ROMANIA*

**C7.9** Handling Network Timeouts in Case of Java Remote Method Invocation

*Mihai Balan - DENMARK, Ionel Muscalagiu – ROMANIA*

**C7.10** Web Services – A Case Study

*Madalina Nedelea, Daniela Saru, Stefan Mocanu - ROMANIA*

**C7.11** Re-Design of the IT&C System after a Business-Merge

*Mariana Mocanu – ROMANIA*

**C7.12** Mass Optimization of a Mechanical Structure Using Finite Element Analysis

*E. Maican, F.Radulescu – ROMANIA*

**Session C8. E-LEARNING**

**Session Chairs: Valentin CRISTEA, Nicolae TAPUS - ROMANIA**

**Friday, May 27, 2005, 11.00 – 13.00, Room C1**

**C8.1** Patterns for E-learning

*Valentin Cristea – ROMANIA*

**C8.2** Software Assistant for Students with Learning Disabilities

*Sergiu Dascalu, Maryann Chandy, Frederick Harris - USA, Daniela Saru - ROMANIA*

- C8.3** Authoring Environment System for Creating Teaching Files from PACS  
*A. Delistamatis, G. Delovski, M. Mantatzis - GREECE, N. Tapus - ROMANIA*
- C8.4** Towards an Ontology Based Approach for E-learning  
*Dan Garlasu – ROMANIA*
- C8.5** Unismart - A Solution for e-Learning Content Management  
*Cristina Niculescu – ROMANIA*

**Session C9. GRAPHICS AND IMAGE PROCESSING**

**Session Chairs: Florica MOLDOVEANU, Carmen ODUBASTEANU - ROMANIA**

**Friday, May 27, 2005, 14.00 – 16.00, Room C1**

- C9.1** Reconstruction on Three-Dimensional Objects from Parallel Planar Sections - Vertical Planes  
Algorithm for the Tiling Problem  
*Catalin Tudose, Tudor Metea, Carmen Odubasteanu – ROMANIA*
- C9.2** Fully Automatic, Real-Time Head-Pose Estimation Using Stereo Vision  
*Ciprian Cudalbu, Bogdan Anastasiu, Horia Grecu - ROMANIA, Erhardt Barth – GERMANY*
- C9.3** Multimodal Biometric Systems  
*Catalin Lupu, Valeriu Lupu – ROMANIA*

**Second Symposium on “Interdisciplinary Approaches in Fractal Analysis”**

**Session F1. COMPLEXITY, SIMILITUDE AND POWER LAWS**

**Session Chairs: Dan IORDACHE, Mihai CEAPARU - ROMANIA**

**Thursday, May 26, 2005, 9.30 – 11.15, Room A3**

- F1.1** Power Scaling Laws for Electrical Engineering and Applied Mechanics Materials  
*Dan Iordache, Viorica Iordache - ROMANIA*
- F1.2** Complexity, Similitude and Fractals in Physics  
*Dan Iordache, Ștefan Pușcă, Viorica Iordache – ROMANIA, P.P. Delsanto - ITALIA*
- F1.3** Fractal Analysis of Video Traffic on Wireless Networks  
*Matei Dobrescu, Ștefan Mocanu - ROMANIA*
- F1.4** Self-Similarity in Wireless Networks  
*Roland Ulrich, Michael Rothenberg - ROMANIA*
- F1.5** An Iterative Approach to Support Vector Machines  
*Paul Bogdan - ROMANIA*
- F1.6** A Distributed Diagnosis Method for Computer Networks  
*Mihai Ceaparu, Valentin Sgarciu - ROMANIA*
- F1.7** Fuzzy Rule Base Complexity Reduction: a Survey  
*Daniela Andone – ROMANIA*

**Session F2. FRACTALS AND CHAOS IN EVOLUTIONARY PROCESSES**

**Session Chairs: Paul FLONDOR, Catalin VASILESCU -ROMANIA**

**Thursday, May 26, 2005, 11.30 – 13.00, Room A3**

- F2.1** Some Aspects Concerning the Simulation of a Sepsis Treatment  
*Virginia Ecaterina Oltean – ROMANIA*
- F2.2** The Dynamics of the Inflammatory Processes

*Paul Flondor, Catalin Vasilescu – ROMANIA*

- F2.3** Dynamical Behavior of Systems Modelling Sepsis  
*Cristina Bercia - ROMANIA*
- F2.4** A Model for the Molecular Interactivity in Sepsis Based on Scale-Free Networks  
*Ciprian Ivan, Radu Dobrescu, Catalin Vasilescu - ROMANIA*
- F2.5** Various Modeling Types for Sepsis Dynamics Simulation  
*Sabin Stoicescu - ROMANIA*
- F2.6** Patient Evolution Prediction with Variables Constructed from Temporal Sequences  
*Radu Dobrescu, Calin Soare – ROMANIA*

### **Session F3. FRACTALS AND CHAOS IN IMAGE AND DATA PROCESSING**

**Session Chairs: Dan POPESCU, Valentin SGARCIU - ROMANIA**

**Thursday, May 26, 2005, 14:30 – 16.15, Room A3**

- F3.1** Association of Fractal Dimension to Textural Features of Images  
*Nicoleta Angelescu , Daniela Alexandra Crişan - ROMANIA*
- F3.2** Nonlinear Analysis of Medical Images  
*Rodica Dragomir, Mircea Olteanu, Mihai Tanase – ROMANIA, Frank Doidy - FRANTA*
- F3.3** Comparing Methods for Image Texture Analysis: A Survey  
*Nicoleta Angelescu , Daniela Alexandra Crişan, Radu Dobrescu, Dan Popescu - ROMANIA*
- F3.4** Improving RS and GIS Image Analysis by Using Fractal Techniques  
*Victor Vasilescu, Bogdan Droasca - ROMANIA*
- F3.5** Wavelet Investigation in Electroretinogram  
*Dorina Creanga- ROMANIA*
- F3.6** Decryption Techniques Based on Artificial Intelligence and Chaos Theory  
*Catalin Cosoi, Madalin Vlad, Valentin Sgarciu – ROMANIA*
- F3.7** Fractal Analysis of Galaxies Clustering  
*Sanziana Paduroiu, Mircea Rusu – ROMANIA*

### **Session F4. FRACTALS AND CHAOS IN CHEMISTRY AND BIOLOGY**

**Session Chairs: Mircea RUSU, Eugen GHEORGHIU - ROMANIA**

**Thursday May 26, 2005, 16.30 – 18.15, Room A3**

- F4.1** SEM Investigations for Fractal Dimension Computation of Nanotubes  
*Gianina Dobrescu, Valentina Lazarescu, Mircea Rusu - ROMANIA , Christine Taeschner, Lothar Dunsch – GERMANIA*
- F4.2** Fractal Analysis of Micrographs and Absorption Isotherms of Perovskites  
*Gianina Dobrescu, Dana Berger, Florica Papa, Iudit Fangli, N.I.Ionescu, Mircea Rusu - ROMANIA*
- F4.3** Surface Reconstruction on a Larger Scale of Cu(110) in Dilute Hydrochloric Acid: a Dynamic Scaling Approach  
*Gianina Dobrescu, M.Anastasescu, N.I.Ionescu, M.Rusu - ROMANIA*
- F4.4** Fractal Analysis: an Objective Method for Characterization of Subcellular Structures  
*Loretta Ichim, Coralia Bleotu - ROMANIA*
- F4.5** Non-linear Aspects in Kidney Physiology  
*Dorina Creanga - ROMANIA*
- F4.6** Assessment of Cell Cycle by Chaos Theory  
*Eugen Gheorghiu – ROMANIA*
- F4.7** Structural and Functional Variability in PR Gene of HIV 1 Clade F  
*Paul Cristea – ROMANIA*



# **GENERAL INFORMATION**

## **LOCATION**

CSCS15 will be held at the Faculty of Automatic Control, "POLITEHNICA" University of Bucharest, Spl. Independentei nr.313, Bucharest, Romania. The formal Opening Ceremony will be organized in the EC105 room, Faculty of Automatic Control and Computers.

## **ACCESS TO CONFERENCE SITE**

The Conference site can be accessed by the following means of transportation:

- By underground - The Conference site is at 5 minutes walk from  
POLITEHNICA underground station
- By bus - Nos. 136, 236, 336 (UPB Stop)
- By trolley bus - Nos. 61, 62 (UPB Stop)

## **CAR PARKING**

There are free and ample parking facilities in the immediate vicinity of the Conference site.

## **MAIL**

Correspondence in connection to the CSCS15 Conference should be addressed as it follows:

CSCS15 - SRAIT  
"POLITEHNICA" University of Bucharest  
Faculty of Control and Computers  
Spl. Independentei nr.313, Sector 6  
77206 Bucharest  
ROMANIA  
PHONE + (40) 21 402 91 67  
FAX + (40) 21 402 95 87  
e-mail cscs15@ics.pub.ro

## **CONFERENCE LITERATURE**

The text of the contributions included in the final programme will be published after the Conference and distributed to all registered participants who have paid the registration fee and presented their papers.

## **WORKING LANGUAGE**

The working language of CSCS15 is English and will be used for presentations and discussions.

## **NAME BADGE**

An admission badge bearing the participant's name will be issued to all registered participants, thus authorizing access to all Conference sessions.

## **GET ACQUAINTED COCKTAIL PARTY**

A Get Acquainted Cocktail Party will be held on Thursday 26<sup>th</sup> May 2005 from 19:30 hours at Casa Oamenilor de Stiinta Restaurant. The cost of attendance is covered by the registration fee.

## **REFRESHMENTS**

Refreshments will be available at the Conference site daily.

## **LUNCHESES**

Self-lunches will be available in the Leu Complex. The price for a lunch varies between 3 Euros and 5 Euros.

## **DINNER**

Dinner will be served Friday night at 20:00 hrs. The price of a diner will be around 15 Euros.

## **REGISTRATION AND INFORMATION DESK**

The CSCS15 Registration Desk will be open at the Conference site, Faculty of Automatic Control and Computers starting from 25<sup>th</sup> May 2005, 14:00 hrs.

## **REGISTRATION FEE**

Registration fee is 250 Euro and includes participation, volumes, coffee breaks and cocktail. The fee for foreign students is 50 Euro. For Romanian participants and SRAIT members the fee will be 700.000 ROL and 350.000 ROL, respectively. Student members of SRAIT will pay 100.000 ROL.

## **CLIMATE**

The weather in Bucharest is warm in May. Temperatures between 20°C to 30°C are to be expected.

## **INSURANCE**

The organizers cannot be held liable for accidents to participants or for damage to, or loss their personal property, howsoever caused. Participants are advised to make their own insurance arrangements.