IEEE DCOSS '11

IEEE International Conference on Distributed Computing in Sensor Systems
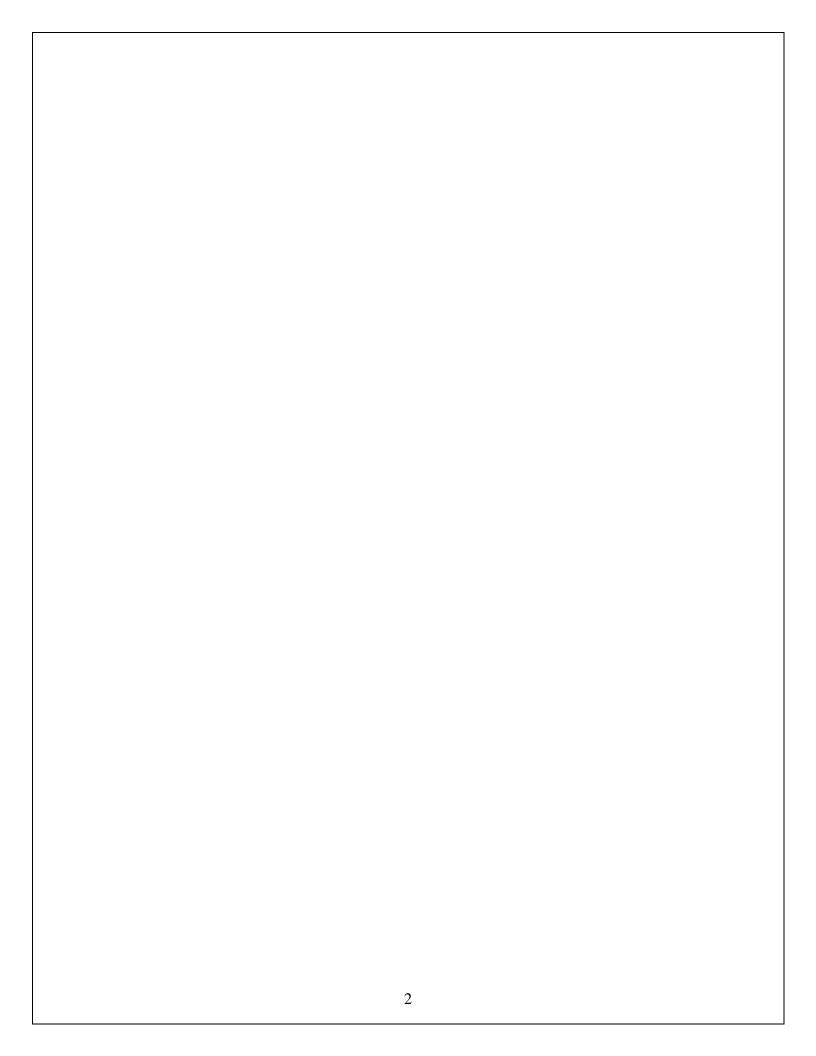
27-29 June 2011
Barcelona, Spain

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Foreword by Conference Chairs

The 7th IEEE International Conference on Distributed Computing in Sensor Systems (IEEE DCOSS '11) is taking place at the Casa Convalescència in Barcelona, Spain, from Monday, June 27 - Wednesday, June 29, 2011. Earlier editions were the DCOSS 2005 (Marina del Rey, California), DCOSS 2006 (San Francisco, California), DCOSS 2007 (Santa Fe, New Mexico), DCOSS 2008 (Santorini Island, Greece), DCOSS 2009 (Los Angeles, California, USA) and DCOSS 2010 (Santa Barbara, California).

As in previous editions, this year's DCOSS features high quality research papers and interesting invited and contributed posters. The conference covers several aspects of distributed computing in sensor systems such as high level abstractions and models, systematic design methodologies, signal and information processing, algorithms, analysis and applications.

We have received a record submission of 120 conference papers, from which we were able to accept 34 highest quality papers at an acceptance ratio of 28%. We also feature an unprecedented 5 workshops, 6 posters, 5 work-in-progress papers and 9 (!) live demonstrations. We are also proud to feature two cutting-edge keynotes on issues currently driving the embedded computing societies. We hope that this will make a forward-looking forum for researchers and practitioners and lead to lively discussions throughout the three days.

We would like to take this opportunity to thank all those who have made this event possible, i.e. the technical vice chairs and all other chairs, the TPC members, the anonymous reviewers, the staff in the field preparing as well as helping out during the event, and the authors of all submitted papers.

We look forward to welcoming you in Barcelona to DCOSS 2011!

Ivan Stojmenovic
General Co-Chair
University of Ottawa
Canada

Mischa Dohler
General Co-Chair
CTTC
Spain

Adam Dunkels
Technical Chair
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DCOSS 2011 Organization

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University of Ottawa
Canada

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Qing Cao, University of Tennessee, USA
Sandra Sendra, Polyt. U. of Valencia, Spain
Song Guo, University of Aizu, Japan
Srdjan Krco, Ericsson, Serbia
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Xufei Mao, BUPT, P.R. China
Zheng Yang, Tsinghua University, P.R. China

Thank you for your help in reviewing and handling the DCOSS 2011 papers!

Keynote Monday 27 June 2011

Silvia Giordano
SUPSI - University of Applied Science, Switzerland

Mobile Phones and Opportunistic Computing: A New Human Dimension in the Sensor World

The recent proliferation of sensor-equipped smartphones has brought sensor networking to the general public in the form of mobile phone sensing. By reaching out to mainstream users, mobile phone sensing has the potential of achieving the pervasive computing vision by putting the human element in the foreground. Because mobile phone sensing may require computationally intensive applications, it is impractical and inefficient to stick to local processing. On the other hand, the emerging trend of offloading expensive tasks to the mobile computing cloud has a significant energy footprint and suffers from the drawbacks of extreme centralization. Opportunistic computing provides an appealing alternative to the mobile computing cloud by allowing devices to join forces and leverage heterogeneous resources from other devices. Because this is only possible by leveraging human mobility, opportunistic computing adds even more prominence to the role of the human element, which is already central to mobile phone sensing and now becomes the key enabler of pervasiveness.

Silvia Giordano, is currently a Professor at the University of Applied Sciences of Southern Switzerland (SUPSI) in Manno, Switzerland. She earned a Ph.D. in Computer Science from the Swiss Federal Institute of Technology in Lausanne, Switzerland. Currently, she also holds the position of Director of the Networking Lab at SUPSI. She is one of the founder of the Opportunistic Networking and Computing area, with the European projects Haggle and SCAMPI. She has published extensively in the areas of opportunistic networking and computing, wireless and mobile ad hoc networks, sensor networks, quality of service, and traffic control in wireless networks. Silvia Giordano serves as a series editor of the IEEE Communications Magazine, as an area editor of the Elsevier Computer Communications journal, as well as a member of the Advisory Board of the Ad Hoc Networks journal published by OCP Science. She is also a member of the Editorial Board of the Journal of Ubiquitous Computing and Intelligence (JUCI) and of the Journal of Autonomic and Trusted Computing (JoATC), both published by American Scientific Publishers (ASP), as well as of the Mediterranean Journal of Computer and Networks, published by SoftMotor. She is a member of the IEEE Computer Society, of the ACM, and of the IFIP Working Group on Mobile and Wireless Communications (WG 6.8). Prof. Giordano has served as program chair and general chair for several international conferences, including the IEEE Pervasive Computing and Communication (PerCom), IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks (WoWMoM), IEEE Vehicular Technology Conference (VTC) and the IEEE Mobile Ad-hoc and Sensor Systems (MASS). Since 2005, Silvia Giordano has also been a co-organizer and steering committee member of the International Workshop on Sensor Networks and Systems for Pervasive Computing (PerSeNS), which takes place every year and is co-located with the PerCom. She is also the Program Co-chair of MASS 2011, in Barcelona - October 2011, and General Co-chair of PerCom 2012 in Lugano, Switzerland, in March 2012.

Keynote Tuesday 28 June 2011

Yunhao Liu,
Hong Kong University of Science and Technology, HK

GreenOrbs: Lessons Learned from Extremely Large Scale Sensor Network Deployment

"The world has just ten years to bring greenhouse gas emissions under control before the damage they cause becomes irreversible." This is a famous prediction raised by climate scientists and environmentalists recently. It reflects the increasing attention in the past decade from human beings on global climate change and environmental pollution. On the other hand, forest, which is regarded as the earth's lung, is a critical component in global carbon cycle. It is able to absorb 10%~30% of CO_2 from industrial emissions. Moreover, it has large capacity of water conservation, preventing water and soil loss, and hence reducing the chance of nature disasters like mud-rock flows and floods. Forestry applications usually require long-term, large-scale, continuous, and synchronized surveillance of huge measurement areas with diverse creatures and complex terrains. The state-of-arts forestry techniques, however, support only small-scale, discontinuous, asynchronous, and coarse-grained measurements, which at the same time incur large amount of cost with respect to human resource and equipments. WSNs have great potential in resolving the challenges in forestry. Under such circumstances, GreenOrbs is launched. The information GreenOrbs offers can be used as evidences, references, and scientific tools for human beings in the battle against global climate changes and environmental pollution. The prototype system is deployed in the campus woodland of Zhejiang Forestry University. The deployment area is around 40,000 square meters. The deployment started in May 2009 counts on 500 since Dec. 2010. The network diameter is 12 hops. The sensor data are published online via the official GreenOrbs website. The Tianmu Mountain deployment includes 200 nodes and has been in continuous operation since August 2009. The deployment area is around 200,000 square meters. The duty cycle of nodes is set at 5%. The network diameter is 20 hops. We plan to deploy 4000 sensors in a city later this year. We learned a lot of lessons during the deployment of GreenOrbs. In this discussion, we will focus on several open issues for extremely large scale deployment of sensor networks including routing, diagnosis, localization, link quality, and etc.

Yunhao Liu received his BS degree in Automation Department from Tsinghua University, China, in 1995, and an MS and a Ph.D. degree in Computer Science and Engineering at Michigan State University in 2003 and 2004, respectively. He holds the EMC Chair Professorship at Tsinghua University. He is a member of Tsinghua National Lab for Information Science and Technology, and the Director of Tsinghua National MOE Key Lab for Information Security. He is also a faculty at the Department of Computer Science and Engineering, the Hong Kong University of Science and Technology. He is currently serving as the Associate Editor of IEEE Transactions on Mobile Computing and IEEE Transactions on Parallel and Distributed Systems. He is now the Vice Chair of ACM China Council in charge of operation, and an ACM Distinguished Speaker.

Conference Program Day #1

Monday, 27 June 2011

9:00 - 9:15 Opening Remarks

9:15 - 10:15 Keynote Address: "Mobile Phones and Opportunistic Computing: a New Human Dimension in the Sensor World," *Silvia Giordano, SUPSI - University of Applied Science, Switzerland*

10:15 - 10:30 Break

10:30 - 12:10 Algorithms and Performance Analysis: Efficient Communication in Networked Sensor Systems
- YA-MAC: Handling Unified Unicast and Broadcast Traffic in Multi-hop Wireless Sensor Networks
  Poonam Yadav and Julie A McCann[1]
- Link Quality Ranking: Getting the Best out of Unreliable Links
  Marco Antonio Zuniga, Izabela Irzynska, Jan-Hinrich Hauer, Thiemo Voigt, Carlo Alberto Boano, Kay Roemer
- Local Silencing Rules for Randomized Gossip
  Ali Daher, Michael Rabbat, Vincent Lau
- Planning the Trajectories of Multiple Mobile Sinks in Large-Scale, Time-Sensitive WSNs
  Wint Yi Poe, Michael Beck, Jens Schmitt
- LIPS: Link Prediction as a Service for Adaptive Data Aggregation in Wireless Sensor Networks
  Xiao Ma, Seddik M. Djouadi, Qing Cao

12:10 - 13:10 Lunch

13:10 - 15:10 Systems and Applications I: From Motes to Massive Networks
- Stackless Preemptive Multi-Threading for TinyOS
  William McCartney, Nigamanth Sridhar
- Type-Safe Updating for Modular WSN Software
  Barry Porter, Utz Roedig, Geoff Coulson
- Fast Distributed Simulation of Sensor Networks using Optimistic Synchronization,
  Hao Jiang, Jiannan Zhai, Sally Wahba, Biswajit Mazumder, Jason O. Hallstrom
- Compiling Business Process Models for Sensor Networks
  Alexandru Caracas, Alexander Bernauer
- A Distributed Architecture For Heterogeneous Multi Sensor-Task Allocation
  Diego Pizzocaro, Alun Preece, Fangfei Chen, Tom La Porta, Amotz Bar-Noy

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[1] Note that affiliations have been purposely omitted throughout but can be obtained from the electronic conference proceedings.

- Directional Diagnosis for Wireless Sensor Networks
  Wei Gong, Kebin Liu, Yunhao Liu, Xibin Zhao, Ming Gu

15:10 - 15:25 Break

15:25 - 16:25 Systems and Applications: System Support for Mobility
- ALF: An Autonomous Localization Framework for Self-Localization in Indoor Environments
  Juergen Eckert, Reinhard German, Falko Dressler
- MobiSense: Power-Efficient Micro-Mobility in Wireless Sensor Networks
  Antonio OLiveira Gonga,Olaf Landsiedel, Mikael Johansson
- Group Monitoring in Mobile Wireless Sensor Networks
  Marco Cattani, Stefan Guna, Gian Pietro Picco

16:25 - 16:30 Break

16:30 - 17:30 Signal Processing and Information Theory: Low-Power Communication
- A Wireless Communication Selection Approach to Minimize Energy-per-bit For Wearable Computing Applications
  Vitali Loseu, Roozbeh Jafari
- Distributed Local Broadcasting Algorithms in the Physical Interference Model
  Yu Dongxiao, Amy Yuexuan Wang, Qiang-Sheng Hua, Francis C.M. Lau
- Transmission Control Policy Design for Decentralized Detection in Sensor Networks
  Ashraf Tantawy, Xenofon Koutsoukos, Gautam Biswas

17:30 - 19:00 WIP pitches, poster pitches and sessions, demos which are also available throughout the day
- Work-in-Progress: Efficient Heuristics for Low Radiation Paths in Wireless Sensor Networks
  Sotiris Nikoletseas, Dimitra Patroumpa, Christoforos Raptopoulos, Jose Rolim
- Work-in-Progress: A New Random Walk for Data Collection in Sensor Networks
  Constantinos Marios Angelopoulos, Sotiris Nikoletseas, Dimitra Patroumpa, Christoforos Raptopoulos
- Work-in-Progress: MiceNet: Monitoring Behaviour of Laboratory Mice with Sensor Networks
  Grigore Stamatescu, Kay Roemer, Ralf Ludwig, Saleh Ibrahim, Valentin Sgârciu
- Work-in-Progress: Towards Optimal Online Approximation of Data Streams
  Philip Sitbon, Nirupama Bulusu, Wu-chi Feng
- Work-in-Progress: Energy Saving through Cooperation in Wireless Personal Networks
  Alberto Nascimento

- Poster: Sleep Scheduling Towards Geographic Routing in Duty-Cycled Sensor Networks

Chunsheng Zhu, Laurence T. Yang, Lei Shu, Joel J. P. C. Rodrigues, Takahiro Hara

- Poster: An Efficient Sensing Approach Using Dynamic Multi-Sensor Collaboration for Activity Recognition
  Lei Gao, Alan Bourke, John Nelson
- Poster: Robust Overlay Multicast On-demand Protocol in Mobile Ad-hoc Network
  Ho Jin Jung
- Poster: Architecture for Wireless Sensor and Actor Networks Control and Data Acquisition
  Petre Lameski, Eftim Zdravevski, Andrea Kulakov, Danco Davcev
- Poster: A Modelling Notation for Mobile Message Sharing based on Task and Roles
  Yih-Jiun Lee, Kai-Wen Lien
- Poster: A Distance-Measurement-Oriented Distributed TDMA Scheduling Algorithm for Sensor Networks
  Koji Sato, Shiro Sakata

- Demo: Sensor Network aided Agile Spectrum Access through Low-Latency Multi-Band Communications
  Christian Bonnet, Daniel Camara, Riadh Ghaddab, Lorenzo Iacobelli, Florian Kaltenberger, Raymond Knopp, Bertrand Mercier, Navid Nikaein, Dominique Nussbaum, Erhan Yilmaz, Bassem Zayen
- Demo: The acoowee-Framework
  Gerhard Fuchs, Lorenz Büttner, Christoph Damm, Mirko Hansen, Florian Heisig, Tim Seyschab, Reinhard German
- Demo: Human-CoAP Interaction with Copper
  Matthias Kovatsch
- Demos: (2 demos using SensLAB) Very Large Scale Open WSN Testbed
  Clément Burin des roziers, Guillaume Chelius, Tony Ducrocq, Eric Fleury, Antoine Fraboulet, Antoine Gallais, Nathalie Mitton, Thomas Noël, Erkan Valentin, Julien Vandaele
- Demo: A Distributed Architecture For Heterogeneous Multi Sensor-Task Allocation
  Diego Pizzocaro, Alun Preece, Fangfei Chen, Tom La Porta, Amotz Bar-Noy
- Demo: Securing Communication in 6LoWPAN with Compressed IPsec
  Shahid Raza, Simon Duquennoy, Thiemo Voigt, Utz Roedig
- Demo: Event-driven IPv6 Communication for the Smart Grid Infrastructure
  Joel Höglund, Joakim Eriksson, Niclas Finne, Robert Sauter, Stamatis Karnouskos
- Demo: Zolertia's IP-enabled flexible and open smart sensing platform
  Marc Fàbregas Bachs

20:00 - ... Social Event

Conference Program Day #2

Tuesday, 28 June 2011

8:30 - 9:30 Keynote Address: "GreenOrbs: Lessons Learned from Extremely Large Scale Sensor Network Deployment, "*Yunhao Liu, Hong Kong University of Science and Technology, Hong Kong*

09:30 - 11:30 Algorithms and Performance Analysis: Dynamic and Mobile Sensor Systems
- STARS: Static Relays for Multi-Robot Real-time Search and Monitoring
  Yuanteng Pei, Matt Mutka
- On Sensor Selection in Linked Information Networks
  Charu Aggarwal, Amotz Bar-Noy, Simon Shamoun
- Data Quality Maximization in Sensor Networks With a Mobile Sink
  Xu Xu, Weifa Liang, Tim Wark
- VIP Delegation: Enabling VIPs to Offload Data in Wireless Social Mobile Networks
  Marco Valerio Barbera, Julinda Stefa, Aline Carneiro Viana, Marcelo Dias de Amorim, Mathias Boc
- TED: Efficient Type-based Composite Event Detection for Wireless Sensor Network
  Steven Lai, Jiannong Cao, Xiaopeng Fan

11:30 - 11.45 Break

11:45 - 13.05 Algorithms and Performance Analysis: Efficient Communication in Networked Sensor Systems II
- A computationally inexpensive and power efficient fully distributed topology for data collection in heterogeneous wireless sensor networks
  Amitabha Bagchi, Adit Madan, Achal Premi
- A Distributed Deterministic Approximation Algorithm for Data Association
  Songhwai Oh
- DISSense: An Adaptive Ultralow-power Communication Protocol for Wireless Sensor Networks
  Ugo Maria Colesanti, Silvia Santini, Andrea Vitaletti
- Exploiting Concurrency for Efficient Dissemination in Wireless Sensor Networks
  Yi Gao, Jiajun Bu, Wei Dong, Chun Chen, Lei Rao, Xue Liu

13:05 - 14.00 Lunch

14:00 - 15:20 Signal Processing and Information Theory: Optimization and Control in Sensor Networks
- Distributed Localization and Clustering Using Data Correlation and the Occam's Razor Principle

Pankaj Agarwal, Alon Efrat, Chris Gniady, Joseph Mitchell, Valentin Polishchuk, Girishkumar Sabhnani
- Self-Triggered Control over Wireless Sensor and Actuator Networks
  Jose Araujo, Adolfo Anta, Manuel Mazo Jr., Joao Faria, Aitor Hernandez, Paulo Tabuada, Karl H. Johansson
- Chebyshev Polynomial Approximation for Distributed Signal Processing
  David Shuman, Pierre Vandergheynst, Pascal Frossard
- A Distributed Information Fusion Method for Localization Based on Pareto Optimization
  Alessio De Angelis, Carlo Fischione

15:20-15:35 Break

15:35 - 16:55 Systems and Applications: System Support for Efficient Communication in Sensor Systems
- Optimizing Quality-of-Information in Cost-sensitive Sensor Data Fusion
  Dong Wang, Hossein Ahmadi, Tarek Abdelzaher, Harsha Chenji, Radu Stoleru, Charu Aggarwal
- Securing Communication in 6LoWPAN with Compressed IPsec
  Shahid Raza, Simon Duquennoy, Antony H M Chung, Dogan Yazar, Thiemo Voigt, Utz Roedig
- Opportunistic Concurrency: A MAC Protocol for Wireless Sensor Networks
  Qiang Ma, Kebin Liu, Xin Miao, Yunhao Liu
- Flip-MAC: A Density-Adaptive Contention-Reduction Protocol for Efficient Any-to-One Communication
  Douglas Carlson, Andreas Terzis

17:00 Closing Remarks & Closure of Main Conference

Workshops Program LOCALGOS'11

Wednesday morning, 29 June 2011

5th International Workshop on Localized Algorithms and Protocols for Wireless Sensor Networks (LOCALGOS)

Steering Committee Chair:
Ivan Stojmenovic, University of Ottawa, Canada

Program Co-Chairs:
Symeon Papavassiliou, National Technical University of Athens, Greece
Song Guo, University of Aizu, Japan
Timotheos Kastrinogiannis, National Technical University of Athens, Greece

9:15 - 9:30: Opening remarks

9:30 - 10:30: Session 1: Distributed algorithms in wireless sensor networks
- Autonomic Cooperation in Ad-hoc Environments
  Michał Wodczak
- Distributed Algorithm for the Actor Coverage Problem in WSN-based Precision Irrigation Applications
  Abdelouahid Derhab and Nourredine Lasla

10.30 - 11.00: Coffee break

11:00 - 12:30: Session 2: Localised algorithms in wireless sensor networks
- A Local Average Consensus Algorithm for Wireless Sensor Networks
  Konstantin Avrachenkov, Mahmoud El Chamie and Giovanni Neglia
- Construction of Connected Dominating Sets in Large-Scale MANETs Exploiting Self-Stabilization
  Stefan Unterschutz and Volker Turau
- Wireless Sensor Networks Localization Based on QOS by Using One Beacon
  Farzad Tigh Panahi, Abolfazl Torghi Haghighat and Farzaneh Tigh Panahi

12:30 – 12:45 Closing Remarks

12.45 - 14.00: Lunch

Workshops Program MobiSensor'11

Wednesday afternoon, 29 June 2011

Second International Workshop on Mobility in Wireless Sensor Networks (MobiSensor'2011)

Program Co-Chairs:
Damianos Gavalas, University of the Aegean, Greece
Grammati Pantziou, Technological Educational Institution of Athens, Greece
Charalampos Konstantopoulos, University of Piraeus, Greece

12:30 - 14:00 Lunch

14:00 - 14:05: Opening Remarks (Dr. Charalampos Konstantopoulos)
14:05 – 15.:30: Mobility Aware Techniques in Wireless Sensor Networks I
- 6LoWDTN: IPv6-Enabled Delay-Tolerant WSNs for Contiki
  Luca Bruno, Mirko Franceschinis, Claudio Pastrone, Riccardo Tomasi, Maurizio Spirito (Istituto Superiore Mario Boella, Torino, Italy)
- Force-Based Navigation in Wireless Sensornets
  Igor Talzi, Massimo Monti, Thomas Meyer, Christian Tschudin (University of Basel, Switzerland)
- A Wireless Sensor Network for Soccer Team Monitoring
  Miguel García (Universidad Politécnica de Valencia, Spain), Angel Catalá (Universidad Politécnica de Valencia, Spain), Jaime Lloret (Universidad Politécnica de Valencia, Spain), Joel J. P. C. Rodrigue (University of Beira Interior, Portugal)

15:30 - 16:00: Coffee Break

16:00-18:00: Mobility Aware Techniques in Wireless Sensor Networks II
- Soft Handover Method for Mobile Wireless Sensor Networks Based on 6LoWPAN
  Juha Petäjäjärvi, Heikki Karvonen (University of Oulu, Finland)
- Study of the effects of pairwise key pre-distribution scheme on the performance of a Topology Control Protocol
  Mohamed Mostafa M. Fouad and Ahmed Reda Dawood (Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt), Mostafa-Sami M. Mostafa (Helwan University, Cairo, Egypt)
- Resilient Key Establishment for Mobile Sensor Networks
  Kevser Karaca, Albert Levi (Sabanci University, Istanbul, Turkey)
- Real Time Pothole Detection using Android Smartphones with Accelerometers
  Artis Mednis, Girts Strazdins and Reinholds Zviedris (University of Latvia, Riga, Latvia), Georgijs Kanonirs (Institute of Electronics and Computer Science, Riga, Latvia), Leo Selavo (University of Latvia, Riga, Latvia)

Workshops Program IWSN'11

Wednesday full day, 29 June 2011

2nd International Workshop on Interconnections of Wireless Sensor Networks (IWSN-2011)

Program Co-Chairs:
Djamel Djenouri, CERIST, Algiers, Algeria.
Jianguo Ding, NTNU, Trondheim, Norway.
Abdelouahid Derhab, CERIST, Algeria.

8:50 - 9:00 Opening Remarks

9:00 - 10:30 Session 1: Architectures for Interconnected wireless sensor networks
- Deployment-aware Energy Model for Operator Placement in Sensor Networks
  Felix Jesus Villanueva Molina, Michael Daum, Moritz Strübe, Juan Carlos Lopez, Rudiger Kapitza, Falko Dressler
- A Framework for Flexible Sensor Information Dissemination
  Daniel Corujo, Marcelo Lebre, Diogo Gomes, Rui Luis Aguiar
- Localized Energy Efficient Routing for Wireless Sensor Networks
  Taner Cevik, A. Halim Zaim

10:30 - 11:00 Coffee-break

11:00 - 13:00 Session 2: Communication and Security in wireless sensor networks
- Diffusion LMS Algorithms for Sensor Networks over Non-ideal Inter-sensor Wireless Channels
  Reza Abdolee, Benoit Champagne
- Fuzzy One-phase Pull Diffusion for WSNs in Fading Channel
  Celimuge Wu, Satoshi Ohzahata, Toshihiko Kato
- Secure Pairwise Broadcast Time Synchronization in Wireless Sensor Networks
  Chafika Benzaid, Amin Saiah, Nadjib Badache
- MAConf: Passive Layer-2 Detection Mechanism for Mobile Wireless Sensor Networks
  Faisal Hamady, Nadia Bisher, Ayman Kayssi, Cesar Ghali

13.00 - 14.00 Lunch

14:00 - 15:15 Invited talk
Models and Methods for Maintaining Connectivity in Sensor Networks.
Prof. Sotiris Nikoletseas, University of Patras and CTI, Greece

15:15 - 15:30 Closing remarks

Workshops Program PWSN'11

Wednesday full day, 29 June 2011

PWSN 2011 (3rd International Workshop on Performance Control in Wireless Sensor Networks)

Program Co-Chairs:
Vasos Vassiliou, University of Cyprus, Cyprus
Rolland Vida, Budapest University of Technology and Economics, Hungary
Jorge Sa Silva, University of Coimbra, Portugal

08:30-09:00 Registration

09:00 - 09:15 Opening and Welcome

09:15 - 10:15 Keynote Talk
GUTP and IEEE1888 for Smart Facility Systems using Internet Architecture Framework
Prof. Hiroshi Esaki, The University of Tokyo, Japan. (with the HOBSENSE workshop)

10:15 - 10:30 Keynote Talk
The Varuna 4 future Home/Building management system
Thomas Spitz, Hestia France. (with the HOBSENSE workshop)

10:30 - 11:00 Coffee-break

11:00 - 12:30 Technical Session I (Algorithmic issues: Congestion, Mobility, Security and Concurency)
- A Comparative Study of Congestion Control Algorithms in IPv6 Wireless Sensor Networks
  Vasilis Michopoulos, Lin Guan, George Oikonomou and Iain Phillips.
- Performance Evaluation of the DAlPaS Congestion Control Algorithm in Wireless Sensor Networks
  Charalambos Sergiou and Vasos Vassiliou
- S-GinMob: A Soft Handoff Solution for Mobile Users in Industrial Environments
  Zinon Zinonos and Vasos Vassiliou
- On experimentally evaluating the impact of security on IEEE 802.15.4 networks
  Roberta Daidone, Gianluca Dini and Marco Tiloca
- Analysis and Comparison of Concurrency Control Protocols for Wireless Sensor Networks
  Christoph Reinke, Nils Hoeller, Stefan Werner, Sven Groppe and Volker Linnemann

12:30 - 14:00 Lunch

14:00 -15:30 Technical Session II (Practical Issues: Architecture, Localization, Interference, Configuration)

- WSN Evaluation in Industrial Environments - First results and lessons learned
  Wolf-Bastian Pottner, Lars Wolf, Josi Cecvlio, Pedro Furtado, Ricardo Silva, Jorge Sa Silva, Amancio Santos, Paulo Gil, Alberto Cardoso, Jose Manuel Do , James Brown, Utz Roedig, Tony O'Donovan, Cormac J. Sreenan, Zhitao He, Thiemo Voigt, Ben Mccarthy, Zinon Zinonos and Anja Klein
- ARIEL: Advanced Radiofrequency Indoor Environment Localization: Smoke Conditions Positioning
  Jose Vicente Marti Aviles and Raul Marin Prades.
- Precise Packet Loss Pattern Generation by Intentional Interference
  Zhitao He and Thiemo Voigt.
- Experiences from Porting the Contiki Operating System to a Popular Hardware Platform
  George Oikonomou and Iain Phillips.
- Configuration and Data Processing over a Heterogeneous Wireless Sensor Networks
  Jose Cecvlio and Pedro Furtado

15:30 - 16:00 Coffee-break

16:00 - 17:30 Invited Presentations and Workshop Closing

Workshops Program HOBSENSE'11

Wednesday morning, 29 June 2011

1st IEEE Workshop on Holistic Building Intelligence through Sensing Systems (HOBSENSE)

General Chair:
Sotiris Nikoletseas, U. of Patras and CTI, Greece

Program Co-Chairs:
Antonio Ruzzelli, University College Dublin, Ireland
Zach Shelby, Sensinode, Finland

09.00 - 09.15: Opening (S. Nikoletseas, A. Ruzzelli and Z. Shelby)

09.15-10-30 Session I: Keynote Talks
09.15 - 10.15: Keynote Talk: "GUTP and IEEE1888 for Smart Facility Systems using Internet Architecture Framework" by Prof. Hiroshi Esaki, The University of Tokyo, Japan.
10.15-10.30: Keynote Talk: "Automation for home and small to medium buildings", by Thomas Spitz, Hestia France.

10.30 - 11.00: Coffee Break

11.00 – 12.40 Session II: Contributed Papers

11.00-11.20: "Wireless Sensor Network Data Description and Encoding in Heterogeneous Building Systems", Chris Conway; Matthew Barnes
11.20-11.40: "Generating Power Footprints without Appliance Interaction: an Enabler for Privacy Intrusion", Alex Sintoni; Anthony Schoofs; Aiden R Doherty; Alan Smeaton; Gregory O'Hare; Antonio G. Ruzzelli
11.40-12.00: "Passive target tracking: Application with mobile devices using an indoors WSN Future Internet testbed", Marios Karagiannis; Konstantinos Chantzis; Sotiris E. Nikoletseas; Jose Rolim
12.00-12.20: "Home Automation Design Using 6LoWPAN Wireless Sensor Networks", Dan Stefan Tudose; Nicolae Tapus; Andrei Voinescu; Madi-Tatiana Petrareanu; Andrei Bucur; Dumitrel Loghin; Adrian Bostan
12.20-12.40: "Remote Electricity Actuation and Monitoring Mote", Sean O'Connell; John Barton; Eoin O'Connell; Brendan O'Flynn; Emanuel M. Popovici; Cian O'Mathuna; Antonio G. Ruzzelli; Anthony Schoofs; Gregory O'Hare,
12.40-13.00: "Experimental Evaluation of Energy Balance Algorithms in the SenseWALL Sensor Network Test-bed", Constantinos Marios Angelopoulos; Dionysios Efstathiou; Sotiris E. Nikoletseas

12:40 - 14:00 Lunch

Social Event

It will take place **Monday evening 27 June**, starting **8pm**, at **Restaurant Mirabé.**

The restaurant is situated on a splendid viewing balcony over Barcelona. Mirabé is made up of two floors where we will have one part to ourselves. It is situated at the very top end of the Avenida Tibidabo (Manuel Arnús 2, 08035 Barcelona, 93 434 00 35) and can be reached by taking the trainline **L7 from Barcelona Plaça Catalunya until Av. Tibidabo**, from there with the **Tramvia Blau until its final station**, and finally walking; alternatively, taxis can also reach this place and are not too expensive in Barcelona.

MIRABÉ

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