



3rd Workshop on Ultra-Low Power Sensor Networks (WUPS 2013)

Call for Papers

The work shop will be held in conjunction with ARCS (Architecture of Computing Systems) [2] on Wednesday, 20 February, 2013 at Hotel DAP, Vítězné nám. 684/4, 160 00 Prague, Czech Republic.

Ultra-low power sensor networks have gained importance these last few years due to a vast set of applications e.g. in automotive systems, in smart buildings and health-care monitoring.

Sensor networks often need to operate autonomously without wired connection for a long period of time. To allow long maintenance cycles, two main strategies are common: Firstly, they should be able to operate on a long-lived battery or other means of energy sources, e.g. energy harvesting strategies. Secondly, ultra-low power approaches are used to consume as few energy as possible.

The workshop is intended to give a good overview on current works in this area and problems and solutions in specific industry use cases.

Topics of interest include, but are not limited to:

- Design Methodologies for Ultra-Low Power Embedded Systems
- Power consumption estimation techniques
- Energy Harvesting : technologies and models
- Simulation frameworks for wireless sensor networks
- Power manager design
- Wake-up radio technologies
- Low Power radio front ends
- Energy-efficient protocols
- Cross layer techniques
- Applications of ultra-low power sensor networks
- Building automation
- Smart homes and smart cities

Industry submissions showing current state of the art are mostly welcome.

Papers length should be between 4 and 6 pages. Layout instructions for authors can be found at [3]. Papers must be submitted using the upload system at <http://wups2013.irisa.fr/easychair/>

For ARCS 2013 participants the workshop is included in the conference fee; for participation in the workshop alone, there will be a reduced fee.

Important dates:

Paper submission deadline: 10.12.2012

Acceptance notification: 11.01.2013

Camera ready deadline: 23.01.2013

Program Chair:

- *Olivier Berder, Université de Rennes 1, IRISA, France*

Program Committee:

- *Karim Benchehida, CEA-LIST*
- *Carolynn Bernier, CEA-LETI, Grenoble, France*
- *Florian Broeckaert, Thales France, France*
- *Jean-Dominique Decottignie, CSEM, Switzerland*
- *Jan Haase, Vienna University of Technology, Austria*
- *Alain Pégatoquet, LEAT, Université de Nice, France*
- *Emanuel Popovici, University College of Cork, Ireland*
- *Olivier Sentieys, INRIA CAIRN, Lannion, France*
- *Marian Verhelst, KU Leuven, Belgium*

[1] WUPS 2013 Homepage: <http://wups2013.irisa.fr/>

[2] ARCS 2013 Homepage: <http://arcs2013.fit.cvut.cz/>

[3] VDE: Author's guide: <http://www.vde-verlag.de/proceedings-en/type-instructions.html>

| Program | | | |
|--|------------|---|--|
| <i>Begin</i> | <i>End</i> | <i>Title</i> | <i>Speaker</i> |
| 09:00 | 09:10 | Welcome and introduction | Olivier Berder / University of Rennes 1 – IRISA (France) |
| 09:10 | 09:55 | <i>Keynote:</i> WSN nodes energy consumption simulation | Jan Haase / Vienna University of Technology (Austria) |
| 10:00 | 10:30 | Coffee Break | |
| Session 1 : Energy Harvesting for WSN | | | |
| 10:30 | 11:00 | Combination of hybrid energy harvesters with MEMS piezoelectric and nanowatt radio wake up to extend lifetime of system for wireless sensor nodes | Michele Magno, Nathan Jackson, Alan Mathewson, Luca Benini and Emanuel Popovici / Università di Bologna (Italy), Tyndall National Institute (Ireland) , University College of Cork (Ireland) |
| 11:00 | 11:30 | Prototyping an Energy Harvesting Wireless Sensor Network Application Using HarvWSNet | Carolynn Bernier, Amine Didioui, Florian Broekaert and Olivier Sentieys / CEA-LETI, Thales Communications & Security, INRIA (France) |
| 11:30 | 12:00 | Adaptive Filter for Energy Predictor in Energy Harvesting Wireless Sensor Networks | Trong Nhan Le, Olivier Sentieys, Olivier Berder, Alain Pegatoquet and Cecile Belleudy / University of Rennes 1 - IRISA, University of Nice-Sophia Antipolis - LEAT (France) |
| 12:00 | 13:30 | Lunch Break | |
| Session 2 : Simulation and Management of WSN | | | |
| 13:30 | 14 :00 | Efficient Building Automation Simulation Using System on Chip Simulation Techniques | Joseph Wenninger, Jan Haase / Vienna University of Technology (Austria) |
| 14:00 | 14:30 | Simplified Commissioning and Maintenance for Wireless Sensor Networks: a Novel Software Tool | Levente Barta, David Boyle, Brendan O'flynn and Emanuel Popovici / Tyndall National Institute (Ireland) , University College of Cork (Ireland) |
| 14 :30 | 15:00 | Coffee Break | |
| 15:00 | 15:30 | Mobility Management Approach for IEEE802.15.4/ZigBee Nodes in a Noisy Environment | Chiraz Chaabane, Alain Pegatoquet, Michel Auguin and Maher Ben Jemaa / University of Nice-Sophia Antipolis - LEAT (France), ReDCAD - University of Sfax (Tunisia) |
| 15:30 | 16:00 | On the Energy Savings of Adaptive Transmit Power for Wireless Sensor Networks Radio Transceivers | Muhammad Mahtab Alam, Olivier Berder, Daniel Menard and Olivier Sentieys / University of Rennes 1 – IRISA (France) |
| 16:00 | 16 :15 | WUPS closing | |