

# dMEMS 2012

2<sup>nd</sup> Workshop on design, control and software implementation for distributed MEMS

Besancon, France

April 2<sup>nd</sup>-3<sup>rd</sup> 2012

<http://dmems.univ-fcomte.fr>

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## Call for papers

In the last few years, MEMS technologies have pushed back the limits in terms of miniaturization so that it is now possible to design complex and multifunctional MEMS in restricted spaces. Distributed MEMS specifically considered in this Workshop integrate a high number of elementary components (actuators, sensors). Such MEMS involve various applications such as micromanipulation, the active control of structures or locomotion and they raise specific issues either in the design or in the coordination of all the components: automatic control, software, communication networks, computing power. New solutions for MEMS design, modelisation, distributed control, networking and information management in MEMS have to be considered.

The objective of dMEMS is to bring together researchers and engineers from the fields of microsystems, computer science, networking and control in order to present, to discuss and to facilitate the sharing of knowledge at the highest scientific and technical levels. Inter-disciplinary experiences that connect these different fields will be greatly appreciated. Topics of particular interest include, but are not limited to:

### Design, implementation and technologies

Microactuator technology and array, Sensor technology and array, Packaging and interconnect technologies, System architecture, Connections arrays, Electronics design

### Control and distributed algorithms

Distributed control, Adaptive and AI Based Control, Neural networks based control systems, Nonlinear Control, Machine learning in control applications, Robust control, Optimal control, Real-time control

### Network of distributed sensors and actuators

Embedded hardware, hardware/software co-design, Power-aware and energy-efficient network design, scalable architecture design, Real-time networking, quality of service, Qos provisioning, NoC and Soc design, routing and switching in embedded networks, Wireless sensor networks, cross-layer design, distributed coordination, Multimedia and data Management, data aggregation, data fusion, distributed source coding, Multi-agents, distributed and peer-to-peer computing, swarm intelligence, fault tolerance, security, privacy, trust, Distributed applications

### Modelisation, simulation, verification, test and validation

Tools supporting distributed sensors and actuators design, Component-based development, SysML and MDE for embedded system specification, Formal specification and verification of distributed MEMS

### Industrial applications and case studies

## Venue

Besançon is the capital and main city of the Franche-Comté region in Eastern France. Located close to the border with Switzerland, it is the capital of the Doubs department. The city has one of the most beautiful historical centres in any major town in France. The old town, "la Boucle", is enclosed in a broad horse-shoe loop of the river Doubs, which is blocked off at the neck by Vauban's imposing Citadelle. The historical centre features a remarkable ensemble of classic stone buildings, some dating back to the Middle Ages. The citadel, the city walls and Fort Griffon were added to the list of UNESCO World Heritage Sites in 2008, as part of the "Fortifications of Vauban" group.  
(more on <http://en.wikipedia.org/wiki/Besancon>)



## Paper submission

Prospective authors should submit a full paper not exceeding 8 pages in length in the IEEE CPS style (Formatting Instructions, [DOC](#), [PDF](#) and [LaTeX Formatting Macros](#)). Proceedings will be published by IEEE CPS.

## Important dates

Deadline for paper submission: December 30th, 2011  
Acceptance notification: January 25th, 2012  
Camera ready paper due: February 9th, 2012  
Workshop: April 2nd-3rd, 2012

