Call for Papers

2014 Workshop on Modeling and Simulation of Cyber-Physical Energy Systems

April 14 2014, Berlin, Germany

Technically co-sponsored by the IEEE Industrial Electronics Society

Modern energy systems combine information technology, electrical and thermal infrastructure, autonomous roles and interact with other systems like markets and regulations. Existing modeling and simulation tools are not capable to cover such systems in all of their aspects, new languages, methods and tools are necessary. A combination of universal modeling languages like Modelica and established, specialized tools like grid simulators and telecommunication simulators is necessary. This leads to modeling and co-simulating hybrid systems where for instance a multi-agent framework and an electric grid simulator are combined to investigate smart electric vehicle charging algorithms. It is especially the potential size of such systems that constitute a challenge for modeling and simulation. Implementing these future CPS are another substantial challenge. The designed algorithms need to be compact, computationally inexpensive, potentially self-organizing and intrinsically stable if applied to real energy systems.

This workshop brings together researchers and industrialists to exchange newest research results, and is embedded into the "Cyber-Physical Systems Week" www.cps-week.org

Topics:

- Hybrid modeling and simulation
- Co-Simulation
- High-performance computing
- Analytics of system data
- Ontologies for energy systems
- Applications of cyber-physical energy systems
- Distributed algorithms and control
- Standards in interfacing components
- Numerics for hybrid and co-simulation
- Formal languages for energy systems
- Smart Grid modeling
- Demand response and power quality
- Information and communication technology for intelligent energy systems
- Semi-analytical methods (stochastic differential equations, fluid stochastic Petri nets, etc.)

General Chairs:

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Important Information:

- Full paper submissions are peer-reviewed by at least 3 reviewers.
- Submission deadline: 31.01.2014
- Notification of acceptance: 28.02.2014
- www.palensky.org/mscpes