

"Software Engineering in Factory and Energy Automation"

The Theme: Software Engineering becomes crucially important for effective and efficient development of automation and control systems. Software engineering methods currently applied in this field lag behind the mainstream software engineering methods, where tremendous progress has been made in the last years, for example in component orientation, test-driven development, model-driven approaches, refactoring code analysis, measurements of test coverage, continuous integration, or product line engineering. This special section is devoted to advanced software engineering solutions have a great impact on the efficiency of **for factory and energy** automation systems design. In particular, the special section will be focusing on (but not limited to) the following topics:

- Software engineering methods for automation, control and SCADA systems
- Component-based design of automation and control systems
- Automation objects / components
- New programming languages and tools
- Visual programming
- Artificial intelligence methods and languages in automation
- Agent-based approaches in industrial automation
- Model-based system and software engineering
- Model-driven design of automation and control systems
- Equivalent code transformations, refactoring
- Extreme programming
- Test-driven software quality assurance of automation and control systems
- Aspect-oriented programming
- Quality assurance methods: testing, simulation, formal verification
- Automatic code synthesis
- Execution semantics of automation software
- Latest developments of standards (e.g., IEC 61131-3, IEC 61499, IEC 61850, etc.)
- Application development practices and experiences
- Metrics of success in software development in automation

The Software Engineering contribution and/or relevance have to be emphasized in all contributions.

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transaction on Industrial Informatics <http://tii.ieee-ies.org/>
Please submit your manuscript in electronic form through Manuscript Central web site: <http://mc.manuscriptcentral.com/tii>.
On the submitting page #1 in popup menu of manuscript type, select: **SS on Software Engineering**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Extended versions of papers previously published in conference proceedings may be eligible for consideration if conditions listed in <http://tii.ieee-ies.org/o/PC.pdf> are fulfilled. Before submitting manuscript check the review criteria (<http://tii.ieee-ies.org/o/RC.pdf>) and other information (<http://tii.ieee-ies.org/o/DI.pdf>)

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable: **Deadline for manuscript submissions** **December 15, 2011**

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