



IEEE 9th International Conference on Industrial Informatics – INDIN'2011 –



*July 26-29, 2011
Caparica, Lisbon, Portugal*

Special Session on:

Modern Software Engineering Methods and Approaches in Industrial Informatics

Special Session Organizers (names and contact emails):

- Valeriy Vyatkin, University of Auckland, New Zealand, v.vyatkin@auckland.ac.nz
- Alois Zoitl, Technical University of Vienna, Austria, zoitl@acin.tuwien.ac.at
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Technical Outline of the Session (50 words) and Topics:

In industrial automation, software gets more and more important in order to provide an effective and efficient operation of automation and control systems. However software engineering methods applied in this field lag behind the mainstream software engineering methods, where tremendous progress has been made in the last years.

The aim of this session is to present new approaches and methods for the design of automation and embedded control systems software for factory and energy automation which follows the latest trends from the software engineering domain. Such techniques are among others: component orientation, test-driven development, model-driven approaches, refactoring code analysis, measurements of test coverage, continuous integration, or product line engineering.

Advanced software engineering solutions have a great impact on the efficiency of automation systems design. In particular, the session 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

IES Technical Committee Sponsoring the Special Session (if any):

IEEE IES Technical Committee on Industrial Agents

Submission procedure: The same as for regular papers.

All the instructions for paper submission are included in the conference website

<http://www.uninova.pt/indin2011>