

IFAC Journal “Control Engineering Practice”
Special Section on
“Advanced Software Engineering in Industrial Automation”

The aim of this special issue is to present new approaches and methods for the design of automation systems software which follow the latest trends from the software engineering domain.

Software becomes the most complex, expensive, error-prone and inflexible part of industrial systems and trends are observed at all layers of enterprise IT, from the factory floor, up to the business logic and management support. Advanced software engineering solutions have a great impact on the efficiency of automation systems design.

In particular, papers focusing on the following topics (but not limited to) are solicited:

- New programming languages and tools
- Visual programming
- Artificial intelligence methods in languages
- Model-based engineering
- Equivalent code transformations, Refactoring
- Extreme programming
- Quality assurance methods: testing, simulation, formal verification
- Automatic code synthesis
- Execution semantics of automation software
- Latest developments of standards (IEC 61131-3, IEC 61499)

Authors of selected papers presented at the relevant special sessions at INCOM'09 and INDIN'10 will be sent an invitation to submit extended versions of their works to the special issue. All submissions will be subject to thorough peer review and are expected to be aligned with the following publication philosophy of CEP:

"In CEP we publish papers which make significant contributions to the application of control techniques and are expected to contain practically relevant results based on profound theory. The relevance of the work has to be stressed in a practical industrial/applications context, with solid industrial examples rather than hypothetical ones. If only simulations are used, these must be verified on models of real plants. The benefits must be made very clear and the new techniques must be compared and contrasted with results obtained using existing methods."

Proposer / Guest editor:

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Proposed timeline:

Call for papers published:	15 March, 2011
Submissions received:	1 May, 2011
First round of reviews completed:	1 August, 2011
Second round of reviews completed:	1 December, 2011
Decision on acceptance:	15 December, 2011