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**Aim:** The aim of the conference is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of technology, as well as actual and potential applications to industrial and factory automation.

**Solicited Papers:** Research papers reporting on new developments in technological sciences. Industry and development papers reporting on actual developments of technology, products, systems and solutions. Tutorial and survey papers. Work-in-progress papers. In addition, ETFA 2010 solicits special session proposals to stimulate in-depth discussions in special areas relevant to the conference theme. Please consult the conference web page for more details.

### Topics within the scope of the conference include:

#### Information Technology in Automation

IT Modeling techniques (UML, Object-Orientation, Agents, Service Oriented Architectures,...) for automation systems ; Data Modeling (CAEX, AutomationML, OPC UA,...); Virtualization at the factory level, digital factory; Programming languages (IEC 61131, IEC 61499,...); Integration with MES and ERP systems (Databases, Semantic Web Services) ; Vertical Integration: Web-based Setup, Maintenance and Configuration; Tool chains, platforms, and frameworks for Software Design and Development; Security in factory, home and building Automation; Network Integration in Automation Systems (heterogeneous networks, wired/wireless,...).

#### Industrial Communication Systems

Implementation issues; Message scheduling; Performance analysis; Dependability and fault tolerance aspects; System design and architecture; Self-configurable systems; Integration support; Fieldbus networks; Real-Time Ethernet Networks; Intranet and Internet; Wireless networks; Hybrid (wired/wireless) networks; Safety buses; Sensor networks; Automotive networks; Building automation networks; Process control networks; Networked control systems.

#### Real-Time and (Networked) Embedded Systems

Real-Time Computing; Real-Time Operating Systems; Real-Time Communications; Networked Embedded Systems Technology; Wireless Sensor Networks; Cyber Physical Systems; Design and Implementation; Design Methodologies and Tools; Components and Platforms; Models of Computation and Formal Methods; Hardware/Software Co-Design; Energy Management; Data Integration and Fusion; Communication Modes; Quality of Service Control; Case Studies.

#### Automated Manufacturing Systems

Formal Modeling and Analysis of Manufacturing Systems; Scheduling, Simulation, Queuing Systems and Petri Nets in Manufacturing Systems; Synthesis and Analysis Techniques, Performance Evaluation and Reliability; Discrete and Continuous Industrial Automation Systems; Automated Manufacturing Systems and Enterprise Integration; Application of Service-Oriented Technologies; Test Cases, Benchmarks and Tools; Applications and Experiences in Practice; Recent Developments in Standardization.

#### Industrial Control

Process Control; Equipment Control; Intelligent Control; Supervisory Control; Industrial Control Implementation; Discrete and Continuous Automation System; Equipment and Process Monitoring; Fault Detection and Management; Process Modelling and Optimization; Performance Assessment of Control Systems; Control Applications; Large-Scale Systems.

#### Computational Intelligence and Modern Heuristics in Automation

Intelligent Systems and Control, Modern Heuristics, and Data Mining in automation and industrial applications; Neural/Fuzzy/Evolutionary approaches in automation; Modern heuristics methods in factory automation based on predictive, adaptive control, recognition, navigation, motion control, competitive, self-organizing learning, and clustering; Computational Intelligence in security, reliability, and fault-tolerance in automation; Ant colonies optimization and swarm intelligence in automation; Machine learning, Support Vector Machines, Expert Systems.

#### Intelligent Robots & Systems

Cognitive robotics; Cooperative and collaborative robotics; Distributed robotic architectures; Human-robot interaction; Integrated intelligence; Intelligent robot assistants; Intelligent embedded systems; Natural language grounding; Network robotics; Perception, control and manipulation for intelligent robots and systems; Planning and failure recovery; Reasoning under uncertainty; Robot learning; Robot vision; Usability studies.

**Conference Format:** The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations; work-in-progress (WIP) sessions; panel discussions on the state-of-the-art and emerging trends, involving leading experts from industry and academia; and public discussion sessions moderated by leading experts in the field of industrial automation systems.

**Submission of Papers:** The working language of the conference is English. Two types of submissions are solicited. Long Papers – limited to 8 double column pages in a font no smaller than 10-points. Work-in-Progress and Industry practice – limited to 4 double column pages in a font no smaller than 10-points. Manuscripts must be submitted electronically in PDF format, according to the instructions contained in the Conference web site

**Best Paper Award:** Best paper awards in Factory Automation and Emerging Technologies will be presented at the conference banquet dinner. Authors of outstanding papers will be invited to submit a revised version of their papers for publication in a special section in IEEE Transactions on Industrial Informatics.

**Further Information:** ETFA'10 Conference Secretariat: Tel: +34 94 601 4048; Fax: +34 94 601 4187; Email: [contact@etfa2010.org](mailto:contact@etfa2010.org)

**Paper Acceptance:** Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses.

### Author's Schedule:

<i>Deadline for Special Sessions proposals submission:</i>	February 28, 2010
<i>Deadline for submission of long and special sessions papers:</i>	April 15, 2010
<i>Notification of acceptance of long and special sessions papers:</i>	May 24, 2010
<i>Deadline for submission of work-in-progress papers and Industry practice:</i>	June 7, 2010
<i>Notification of acceptance of work-in-progress papers and Industry practice:</i>	July 7, 2010
<i>Deadline for submission of final manuscripts – regular and special sessions:</i>	July 1, 2010
<i>Deadline for submission of final manuscripts – work-in-progress papers and Industry practice:</i>	July 14, 2010

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Conference website  
<http://www.etfa2010.org>