ARTIST 2
Network of Excellence

IST-004527 ARTIST2:
Embedded Systems Design

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Newsletter #1

February 14th, 2006

http://www.artist-embedded.org/FP6/ARTIST2Events/Publications/Newsletter/

Editor:

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ARTIST2 is proud to announce it will now be publishing a newsletter, to inform the larger embedded systems research and industrial community about important events of interest (workshops, summer schools, high level events, selected publications for a wide audience, etc).

This newsletter will be refined over time. If you would like to be added or removed from the electronic distribution list, please contact Bruno.Bouyssounouse@imag.fr

Administrative information (privacy policy, submitting announcements, etc) is provided at the end.

Events Organized

The Artist2 Network of Excellence on Embedded Systems Design will be organizing a number of very interesting top-level workshops and schools in the coming months. These are open to the wider research and industrial community.

Space is limited at these events - be sure to register quickly !

WORLD CLASS WORKSHOPS

DATE'06: **Design Issues in Distributed, Communication-Centric Systems**
Munich, March 10th 2006
http://www.artist-embedded.org/FP6/ARTIST2Events/Events/Date06/

The workshop will present relevant, innovative, and holistic topics in communication-centric systems, sensor networks, dynamic real-time architecture, distributed computing, minimal operating systems, and self-organisation. More generally, these workshops aim to extend existing links between related multi-disciplinary communities, through world-class presentations and discussion on cutting-edge topics.

The workshop is intended for but not limited to prominent members of the ARTIST2 NoE and DATE research communities, wishing to explore relevant and innovative work directions common to both, and to extend contacts and establish long-term links.

BEYOND AUTOSAR
Innsbruck, March 23-24th 2006
http://www.artist-embedded.org/FP6/ARTIST2Events/Events/Innsbruck06/

System modelling and design activities are currently providing key technologies for advancement to the European automotive industry. Today, software functions are generally implemented on separate ECUs, with little reuseability or hardware independence. Existing reusable subsystems are integrated late in the design process. The industry is now moving towards new approaches that would allow the integration of middleware and software services acting across several ECUs, allowing deployment of applications independently from the actual computing architecture.

The AUTOSAR consortium has made progress towards improving component and sub-system integration. Remaining open issues include capturing and modelling end-to-end characteristics, both functional and extra-functional (e.g., related to timing) and defining a rich component model supporting such end-to-end analyses.

This workshop will gather key industry players from AUTOSAR and key scientists to discuss fundamental issues for embedded automotive systems design. It will consist of industrial presentations and in-depth technical panel discussions.

EmSoft'06: **Foundations and Applications of Component-based Design**
Seoul, October 22-25 2006
http://www.artist-embedded.org/FP6/ARTIST2Events/Events/Components_EmSoft/

The objective is to discuss recent results on component-based design with emphasis on design frameworks for real-time systems encompassing heterogeneous composition and models of computation, especially frameworks for handling non-functional and resource constraints, design under conflicting dependability criteria, trade-offs between average performance and predictability.

The workshop aims to gather together researchers from computer science and electrical engineering and will seek a synthesis between the the underlying paradigms and techniques. The focus is not only on fundamental results but also on their implementation in methods and tools and their concrete application in areas such as automotive, avionics, consumer electronics and automation.

SCHOOLS AND COURSES

Graduate Course on Embedded Control Systems
Prague, April 3rd-7th 2006
http://www.artist-embedded.org/FP6/ARTIST2Events/Events/EmbeddedControl/

Currently, most automated control applications are implemented as embedded components. This strong interaction between Control and Embedded systems forces the need of a new generation of researchers that can combine both fields.

The course will provide a basic understanding of :

- Basic concepts on Embedded Control systems from the Control point of view
- Real-Time concepts
- Interaction between the control design and control implementation
- Real-Time implementation of control algorithms in a multitasking environment
- Analysis of the effects of the execution platform on control performance
- Control-based approaches for modeling, analysis, and design of embedded control and communications systems
- Overview of different off-line scheduling problems found in embedded systems
- Embedded systems development

Spring School in China
on Models, Methods and Tools for Embedded Systems
Xi'an, China, April 3rd-15th, 2006
http://www.artist-embedded.org/FP6/ARTIST2Events/Events/ChinaSchool/

We aim to provide a forum for young professors, lecturers, researchers, postgraduates (advanced master and PhD students) working in the fields of modelling, design, implementation, validation and performance analysis of embedded systems as well as engineers from industry with practical background with the development of embedded systems. The school is mainly intended for top students, researchers, and engineers in China.

Summer Course & Lab
on Real-Time and Control for Embedded Systems
Pisa, July 10-14th 2006
http://www.artist-embedded.org/FP6/ARTIST2Events/Events/RT-Control/

Real-Time distributed embedded systems play a crucial role in our society including several application domains such as automotive, telecommunications, robotics, and multimedia systems. These systems generally work under precise timing constraints, to achieve the required level of performance and predictability. Consequently, embedded systems design requires expertise in several disciplines, including control theory, networking, real-time computing, and operating systems. Unfortunately, such expertise is rarely found in European curricula.

Thus, the proposed course has two main goals:

- Provide the most important concepts and methodologies used in developing real-time embedded systems, including fundamentals of real-time scheduling, operating systems, distributed systems, and control theory. In particular, the course will teach how these disciplines can be integrated to achieve predictable system behavior.
- The second and more challenging goal of this course is to show how to apply theory into practice, teaching students how to develop simple real-time distributed control applications using a real-time operating system (Shark) specifically developed for education..

About the Newsletter

Please note that this procedure will probably evolve over time. Be sure to check the latest issue for up-to-date instructions.

Purpose

The ARTIST2 Newsletter is widely distributed within the European Embedded Systems research and industrial community, with information about important events of interest (workshops, summer schools, high level events, selected publications for a wide audience, etc).

Submitting Announcements

Anyone may submit announcements or articles for publication. Any information submitted for publication in the newsletter becomes public information, with no rights or restrictions imposed by the original author.

Information submitted will be edited and modified as best suits the needs of the community, at the editor's discretion.

Subscription

Subscription is free of charge: simply send a message to the editor: Bruno.Bouyssounouse@imag.fr.

Privacy Policy

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To add or remove persons from the mailing list, simply send a message originating from the mailbox to be added or removed to the editor Bruno.Bouyssounouse@imag.fr.