Call for Papers
Application Design Track at DATE 2010

Dresden, Germany - March 8-12, 2010

The **Design, Automation and Test in Europe conference and exhibition** is the main European event bringing together designers and design automation users, researchers and vendors, as well as specialists in the hardware and software design, test and manufacturing of electronic circuits and systems.

The **Application Design Track** is devoted to the presentation and discussion of design experiences with a high degree of industrial relevance, as well as innovative design methodologies and use of specific design technologies in different application domains. This five-day event consists of a **conference** with plenary keynotes, regular papers, interactive presentations, panels and hot-topic sessions, tutorials, master courses and workshops. DATE is also Europe's leading commercial **exhibition** showing the state-of-the-art in design and test tools, methodologies, IP and design services. Both the conference and the exhibition, together with the many user group meetings, fringe meetings, university booth and social events offer a wide variety of opportunities to meet and exchange information.

TOPICS

A1 Signal processing for multimedia
Chairs: Christos-Savvas Bouganis (University College, UK), Sergio Saponara (Pisa University, IT)

The track is devoted to Intellectual Property (IP), System on Chip and embedded system design experiences and methodologies for multimedia applications (audio and image processing, 2D and 3D Video processing, and other sensorial domains). Examples of systems and IPs are JPEG and MPEG/H26x compression, digital transforms (FFT, DCT, etc.), digital filtering, and signal processing for channel coding and security, which target Application Specific Processors (ASP), Digital Signal Processors (DSP), or reconfigurable computing platforms for these domains. Hardware, software and hardware/software co-design aspects are of interest for the topic.

A2 Wireless Communication and Networking
Chairs: Cyprian Grassmann (Infineon Technologies, DE), Guido Masera (Politecnico Torino, IT)

Practical design experiences for digital and mixed-signal integrated circuits, RF architectures, Software Defined Radio components, Analog/mixed-signal, Intellectual Properties for wireless communication, baseband processing, forward error correction and networking.

A3 Automotive
Chairs: Marco Di Natale (Scuola Sup. S. Anna, IT), Christian Sebeke (Robert Bosch, DE)

Practical design experiences for automotive applications: analogue and mixed-signal integrated circuits, micro-electromechanical systems, integrated sensors and transducers, RF architectures, real-time reliable embedded systems, interconnected systems, design for reliability and design of safety-critical systems. Application of design methods for automotive systems, focussing on efficiency and quality is another area of interest, especially according to and application of actual standards.

A4 Secure embedded implementations
Chairs: Ingrid Verbauwhede (Katholieke Universiteit Leuven, BE), Jerome Quevremont (Thales, FR)

Technologies and experiences in designing secure system-on-chips and embedded systems. Topics of interest include BUT are not limited to: novel techniques for embedded cryptography, side-channel attacks and fault attacks modeling, characterization, simulation and associated countermeasures, random numbers generation, embedded secure processors, trusted computing, off-chip memories and network on chip enciphering and integrity checking, trust establishment and attestation, protection against chip counterfeiting.

A5 Space and Aeronautics Avionics Application Design
Chairs: Sylvain Prudhomme (Airbus, FR), Agustín Fernández León (European Space Agency, NL)

Practical design experiences and innovative avionics solutions for application in military or civil space and aeronautics. Topics of interest include electronic circuits, equipment and systems for advanced space and aeronautics applications like communication, navigation and surveillance (eg Software Radio, Galileo based navigation systems, Earth and scientific planetary observation), and more generally real time on-board information management applications for air and space transportation or homeland security. It covers technologies like reconfigurable hardware, DSP, multi-core, baseband and mmW/RF electronics, microelectronic components and MEMs, antenna technologies, wireless and optical communication, mixed data/energy transport, as well as methodologies for safety critical design and code generation. Emphasis shall be given to the design and test methodology and tools used to meet the highly demanding requirements for aerospace and military applications such as reliability, long operational lifetime, weight optimisation, robustness to harsh temperature and radiation environments.

A6 Sensor Networks and Emerging Applications
Chairs: Pietro Siciliano (National Research Council, IT), Aly Aamer Syed (NXP Semiconductors, NL)

Topics of interest include but are not limited to: Low power sensor network design; Enabling sensor networks components: RF, MEMS, communication blocks, power sources etc. ; Self organizing sensor network models and protocols ; Energy management in sensors and networks; Fault diagnostics and correction; Sensor data fusion models ; Design experience for upcoming and emerging applications: ambient assisted living, ubiquitous computing, cooperating objects, intelligent transport systems, wearable computing, bio-inspired computation, humanoid robotics, implantable and wearable electronics, technology aids to the disables, integration of fluidics and electronics (biosystem-on-chip), innovative technology and application for healthcare etc.

A7 Application of Reconfigurable and Adaptive Systems
Chairs: Christoph Heer (Infineon Technologies, DE), Michael Huebner (Universitat Karlsruhe, DE)

Reconfigurable and adaptive systems in real application cases featuring structured ASIC, FPGA and coarse-grained architectures and platforms.

A8 Multi-core Platforms
Chairs: Marcello Coppola (STMicroelectronics, FR), Frédéric Pétrot (TIMA, FR)

Practical design experiences and funded project demonstrators based high performance and/or energy efficient heterogeneous many-core SoC. Many-core SoCs include high number of programmable cores with sophisticated memory hierarchy and 2D or 3D communication interconnects. Topics of interest but are not limited to: massively parallel SoC architectures with high number of programmable and or configurable cores, power and energy issues in multi-core architectures, memory controllers, memory organization, 2D or 3D communication interconnects (bus, NoC) and new programming paradigms.

A9 Innovative Analog and Mixed-Signal Systems and Circuits Implementations
Chairs: Paolo D'Abramo (Austriamicrosystems, IT), Vito Giannini (IMEC, BE)

Practical design experiences of analogue/mixed-signal systems based on innovative architectures and techniques to tackle the continuously increasing requirements of the applications in terms of performance, costs and quality. Topics of interest include but are not limited to: design, implementation and testing of power management units, smart sensors and sensor interfaces, data interfaces, actuator controllers, system-in-package technology, and their subsystems such as voltage regulators and references, data converters, signal processors, oscillators, frequency synthesizers, transmitters and receivers, drivers.

PAPER SUBMISSION

All manuscripts must be submitted electronically before **September 6th, 2009**, following the instructions on the conference Web page:

www.date-conference.com

Papers can be submitted for either standard oral presentation or for interactive presentation. Submissions should not exceed 6 pages in length for oral-presentation and 4 pages in length for interactive-presentation papers.

INFORMATION

Luca Fanucci - DATE Application Design Track Chair

Dept. of Information Engineering, University of Pisa
Via G. Caruso, 16, I-56122 Pisa, Italy
e-mail: l.fanucci@iet.unipi.it

Wolfgang Mueller - DATE Program Chair

C-LAB, Paderborn University
Fuerstenallee 11, D-33098 Paderborn, Germany
e-mail: wolfgang@acm.org