More information about
the edaWorkshop you
will find here:
www.edacentrum.de/
edaworkshop

Cont@ct and Information
Ralf Popp
edacentrum
Schneiderberg 32
30167 Hannover
fon: +49 (5 11) 7 62 – 1 96 97
fax: +49 (5 11) 7 62 – 1 96 95
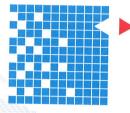popp@edacentrum.de

# edaWorkshop09 meets CATRENE/MEDEA+ Design Technology Conference

www.edacentrum.de/edaworkshop

## CATRENE / MEDEA+
## Design Technology Conference

jointly organized

edaWorkshop 09

Dresden (Germany), May 26 – 28, 2009

Federal Ministry
of Education
and Research

edacentrum  ITG  GMM  MEDEA+  CATRENE  EUREKA

In March, the program of edaWorkshop09 has been released. In case you did not receive any you can get the essentials in this article. For the first time, the edaWorkshop will not take place in Hannover, but in Dresden, jointly organized with the CATRENE/MEDEA+ Design Technology Conference. Take the opportunity for an exchange between people from Science and Application – this year even in an international surrounding!

### About edaWorkshop and CATRENE/MEDEA+ DTC

The edaWorkshop is the premier German EDA event for the publication and discussion of application-oriented EDA research findings. It is also the primary platform for presenting and exchanging solution approaches and results of EDA projects funded by the BMBF (Federal Ministry of Education and Research). The edaWorkshop is organized jointly by edacentrum and BMBF, DLR and the GI/GMM/ITG RSS Steering Group for "Computer-aided Circuit and System Design".

In 2009, the edaWorkshop will co-locate and share a common day – including keynotes, sessions and the social event – with the annual CATRENE/MEDEA+ Design Technology Conference (DTC), successor of the MEDEA+ Design Automation Conference. The CATRENE/MEDEA+ DTC, is the meeting point of Europe's scientists and experts in application-oriented design. Leading research and development in design automation has been supported by MEDEA+, now by CATRENE, and EUREKA member states during the past ten years.

Both events are attracting European experts in industry and academia and consequently the organizers decided this year to co-locate the workshop and the conference. The mix of representatives from industry and academic research creates ideal opportunities for a professional exchange of ideas on a scientific basis. The dialog can pave the way for industry to benefit from research results. It promotes communication between EDA experts and public authorities, and supports the dissemination of the results of publicly-funded projects.

The three days event is a balanced combination of information and communication. It not only offers a wide range of discussions on specialized subjects and EDA research projects, but also provides several networking opportunities. Furthermore all attendees are invited to contribute to future updates of the multi-annual strategic plan (MASP) of the European research initiative ENIAC. Their input will be collected during the poster exhibition and provided to the funding authorities and ENIAC. This is supported by a comprehensive poster exhibition, where demonstrations and prototypes will also be presented and by the successful cooperation marketplace entitled "Ideas in search of users – market in search of innovations".

### The edaWorkshop and CATRENE/MEDEA+ DTC – Catalyst of EDA Research

The design of integrated circuits and systems places enormous demands on R&D engineers and the design methods and tools that they use. It requires the efficient and manufacturing-aware development of safe, economical, robust and reliable systems of high complexity with very small structures (< 90 nm), and the design of analog and mixed-signal circuits.

In order to stimulate EDA research activities to deal with these challenges, the BMBF (Federal Ministry of Education and Research) has established as part of its research program IKT 2020 an R&D program on design platforms for complex applied systems and circuits. In these IKT 2020 EDA-projects industry and research join forces with the public authorities to support those areas that are vital for the competitiveness of the German industry. There are five application fields with a potentially high added value, and with considerable

potential for job creation: automobile/ mobility, indus-trial automation, health/medical technology, logistics/services and energy/environment.

In many cases the projects on these application fields include European-wide collaboration, they are contributing to the research program of MEDEA+ or CATRENE. The programs of IKT 2020, MEDEA+ and CATRENE complement each other and offer a lot of valuable synergies. This event is a central platform for exchanging information concerning the approaches and results of IKT 2020 projects and of MEDEA+ and CATRENE projects as well. People involved in the projects are invited to present their results by means of talks and posters. At the heart of these presenta-tions will be the relevance of the applications to topics affecting society (as defined in IKT 2020 and CATRENE White Book, part B). As second essential part of the event, the project presentations will be supplemented by a selection of peer-reviewed scientific papers on R&D results.

This year the edaWorkshop is jointly organized with the CATRENE/MEDEA+ Design Technology Conference (CATRENE/MEDEA+ DTC), providing a comprehensive overview of latest algorithms and tools, emerging tech-nologies, key and partially common CATRENE/MEDEA+ and IKT 2020 projects, as well as advanced research in application oriented SoC design automation in Europe. The joint event will be divided into a CATRENE/MEDEA+ DTC day (May 26), an edaWorkshop day (May 28), and a joint day common to both (May 27).

### Keynote: Dominique Henoff: „3D Integration for Multimedia Applications"

Multimedia applications are facing new challenges with embedded networking features and 3D needs, graphic and vision. These features are creating challenges in term of systems, architecture split, signal integrity, power dissipation and thermal effects. Interconnect limits, reached with wire bonding, are opening new areas with conceptual changes pushing the 3D integra-tion adoption in a "More Than Moore" way. The 3D integration should be strongly linked with efficient cost analysis and with new EDA solutions.

Interconnect delays with good signal integrity are push-ing major design changes: high bandwidth memory interfaces, architectural CPU/bus/caches split and mixed integration with different domains. DDR interfaces in multimedia are sooner breaking the 1 Gbps barrier with very low clock jitter. The "More Moore" CMOS scaling copes with larger integration for System on Chip (SoC), nevertheless inter die RC delay cannot follow the move.

A new EDA solution system with higher level language and modelling is required. The bulk of the solution should be an user centric approach taking the benefit of previous experience. The basic approach is to have an early accurate cost evaluation of systems enabling the architecture split, which then gives an accurate sched-ule on developments made concurrently.

A multimedia product has to cope with very dynamic markets. Multimedia products are taking the benefit of validated HW and SW solutions to address new needs with new concepts. Right cost at the right time is a key for multimedia applications.

### Keynote: Giovanni De Micheli: "System-level Design Technologies for Heterogeneous Distributed Systems"

The ongoing scaling and hybridization of manufacturing technologies enables us to attain unprecedented levels of performance as well as to integrate electronic and fluidic circuits with sensors and actuators.

Smart micro/nano systems will be the building blocks of wearable and ambient systems, that gather and inte-grate heterogeneous data in real time and operate and communicate in a wireless and ultra low power mode.

These systems will foster a revolution in health and environmental management, with the final objective of improving security and quality of life. At the same time, they will create a large market of components and sys-tems, and a renewed perspective for electronic design and manufacturing companies.

To accomplish such an ambitious goal, new technolo-gies and architectures must be matched and tailored to the operational environment by solving novel and chal-lenging design and optimization problems, through the creation of novel design methodologies and tools.

### Keynote: Klaus Revermann: „Function-oriented Development"

In the automotive market, the demand for electrical and electronic innovations and variations has been growing for some years. Using modular design for components and systems makes it possible to meet this demand for innovations and increased variety.

The number of complex, distributed systems is con-stantly increasing. A wide variety of factors, such as con-venience functions or legal requirements, affects market penetration. Car makers themselves decide how to posi-tion themselves on the market by defining the functional scope of their vehicles. The following two variables are important factors in this context: the quantity of functions and the time at which the functional scope is decided.

One key to mastering the current challenges is func-tion-oriented development and the related processes.

Sensibly combining functional orientation and module strategy determines the usability of functions in several models. New processes and modified roles are needed to combine module strategy and functional orientation, which often serve different purposes. (Tr, Pp)

Abbildung 3.01:
Giovanni De Micheli



Abbildung 3.02:
Dominique Henoff



Abbildung 3.03:
Klaus Revermann