

**IFIP WORKING GROUP 10.5**  
**REPORT OF ACTIVITIES**  
**DECEMBER 2002 - DECEMBER 2003**

**1. Sponsored events**

CHARME'2003 – 12th Advanced Research Working Conference on Correct Hardware Design and Verification Methods, which is organized by SIG-CHARME, was held in L'Aquila, Italy, from October 21<sup>st</sup> to 24<sup>th</sup> 2003.

Next sponsored events will be:

- VLSI-SoC'03 – 12th International Conference on Very Large Scale Integration, which is the flagship event of WG 10.5, to be held in Darmstadt, Germany, from December 1<sup>st</sup> to 3<sup>rd</sup> 2003;
- DIPES'2004 – Workshop on Distributed and Parallel Embedded Systems, sponsored by the WG and organized by SIG-ES, will be held in Toulouse, France, from August 22<sup>nd</sup> to 27<sup>th</sup> 2004, together with the IFIP World Computer Congress; and
- (approval pending) EduTech – Workshop on Education in Computer-Aided Design of Electronic Systems, will be held in Toulouse, France, from August 22<sup>nd</sup> to 27<sup>th</sup> 2004, together with the IFIP World Computer Congress, with support from IFIP WG 3.6 on Distance Learning.

**2. Co-sponsored events**

DATE'2003 - Design, Automation and Test in Europe, was held in Munich, Germany, from March 3<sup>rd</sup> to 7<sup>th</sup> 2003. It has been co-sponsored by the European Design and Automation Association, the EDA Consortium, the IEEE Computer Society - TTTC, ECSI, RAS, and ACM SIGDA. Proceedings have been published by the IEEE Computer Society Press.

ACSD – International Conference on Application of Concurrency to System Design, was held in Guimarães, Portugal, from June 18<sup>th</sup> to 20<sup>th</sup> 2003. It has been co-sponsored by IFIP WG 10.5 and SIG-ES and OE/CEI - Colégio de Engenharia Informática da Ordem dos Engenheiros Portuguesa. It has been held in cooperation with FME - Formal Methods Europe and EU ACiD-WG. Proceedings have been published by the IEEE Computer Society Press.

SBCCI'2003 – 16<sup>th</sup> Symposium on Integrated Circuits and Systems Design, was held in São Paulo, Brazil, from September 8<sup>th</sup> to 11<sup>th</sup> 2003. It has been sponsored by SBC – Brazilian Computer Society and SBMICRO – Brazilian Microelectronics Society and co-sponsored by WG 10.5, IEEE Circuits and Systems Society, and ACM SIGDA. Proceedings have been published by IEEE Computer Society Press.

FDL'2003 - Forum on Design Languages, was held in Frankfurt, Germany, from September 23<sup>rd</sup> to 26<sup>th</sup> 2003. It has been organized by ECSI and co-sponsored by WG 10.5. Papers have been published on a CD-ROM.

CODES+ISSS'2003 – 1<sup>st</sup> IEEE/ACM/IFIP International Conference on Hardware/Software Codesign and System Synthesis (the new conference merging CODES and ISSS), was held in Newport Beach, USA, from October 1<sup>st</sup> to 3<sup>rd</sup> 2003. It has been co-sponsored by the IEEE Circuits and Systems Society (CAS), the IEEE Computer Society (CS), the ACM Special Interest Groups on Design Automation (SIGDA), Software Engineering (SIGSOFT) and Embedded Systems (SIGBED), and IFIP WG 10.5. Proceedings have been published by IEEE Computer Society Press.

IP-BASED DESIGN, the International Workshop on IP-based SoC Design, was held in Grenoble, France, from November 13<sup>th</sup> to 14<sup>th</sup> 2003. It has been organized by INPG and Design & Reuse and co-sponsored by WG 10.5. Proceedings have been published by the local organizers and distributed to the participants.

All these events have been co-sponsored by Working Group 10.5 without financial involvement (except for CODES-ISSS, which has financial involvement).

### **3. Meetings**

Following meetings have been held in the past 12 months:

- Munich, on March 7<sup>th</sup> 2003, during the DATE conference;
- Irvine, on June 6<sup>th</sup> 2003, during the DAC conference; and
- Darmstadt, on November 30<sup>th</sup> 2003, during the WG-owned VLSI-SoC conference.

The next meeting is scheduled for Toulouse, France, during the IFIP World Computer Congress.

### **4. Special Interest Groups**

The Working Group has two Special Interest Groups attached to it: the Special Interest Group on "Embedded Systems" (SIG-ES) and the Special Interest Group on "Formal Design and Verification Methods for Correct Hardware-like Systems" (SIG-CHARME).

The creation of a Special Interest Group on "Embedded Systems" (SIG-ES) has been approved after consideration on previous regular meetings and subsequent electronic discussion. It will be responsible for the organization of the DIPES conference ("Distributed and Parallel Embedded Systems"). The creation of SIG-ES has been submitted to TC10 for consideration. The SIG chair is Bernd Kleinjohann, from C-Lab, Germany. Although formally attached to WG 10.5, SIG-ES will be jointly sponsored by Working Groups 10.3 and 10.4.

Reports on the activities of these SIG's can be found in the previous WG 10.5 Report, from July 2003.

## **5. Changes of membership**

Tiziana Margaria, from the University of Dortmund (Germany), has been approved as new member during the regular meeting in Munich. Ganesh Gopalakrishnan, from the University of Utah (USA) resigned from the Working Group.

The WG has now 65 members, with the following distribution:

- North America - 21
- Europe - 33
- Asia / Pacific - 9
- South America - 2

## **6. Aims and scope**

The WG meeting in Munich approved new Aims and Scope. The new text for the Aims is as follows:

Electronic system design demands a tight integration on a very large profile of knowledge and skills ranging from hardware and software system architecture to semiconductor physics.

Functionality of complex embedded or stand-alone systems, to be applied in areas such as general-purpose computing, telecommunications, automotive, entertainment, and multimedia, may be realized by various combinations of analog and digital hardware and software parts.

Systems can be implemented by single or multiple integrated circuits and software modules that can be either of special purpose, programmable, or reconfigurable.

The working group aims at providing a forum amongst creative experts to explore problem areas and solutions for the design of such complex electronic systems and also disseminating the solutions to a broader industrial and educational sphere.

Text for the Scope is as follows:

The Working Group is interested in a broad range of topics related to the design and engineering of heterogeneous systems, containing hardware, software, and even mechanical parts.

- System Design Methods
- Embedded Systems
- Modeling and Specification
- Design Validation
- Formal Methods in Design
- Synthesis

Design Environments  
Reconfigurable Computing  
VLSI Systems and Applications  
Physical Design  
Test and Testability  
Power-aware Design  
Analog and Mixed-Signal Systems  
Fundamental CAD Algorithms

## **7. New activities**

A Working Group PhD forum will be held for the first time at the next VLSI-SoC conference in Darmstadt, Germany, in December 2003. Funds have been obtained from TC 10 and IFIP to support participation of PhD students from all continents.

WG members expressed interest in educational activities. Presentations from interested members in this topic have been offered during the regular meeting in Munich, in March 2003. A new Workshop in Education (EduTech), in the context of electronic systems, chaired by Carlos Delgado-Kloos, is being proposed to be held as a special track of the next IFIP World Congress in Toulouse. Support and co-sponsorship from WG 3.6 on Distance Learning have been obtained.

The WG launched a sequence of workshops entitled Frontiers. These will be very informal workshops on topics of future relevance, with invited speakers from academia and industry, to be held together with the WG regular meetings. Goal of these workshops will be to investigate future challenges in the field. The first workshop has been held in Darmstadt, on November 30<sup>th</sup> 2003, with the subject “Automotive Electronics”.

## **8. Officers**

Officers have not changed in this period. Chair is Flávio R. Wagner (UFRGS, Brazil). Three vice-chairs represent the three continents – Nikil Dutt (Irvine, USA), Masaharu Imai (Osaka University, Japan), and Eugenio Villar (Univ. of Cantabria, Spain).

## **9. Home-page**

The WG 10.5 home-page is located at  
<http://www.inf.ufrgs.br/ifip10-5/real-index.html>