



Workshop

C/C++-Based Modelling of Embedded Mixed-Signal Systems

June 25th and 26th, 2007
Dresden



Fraunhofer Institut
Integrierte Schaltungen

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Preamble

The analogue and RF content in Embedded Mixed-Signal Systems, including its environment, will play an even more dominant role in the architecture definition and verification as the number of wired and wireless interfaces and standards will increase. Furthermore, the interaction between software, digital and analogue hardware partitions needs to be modelled at specification and architectural level because analogue components will be digitally assisted and their non ideal properties will be compensated digitally.

For pure digital systems, SystemC is widely accepted and standardised. However, there is a lack of an accepted modelling language at the architectural level for the Analogue Mixed Signal (AMS) and Radio Frequency (RF) domain. Due to this lack proprietary solutions for C/C++ based system design and specification have been developed by different groups, and a huge amount of experiences has been collected for different applications. In order to consolidate the proprietary solutions towards a common language and modelling infrastructure for mixed-signal applications, the Open SystemC Initiative (OSCI) has formed an AMS Working Group aiming at standardisation of an AMS extension of SystemC.

This workshop is bringing together the experiences in the applications of existing solutions of C/C++ based AMS system specification and design methodologies. The workshop will help to define and prioritise the requirements for a standardised and accepted modelling language at the specification and architectural level for the AMS domain, and serves as input for the OSCI AMS Working Group.

Martin Barnasconi
Christoph Grimm
Karsten Einwich

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Introduction to OSCI AMS Working Group

Martin Barnasconi, NXP Semiconductors / Chair SystemC-AMS Working Group, The Netherlands

C based Modelling of Embedded Mixed-Signal Systems

*Christoph Grimm, TU Vienna, Austria;
Karsten Einwich, Fraunhofer IIS/EAS Dresden, Germany*

C/C++ based Languages

SystemC-WMS: Wave Mixed-Signal Simulator

*Simone Orcioni, Giorgio Biagetti,
Massimo Conti, University Ancona, Italy*

Introduction to SystemC-AMS Library Prototype

Thomas Uhle, Karsten Einwich, Fraunhofer IIS/EAS Dresden, Germany

Proposal to Extend SystemC-AMS with a Bond Graph Based Model of Computation

*Torsten Mähne, Alain Vachoux, Yusuf Leblebici,
EPFL Lausanne, Switzerland*

C/C++ based Methodologies

Top-down Refinement of Mixed-Signal Systems with Converter Channels

Christoph Grimm, Markus Damm, Jan Haase, Florian Brame, Institute of Computer Technology TU Vienna, Austria

System Level Modelling for Mixed-Signal SoC

William Tatinian, Gilles Jacquemod, LEAT, UMR UNSA-CNRS Valbonne, France; Alexandre Lewicki, Javier Del Prado Pavon, NXP Semiconductors Valbonne, France; Benjamin Nicolle, Jean-José Mayol, Mentor Graphics Saint Ismier, France

Simulation of C-based functional models and circuit implementation

Nitasha Jugessur, Emma Sosa Morales, NXP Semiconductors, Research – Design Methods and Solutions, Eindhoven, The Netherlands

A SystemC-AMS library for the design of reconfigurable communication systems

Florian Brame, Christoph Grimm, Markus Damm, Jan Haase, Institute of Computer Technology, TU Vienna, Austria

C-based Design of Communication Applications

System Level Simulation of a Gigabit Radio Transmission System

Ralf Kakerow, Erwin Hemming, Nokia Research Center Bochum, Germany; Uwe Knöchel, Uwe Eichler Fraunhofer IIS/EAS Dresden, Germany

SystemC-AMS Modelling for Voice over IP Physical Interfaces

Gerhard Nössing, Martin Schell, Infineon Technologies Villach, Austria

Modelling Aspects for DSL Systems

Herbert Zojer, Infineon Technologies Munich, Germany

Modelling and Simulating SoC Field Bus Communication with SystemC-AMS

Mohamed Alassir, Julien Denoulet, Olivier Romain, Patrick Garda, Université Pierre et Marie Curie – Paris, France

C-based Design of Heterogeneous Systems

SystemC-AMS Modelling of Embedded Sensors for Automotive Applications

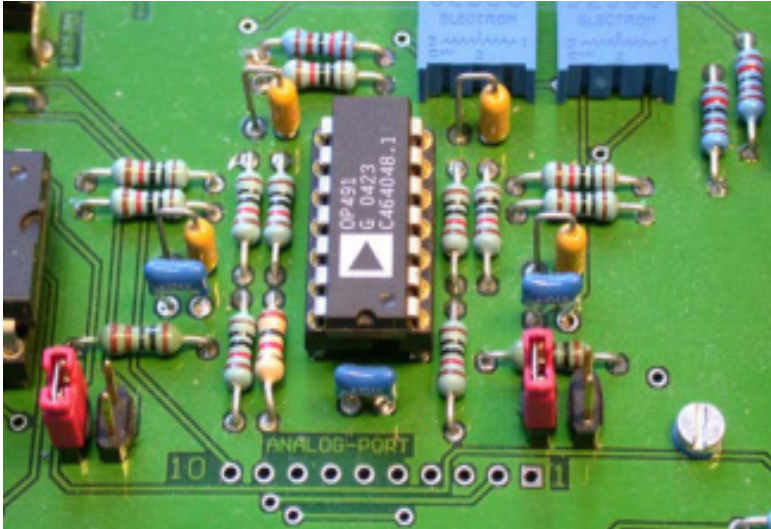
Wolfgang Granig, Wolfgang Scherr, Infineon Technologies, Villach, Austria

Motivation for C-based Modelling and Simulation of Automotive Systems

Ingmar Neumann, Continental Teves Frankfurt, Germany

Design of Microsystems using SystemC-AMS

Erik Markert, University of Technology Chemnitz, Germany



Welcome to the SystemC-AMS Workshop

June 25th and 26th, 2007

Dresden-Strehlen
Hotel Königshof

Objectives

- Identifying application areas
- Collecting Requirements
- Discussing existing solutions and there application
- Preparing standardization
- Pushing the OSCI AMS Working Group activities



Participants



Never stop thinking



Participants



Program

OSCI-AMS Working Group Session

C/C++ based Languages

C/C++ based Methodologies

C-based design of Communication Applications

C-based design of Heterogeneous Systems

Panel: SystemC-AMS – Yet another Language or the Holy Grail?



Sightseeing Dresden



20:00 Hotel lobby



20:14 Bus E75 from Wasaplatz to Pirnaischer Platz (6th stop)



20:24 Pirnaischer Platz



20:30 Start of Sightseeing at Town Hall

