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ACM Transactions on Embedded Computing Systems

Call For Papers

Special Issue on
Concurrent Hardware-Software Design Methods
for Multi-processor System-on-Chip

SoC design complexity threatens continuation of current design schemes. In fact, designing SoC requires concurrent design of complex embedded software and a sophisticated hardware platform that may include several heterogeneous CPU subsystems. The lack of early coordination between different teams belonging to different cultures causes delay and cost overheads that are no more acceptable for the design of embedded systems. Programming models have been used to coordinate software and hardware communities for the design of classic computers. A programming model provides an abstraction of HW-SW interfaces and allows concurrent design of complex systems made of sophisticated software and hardware platforms. Examples include API at different abstraction levels, RTOS libraries, drivers, typically summarized as hardware dependent software. This abstraction smoothes the design flow and eases interaction between different teams belonging to different cultures, hardware, software and system architecture. This special issue addresses the application of this concept to SoC with emphasis on practical issues.

The topic areas of this special issue will be, not limited to, as follows:

- Tutorials and survey introducing the concept of concurrent hardware-software design for SoC
    - HdS concept
    - HdS activities in standardization organizations in mobile, automotive, network processor areas
    - Transaction level model (transaction level model) concept
    - TLM activities for standardization
    - Synergy of HdS and TLM
- Concurrent hardware-software design methods
    - System specification for concurrent design

    - Design methods exploiting HdS for concurrent hardware and software design and validation

- Real SoC design case studies where the concurrent hardware-software design yields significant design productivity gain.

Please submit papers to: http://acm.manuscriptcentral.com/, and indicate that you are submitting to the **Special Issue on Concurrent Hardware-Software Design Methods for Multi-processor System-on-Chip**. See the journal's website at http://www.acm.org/tecs/ for submission instructions.

Important Dates

Submission Deadline: February 15, 2005
Acceptance Notice: May 15, 2005
Final Manuscript: July 15, 2005

Guest Editors

Dr. Ahmed Amine Jerraya
TIMA Laboratory
46 Avenue Félix Viallet
38031 Grenoble CEDEX, France
Ahmed.Jerraya@imag.fr

Prof. Trevor Mudge
Dept Electrical Engineering & Computer Science
University of Michigan
Ann Arbor, MI 48109-2122
tnm@eecs.umich.edu