CALL FOR PAPERS
ACM Transactions on Embedded Computing Systems
Special Issue on Software Controlled Memories

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TOPIC SUMMARY:
Software Controlled Memories, or Scratch Pad Memories (SPMs) are raw memories that are close to the processor pipeline, but must be explicitly managed by the software. Software controlled memories offer great promise, since SPM-based processor architectures are simpler to build, consume less power, promise predictability, and offer more storage space/transistor. Using SPMs require that data movement in and out of the SPMs must be explicitly instantiated in the application in the form of DMA (Direct Memory Access) instructions. This SPM management can be implemented in the application, or even in the operating system. Since this is difficult to accomplish by the application programmer efficiently, hardware, compiler, runtime and programming language support is needed to support SPM-based architectures. Programming support needs to be provided not only for efficiently managing data of a single application on a single SPM, but for multiple applications executing on multiples cores using multiple SPMs, often in an hierarchical organization. Efficient support for sharing data among applications may be a necessary part of the whole solution. This special issue aims at collating new research along all dimensions of software-controlled memories. The topics of interest in this call include, but are not limited to:

- Software-controlled memory based manycore architectures
- Programming language interface and support for software-controlled memories
- Compiler support for software-controlled memories
- Runtime support for software-controlled memories
- Hardware-software hybrid approaches for software-controlled memories.
- Multiple and hierarchical SPMs on manycore architectures
- Inter-task communication in software-controlled memory based manycore architectures
- SPMs in real-time systems
- Applications with SPM focus

IMPORTANT DATES:
Open for submissions in ScholarOne Manuscripts: Dec 01, 2015
Closed for submissions: April 01, 2016
Results of first round of reviews: Aug 01, 2016
Submission of revised manuscripts: Oct 01, 2016
Results of second round of reviews: Nov 01, 2016
Publication materials due: Dec 01, 2016

SUBMISSION GUIDELINES:
Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Previously published conference papers may only be submitted if the paper is substantially extended with at least 30% new material. The extension requirement of 30% is not in textual volume but in novelty. Papers should be submitted via the Manuscript Central website and should adhere to standard ACM TECS formatting requirements (where page count limit is 25, including figures and references).
Also, please indicate that you are submitting to the Special issue on "Software Controlled Memories" on the first page and in the field "Author's Cover Letter" in Manuscript Central. Any questions on this special issue should be addressed to Aviral Shrivastava, Aviral.Shrivastava@asu.edu.