

Bellevue, WA, April 3-6, 2007

Submission Deadline Extended to: October 13, 2006. Note: this is a firm deadline!

Web site: <http://www.rtas.org/>

**RTAS 2007** seeks papers describing significant contributions both to state of the art and state of the practice in the broad field of embedded and open real-time systems and computing. The scope of RTAS 2007 consists of the traditional core area of real-time and embedded systems infrastructure and theory, as well as three additional areas of special emphasis: embedded applications; development, verification, and debug tools for real-time and embedded systems; and embedded systems hardware/software interaction/co-design. Each of these four areas is described in more detail below.

**Core Area. Real-time and Embedded Systems:** This thrust continues from previous years with focus on embedded and real-time systems. Papers should describe significant contributions to infrastructure, system support, or theoretic foundations for real-time or embedded computing. Topics include all of those associated with real-time or embedded computing platforms and techniques, such as ad-hoc networks of embedded computers; real-time resource management; real-time operating systems; real-time communications; embedded system security; programming languages and software engineering for real-time or embedded systems; distributed real-time information/databases; middleware for real-time or embedded systems; support for QoS; novel kernel-level mechanisms; energy-aware real-time systems; real-time system modeling and analysis; formal methods; scheduling; control theoretic models; and performance feedback control.

**Area A. Real-Time and Embedded Applications / Benchmarks:** We invite papers on industrial and other real-time and embedded applications. The focus of this track is on contributions associated with systems that are actually deployed in commercial industry, military, or other production environments, including automotive, avionics, telecommunications, industrial control, aerospace, consumer electronics, and sensors. Papers in this area include, but are not limited to challenges, requirements, model problems, and constraints associated with various application domains, use of real-time and embedded technologies in meeting particular system requirements, performance, scalability, reliability, security, or other assessments of real-time and embedded technologies for particular application domains, mining of architectural and design patterns from applications, and technology transition lessons learned. Papers on efforts to establish a set of standard real-time benchmarks are specifically sought, composed of or derived from real applications as well as synthetic benchmarks with representative algorithms. Experience papers are also especially encouraged, which may be less formal than traditional research papers, as well as proposals for panels to offer a broader view of industrial activity on a particular subject.

**Area B. Development, Verification, and Debug Tools for Real-Time and Embedded Systems:** This track solicits papers that attack problems in creating reliable, scalable, and efficient real-time and embedded systems. Building these systems requires development platforms and tools to automate tasks that human developers find difficult, such as meeting non-functional requirements, integrating components, finding bugs, taking advantage of platform-specific optimizations, and ensuring that low-level code corresponds to high-level models and requirements. Design and implementation bugs should be detected as early as possible, and non-functional requirements such as resource limits should be explicit and declarative. Topics of interest for this track include, but are not limited to the following: model-driven tools and techniques; compiler support for real-time and embedded systems; model-checkers, static analyzers, and other bug-finding tools; industrial experience with modeling and analysis; integrating components from multiple sources.

**Area C. Embedded Systems Hardware/Software Interaction/Co-Design:** This track focuses on strategic techniques, tools and methodologies in hardware/software interaction and co-design applicable to modern electronic embedded systems. These embedded systems are increasingly complex, both in their applications and in their architectures. General topics relevant for this track will include a combination of micro-architecture and software aspects of embedded systems relevant for real-time computing. They include, but are not limited to, architecture description languages and tools, WCET analysis, software architectures, design space exploration, synthesis, and design processes. Of special interest are SoC design, special-purpose function units, specialized memory structures, multi-core chips, FPGA simulations, compilation for novel architectural aspects, software simulations of hardware components as well as static and dynamic power, timing and predictability challenges in such settings.

#### Conference Committee:

**General Chairs:** Steve Goddard, *University of Nebraska*, Steve Liu, *Texas A&M University*.

**Program Chairs:** Frank Mueller, *North Carolina State University*, Scott Brandt, *University of California, Santa Cruz*.

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Submission Deadline Extended to: October 15, 2006.

Note: this is a firm deadline!

Acceptance Decisions: Thursday, December 14, 2006

Final Manuscript: Friday, January 19, 2007

Work in Progress

Submission Deadline: Monday, January 15, 2007

*For more information, including submission details, conference events, accommodations, area attractions, etc., visit the RTAS web site: <http://www.rtas.org/>*