Power & Performance analysis platform for Android HW/SW architecture exploration

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"Android™ on VisualSim" enables hardware-software architectural exploration for quick what-if performance and power analysis of Android applications.

Tokyo, Japan. — July 1st, 2009 — TOPS Systems Corp. of Tsukuba, Japan, a leading Heterogeneous Multi-Core processor and software IP vendor, and Mirabilis Design Inc. of Sunnyvale, CA, a provider of systems engineering solutions, have jointly released the **"Android™ on VisualSim"** architecture exploration platform. Systems designers of Android devices can use this platform for hardware-software architecture exploration and power and performance analysis of consumer devices.

This approach eliminates the overhead of the pipeline in a cycle-accurate simulation, thus achieving 10-20 MIPS for a cycle-based or Approximately-Timed simulation. The availability of the complete suite of hardware components accelerates platform development to be completed in a few weeks.

"Android™ on VisualSim" integrates the Android virtual prototyping environment to both a statistical and instruction-set level hardware model in VisualSim. This package includes hardware templates of the Android Dev Phone and other consumer devices. The complete suite of analysis tools generates task latency, device utilization, system throughput and energy consumption. **"Android™ on VisualSim"** accurately generates the software activity for the target hardware platform. The hardware platform simulates the accurate system operation including arbitration, cache misses and queuing effects.

Using this innovative approach, an Android Architect can select the optimal system configuration for a set of applications; optimize the software for lowest power consumption; and determine the best task distribution across multiple processing cores. The hardware platform enables early identification of system bottlenecks and identifies areas for cost reduction.

"Current system design and optimization solutions can take months of development and cost millions of dollars", said Deepak Shankar, Founder and CEO, Mirabilis Design Inc. "Android on VisualSim cuts the total development cost to one-tenth of the current price. Moreover, the development can be performed entirely within the corporation, thus protecting intellectual property."

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"Android™ on VisualSim is extremely valuable as a software tuning environment to enable profiling of execution time and power consumption of each system. Components explored can include SoCs internals that are invisible at the system-level. Current approaches require significant rework or extensive development for the second generation because of limited performance or excess power budget. Front-loading of product design delivers a highly competitive performance and power levels at the lowest price point. As a system architect, I believe Android on VisualSim is the best platform for exploring architecture of Android™ based HW/SW systems," Dr. Yukoh Matsumoto, CEO of TOPS Systems Corp. "From an application developer's view point, Android™ on VisualSim is a tool that the performance on the target architecture can be visualized at an arbitrary point during executing the application software, without losing the Android emulator's convenience and functionality.", added Takeshi Ohkawa, Principal SW platform architect of TOPS Systems Corp.

Availability

Android™ on VisualSim is currently shipping and available on Windows, Linux and other forms of UNIX. Android™ on VisualSim is an add-on library that works with the current version of VisualSim Architect.

About TOPS Systems Corp

TOPS Systems provides "Android on VisualSim" and relevant services to enterprises in Japan to support their development of Android based embedded systems, such as smart phones, navigation systems, portable audio/video players, digital camera, video camera and digital TV. In addition, TOPS Systems provides a wide range of energy-efficient and scalable Multi-Core solutions. These cores provide distinct advantages from optimizations through Architecture-Algorithm Co-Design and Hardware-Software Co-Design for Systems and SoC developers. TOPS Systems and TOPSTREAM™ - based products are used in higher performance and lower power applications ranging from battery-driven information appliances. TOPS Systems provides development teams in Japan a range of services from initial architecture definition and software development through design verification as their extension to reduce total development costs and speed time to market.

About Mirabilis Design

Mirabilis Design is a leading provider of System-Level Architecture Exploration software for designing electronics and real-time software. Using VisualSim, designers can architect the "right" product, i.e. one which minimizes product failures and has not been over- or under- designed. Mirabilis Design accelerates Concept Engineering by drastically reducing typical model development from months to days and overall project time by 25-30%. Benefits from the solution are a visual executable specification; easier creation of optimized and differentiated products and; corporate infrastructure enabling extremely fast design trade-offs for price, performance and power.

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