Mirabilis Design introduces VisualSim Mobile Modeling Toolkit to accelerate performance and power exploration of wireless and multimedia architectures.

Editorial Contact
Vaishnavi Shankar
Mirabilis Design Inc.

Mirabilis Design Inc.
1159 Sonora Ct, Ste 116
Sunnyvale, CA 94086
Tel: 408-844-3234
Email: info@mirabilisdesign.com

VisualSim Mobile Modeling Toolkit contains 20 parameterized SoC components; traffic generators; fast custom component creators; and power and performance reports.

Sunnyvale, CA. — February 19th, 2009— Mirabilis Design Inc. of Sunnyvale, CA today announced the VisualSim Mobile Modeling Toolkit for architecture exploration of wireless and multimedia System-on-Chip, SoC. Designers assemble graphical models of the hardware and software during the product definition phase using components from this Toolkit. The models enable rapid and extensive performance-power trade-offs and virtual prototypes for verification. The Toolkit facilitates architecture exploration without prior modeling experience. Early users of the Toolkit have seen reduction in modeling construction and analysis time of over 10X.

The Toolkit contains standard components, platform templates, tutorials and expert technical support. The components comprise of Processors, Buses (AXI, AHB), Memory Controller (Flash, LPDDR and Generic), Memory (SRAM, DDR, DDR2 and DDR3), Cache, DMA, bridge, switch, trace input, traffic sequence generators and flow control units. The platform templates are application-specific topologies. The platforms are assembled using the components; parameterized for common architecture exploration; and outputs standard reports. The tutorials form a graphical medium to learn, optimize and communicate coupled with a shortened learning curve for quick productivity.

All components are explored by varying parameters, extended using the C-like scripting language and validated against the standard. The components contain functional, timing and power details. They operate at statistical, cycle-accurate and functional abstraction levels. The abstraction is selected by the user with parameter values and transaction field content. Over two hundred reports are shipped with the Toolkit. Platform models can contain graphical instantiation of SystemC TLM 2.0, Verilog and existing C++ components.

“Wireless and multimedia architectures have merged, become price-sensitive and restricted by power constraints”, said Deepak Shankar, President at Mirabilis Design Inc. “Within a short product definition schedule, system-level explorations must study timing, functionality and power at different levels of abstraction. Our focus is on “designing right the first time”. With the addition of this Mobile Toolkit, engineers can adapt to the demanding product schedules.”

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VisualSim Methodology

Designers construct system-level models by starting with VisualSim platform templates and adding on other library or user defined components, as required. Regression simulations are conducted by varying the parameter values in the simulation cockpit and selecting the desired output reports. In the early design phase, VisualSim models are abstracted using distribution-based traffic and delay functions to represent architecture components. These models help select viable architecture alternates and design attribute boundaries. With these performance constraints in the framework, the delay functions are replaced with the functional and cycle-accurate components from the Toolkit to refine and validate the micro-architecture.

Availability

The VisualSim Mobile Modeling Toolkit is currently available on Windows, Linux and UNIX. The Toolkit requires VisualSim Architect to construct models and simulate.

About VisualSim

VisualSim Architect is a graphical, platform-independent design environment used for performance analysis and power exploration of SoC and distributed system architectures. VisualSim accelerates model construction time by using pre-defined parameterized libraries rather than detailed C++ programming to define models. The automated statistics and visualization optimizes the initial concept through a series of parametric and topology refinement to deliver the best architecture. The models can be embedded in documents to be viewed and simulated from within a Web Browser.

About Mirabilis Design

Founded in 2003, and headquartered in Sunnyvale, CA, USA, Mirabilis Design is a leading provider of System-Level Architecture Exploration software for designing hardware 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%. Our customers are focused in computing, semiconductors, networking and aerospace. 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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