



Tools

Rapid Prototyping of Application-Specific Signal Processors

Mentor Graphics Corporation

Mentor Graphics offers a broad selection of design automation tool that are seamlessly integrated into the RASSP environment and processes. In addition, Mentor Graphics framework environment enables other "best in class" tools to be integrated into a powerful, seamless electronic design environment. Mentor Graphics' Falcon Framework based environment and select electronic design automation tools form the core of the RASSP electronic design subsystem.

Focus on RASSP

Design Creation and Capture

Design Architect provides an ideal front end for PWB, ASIC, FPGA or IC design processes. In one tool, the designer gets schematic, symbol, and VHDL editors, along with everything needed for top-down hierarchical design, including block creation and hierarchy navigation. Design Architect is tightly integrated with most Mentor Graphics tools as well as many non-Mentor Graphics RASSP analysis and layout tools.

Renoir is a highly automated HDL graphical entry tool that generates synthesizable VHDL or Verilog code. It supports both Windows NT/95 and UNIX, providing complete interoperability

across platforms. Features include intuitive hierarchical design/library browser, full syntax and semantic checks, simulation cross-probing and animation. Renoir's customizable compiler manager provides push button integration that generates HDL files with naming, location and scripts required for the downstream tools. With HDL2Graphics™, Renoir lets the designer import existing HDL code enabling the re-use of any legacy code, HDL design or language-based intellectual property.

Autologic is a synthesis application that optimizes mixed-level circuit descriptions, including schematics, net lists, state machines, truth ta-

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bles, Boolean equations, and high-level designs synthesized with AutoLogic VHDL and AutoLogic BLOCKS. AutoLogic then targets the result into chosen application-specific integrated circuits, field-programmable gate arrays, or integrated circuit technology.

Embedded Software Design

Microtec®, founded in 1975, is an ISO 9001-certified Mentor Graphics company that can supply proven, integrated and open embedded software development tools, real-time operating systems solutions, connectivity products, and services to the RASSP user community. It has more than 50,000 users worldwide. Microtec's pioneering Spectra® development system, XRAY® Pro debug suite featuring the XRAY debugger, C and C++ cross-compilers, and VRTX® real-time operating system (RTOS) are used to develop embedded applications by a broad range of customers.

IC Design

Mentor Graphics provides the RASSP electronic design environment with a broad suite of plug and play tools that support deep sub-micron IC design. Applications and services are provided that support library development and maintenance, physical layout, verification and extraction, and intellectual property cores and libraries.

PWB Design

Mentor Graphics provides the RASSP electronic design subsystem with a wide variety of PWB design, analysis and physical realization applications. From simple to complex printed circuit boards, Board Station can take the RASSP PWB designer all the way from schematic capture to

manufacturing drawings. For the performance of hybrids, Hybrid Station provides, single and multi-layer thick-film and thin-film technologies. If the leverage of high density and high speeds of MCM circuits--thin film (MCM-D), co-fired ceramic (MCM-C), chip-on-board (MCM-L), and thick film is required, MCM Station provides the need functionality. With MCM Station, the designer can use advanced packaging techniques: chip and wire bonding, TAB, flip-chip, and SMT; blind/buried/staggered vias; double-sided assemblies; up to 255 layers; and solid and gridded power planes. MCM Station integrates the same powerful high-speed layout tools as Board Station, as well as AutoTherm® thermal analysis, XTK signal integrity analysis, and all the features of Hybrid Station. MCM Station opens the door to a total system design capability, including design entry, analog and digital simulation, custom and ASIC chip design, testing and documentation.

Design for Test

The proliferation of intellectual property and the complexity surrounding today's systems-on-chip designs demand multiple Design for Test (DFT) methodologies to achieve high-quality and cost-effective solutions. Mentor Graphics provides the RASSP electronic design environment with best-in-class tools for full and partial scan ATPG, memory BIST, logic BIST and boundary scan. Mentor Graphics has 10 DFT centers of excellence worldwide, and employs the industry's leading professionals in research and application of proven DFT solutions.

Hardware/Software Verification/Simulation

Mentor Graphics provides a broad range of veri-

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fication and simulation applications that are seamlessly integrated to the RASSP environment. These applications provide digital simulation, accelerated verification, hardware/software co-verification, analog/mixed-signal simulation, power analysis, and transistor-level simulation functionality.

Verification of system-level requirements are addressed through virtual prototyping from several aspects, including simulation and emulation of the entire chip, execution of software on the virtual hardware prototype, and advanced and accurate analysis of physical implementation effects and their impact on functionality, performance and quality.

Intellectual Property Cores and Libraries

Mentor Graphics' Inventra Intellectual Properties (IP) Business Unit provides RASSP designers with a large offering of synthesizable, system-

level building blocks (soft cores). The Inventra Intellectual Properties Business Unit also capitalizes on Mentor Graphics' leadership in other areas of intellectual property such as physical libraries and hard cores.

Integrated Electrical Design Environment and Processes

Mentor Graphics' Falcon Framework provides the foundation for the RASSP electronic design environment. It is a key enabling technology that allows Mentor Graphics design solutions and multi-vendor tools and data to be tightly and seamlessly integrated to support the RASSP design process from system to silicon. Mentor Graphics' WorkXpert family of products is an integrated suite of technical process management tools that can enable technical project teams to capture, manage, and track their instantiation of the RASSP electronic design process.

For More Information

See Mentor Graphics' WEB Page

<http://www.mentorg.com>

Or Contact Don Tate

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