



FOR IMMEDIATE RELEASE

News Release

For more information, please contact:

Larry Toda
Mentor Graphics
503.685.1664
larry_toda@mentor.com

Suzanne Graham
Mentor Graphics
503.685.7789
suzanne_graham@mentor.com

Mentor Graphics Introduces Precision Rad-Tolerant Product to Provide Unique Advanced Radiation Effects Mitigation

WILSONVILLE, Ore., June 3, 2010 – [Mentor Graphics Corporation](#) (NASDAQ: MENT) today announced its new [Precision](#)® Rad-Tolerant™ FPGA design solution for aerospace and high-reliability applications. The product, developed with NASA's guidance, introduces an industry-first, synthesis-based radiation effects mitigation solution to reduce the risk of functionality problems including soft errors caused by single event upset (SEU) and single event transient (SET) disruptions. Initial support is available for SRAM, anti-fuse, and flash-based devices from Actel® and Xilinx®.

With Precision Rad-Tolerant, Mentor is addressing the critical need for automated, FPGA vendor-independent methods of radiation effects mitigation. Alternative mitigation methods, such as manual HDL coding, can be either too costly, time consuming, or error-prone. The Precision Rad-Tolerant solution also delivers all of the [unique synthesis-based capabilities](#) of Precision RTL Plus, including low power synthesis, integration with Mentor tools, and specialized features and flows for mil-aero and [safety-critical applications](#).

The Precision Rad-Tolerant product has several unique features that make it much easier for designers to incorporate a variety of radiation effects mitigation schemes, such as automated, multi-vendor, multi-mode Triple Modular Redundancy (TMR). The tool

– *more* –

builds on—and enhances—proven mitigation methods such as redundancy of sequential and combinational logic. Because TMR insertion is performed at the synthesis level, designers are no longer limited to using fully radiation-tolerant devices and can achieve higher-quality results versus alternative mitigation approaches.

By addressing radiation effects during implementation, the features of the Precision Rad-Tolerant solution provide an unmatched level of automation and user control. “Although the concept of TMR is simple, writing a reliable VHDL equivalent is not,” stated Melanie Berg, MEI Technologies, NASA/GSFC Radiation Effects and Analysis Group. “Automating TMR logic insertion, while allowing the user to select the type of TMR mitigation, is very beneficial to a FPGA designer developing critical space applications.”

A unique feature of the Precision Rad-Tolerant product is synthesis-based insertion of fault-tolerant finite state machines (FSM). The resulting FSM can “absorb” radiation-induced single event upsets (SEUs), mitigating their effect rather than switching the state machine into an unknown or unpredictable state. This form of safeguard meets the needs of a wide range of high-reliability applications.

“Mentor Graphics is enhancing the FPGA design flow for high reliability,” said Ken O’Neill, director of high reliability marketing for Actel. “With support for our RT ProASIC3 FPGAs, Precision Rad-Tolerant allows designers of space-flight systems to take advantage of the reprogrammability and low power consumption of flash-based FPGAs. Additionally, designers of high-reliability systems which must withstand radiation environments, such as oncology systems and airborne avionics systems, can use Precision Rad-Tolerant to protect critical data paths in ProASIC[®]3, IGLOO[®], and Fusion[®] families.

“Xilinx provides proven solutions for space and high-reliability applications that are unique to our leading-edge Virtex families,” stated Tom Feist, senior marketing director for the Xilinx ISE[®] Design Suite. “Mentor Graphics delivers a unique, synthesis-based

– more –

approach to soft error mitigation that complements Xilinx solutions for high reliability applications.”

“Mentor is uniquely positioned as the leading EDA provider of FPGA solutions for military, aerospace and high-reliability applications,” stated Daniel Platzker, FPGA Synthesis product line director, Mentor Graphics Design Creation and Synthesis Division. “Precision Rad-Tolerant fills a void for FPGA designers that are concerned with radiation by providing radiation effects mitigation capabilities that are unmatched by any other product available today.”

Product Availability

The Precision Rad-Tolerant product is available now. For more information on the Precision Rad-Tolerant product and other FPGA synthesis and mil-aero solutions from Mentor Graphics, visit the company website at: www.mentor.com/precision-radtolerant.

About Mentor Graphics

Mentor Graphics Corporation (NASDAQ: MENT) is a world leader in electronic hardware and software design solutions, providing products, consulting services and award-winning support for the world’s most successful electronics and semiconductor companies. Established in 1981, the company reported revenues over the last 12 months of about \$800 million. Corporate headquarters are located at 8005 S.W. Boeckman Road, Wilsonville, Oregon 97070-7777. World Wide Web site: <http://www.mentor.com/>.

(Mentor Graphics and Precision are registered trademarks and Rad-Tolerant is a trademark of Mentor Graphics Corporation. All other company or product names are the registered trademarks or trademarks of their respective owner.).

###