Magma and Moscape, Inc. Agree to Merge

LOS ANGELES, Design Automation Conference, June 5, 2000 — Magma Design Automation, Inc., the technology leader in silicon design implementation solutions, today announced that it has entered into a definitive agreement to merge with Moscape, Inc., the industry’s leading provider of assertion-based electrical integrity solutions for deep-submicron (DSM) designs.

As a result of the merger, Magma will be positioned to deliver a comprehensive design, analysis and implementation solution for next generation deep-submicron IC designs. Moscape will be retained as a wholly-owned subsidiary of Magma operating as an independent division and will continue to interface with all industry-leading integrated circuit (IC) implementation flows. Terms of the agreement were not disclosed.

As semiconductor processes continue to scale down to smaller and smaller feature sizes, electrical integrity (signal integrity, circuit integrity and noise immunity) issues are compounding. Non-linear behavior of transistors in the presence of complex interconnect is now an increasingly common problem. These electrical integrity violations must be checked and repaired before final verification sign-off. Existing analysis tools were not built to address DSM design issues and cannot reliably validate logic correctness and timing closure. Consequently, time-to-market, robustness and dependability of today’s ICs are compromised.

Moscape offers a suite of innovative solutions for the diagnosis and repair of electrical integrity problems of DSM designs. The company’s patent-pending assertion-based technology enables designers to uncover any undesirable analog effects in both the logic and physical implementation stages of the design process. Detrimental analog effects in logic designs including drive strength, noise margin, charge sharing, and crosstalk are becoming the dominant reason for silicon failures.

“We believe that there will always be strong markets for independent analysis and verification tools as well as main implementation flows,” said Rajeev Madhavan, president and CEO of Magma. “Moscape has established itself as provider of high quality analysis tools for electrical integrity and we are very pleased to make them part of Magma.”

“Moscape’s mission is to provide the tools and data needed to analyze and repair electrical integrity problems,” said Fuad Musa, president and CEO of Moscape. “When we began to work with Magma to ensure a smooth interface between our tools, it became obvious to both companies that we shared a common vision of how these problems should be addressed. We believe that Magma’s FixedTiming™ approach to chip implementation is a powerful solution for next generation deep-submicron IC designs. And, we believe that our assertion-based technology perfectly complements Magma’s flow as well as other established flows in the market.”

THE MAGMA AND MOSCAPE TECHNOLOGY FIT

Moscape’s products include CircuitScope™ and GateScope™. CircuitScope is a circuit integrity analysis tool and is the first commercially available tool of its kind. It provides extensive analysis of multi-million transistor ICs, guaranteeing complete coverage of all recognized circuit structures for potential circuit integrity problems such as beta mismatch, charge-sharing, static noise margins and coupling. By performing this analysis pre- and post-layout, the need for extensive back-end circuit and timing simulations is reduced while assuring greater probability of success with first silicon.

GateScope is based on Moscape’s proven assertion-based technology. It enables cell-based IC designers to perform independent noise analysis to ensure the electrical integrity of their designs before tapeout. Designers can analyze the impact of noise on both functionality and delay. Using a patented deterministic transient analysis technique, GateScope performs methodical elimination of false errors on large multi-million gate designs, so designers can focus only on true noise problems. Additionally, an In-Place Optimization feature for automatic repair of noise failures generates ECO netlists for incremental place and route that results in a robust and reliable IC.

“The fit between Moscape and Magma is ideal,” said Bob Smith, vice president of marketing for Magma. “Both companies foresee signal and electrical integrity issues as the next frontier of opportunity in the design automation of complex, deep-submicron ICs.”

“Microprocessor designers have been wrestling with these issues for years and have typically had to develop their own analysis and verification tools to get around these problems. Magma has worked with microprocessor teams to perfect automatic correction systems and is in a unique position to address signal integrity problems in the chip implementation flow,” Smith elaborated (see Sun press release dated June 5, 2000). “Soon, all ASIC and COT designers will be confronted with these problems and will need implementation flows that automatically solve the problems coupled with independent analysis and verification tools that can validate the correctness of the resulting designs.”
As an example of the synergy between the two companies, today Magma announced Blast Chip™, a complete RTL to GDSII design implementation system. Blast Noise™, a companion product to Blast Chip and Magma’s Blast Fusion™ physical design system, provides automatic crosstalk analysis and correction during the physical design process. Magma customers will use the Moscape CircuitScope and GateScope tools to independently verify both the noise margins and electrical integrity of the designs generated by Magma’s flow and to provide the final sign-off before release to manufacturing. Users of other implementation flows will continue to be able to verify their designs through Moscape’s tools, as well as pass data back to these flows so that noise and electrical integrity problems can be corrected.