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**ASML MASKTOOLS OFFERS SCATTERING-BAR IP
FOR USE WITH MENTOR GRAPHICS' CALIBRE SOFTWARE**

**Collaboration Enables Yield-Enhancing Production of
Advanced Photomasks and Silicon for 180 nm Lithography and Beyond**

SANTA CLARA, Calif., February 29, 2000 – Further closing the gap between semiconductor design and manufacturing, ASML MaskTools, a wholly owned subsidiary of ASM Lithography (Amsterdam Exchanges and Nasdaq: ASML), and Mentor Graphics Corporation (Nasdaq: MENT) offer the first three deliverables of their collaborative agreement from December 1999. This agreement – the first between an advanced imaging solution provider and a leading electronic design automation (EDA) company – offers combined expertise in imaging equipment, EDA software and advanced processes to create a total integrated process solution, now required for successful silicon yield at sub-wavelength geometries.

First Deliverable: ASML MaskTools is now offering an unbundled manufacturing license enabling wafer fabs to easily license ASML MaskTools' patented scattering-bar intellectual property (IP). This new policy makes it straightforward to choose Mentor Graphics'® Calibre® software for scattering-bar creation.

Second Deliverable: A jointly authored "*Calibre Scattering Bars Application Guide*" is available now to Mentor Graphics and ASML customers to optimize scattering bar creation in the Calibre flow.

Third Deliverable: Calibre WORKbench™ is the interactive software for lithographers to create Calibre process-simulation models and to verify Calibre batch tool setups. ASML's most advanced imaging systems allow the use of QUASAR™ multipole illuminators. Jointly

qualified Calibre “illumination models” specifically designed for QUASAR will be added to the 2Q00 Calibre WORKbench release.

Calibre’s scattering-bar capabilities strongly complement its unified suite of Phase-Shift Mask (PSM), Optical & Process Correction (OPC), and industry-standard Silicon-vs.-Layout verification software. Combining ASML MaskTools’ scattering-bar expertise, services and IP with Calibre software will enable more cost-efficient design and production of photomasks for 180 nm lithography and beyond.

“ASML MaskTools’ patented scattering-bar technique improves process latitude, making photolithography robust while also delivering consistent quality in wafer output,” said Doug Marsh, president of ASML MaskTools and vice president of ASML. “Producers of advanced semiconductor devices rely on this technology to ensure the manufacturability of their leading-edge IC designs. We are very pleased with the Mentor-ASML collaboration. Calibre is the leading tool for implementing and verifying all the major optical extension layout design techniques – PSM, OPC and, of course, scattering bars.”

“ASML is a leader in advanced imaging equipment and ASML MaskTools is an expert in process-integration of imaging systems, resists, and optical extension techniques,” said Brian Derrick, general manager of the IC Verification & Manufacturability division of Mentor Graphics. “Our mutual customers gain production-worthy lithography solutions because our collaboration delivers proven imaging systems, process-integration expertise, and the industry-standard verification and manufacturability software, Calibre.”

To assist customers in implementing scattering-bar technology, ASML MaskTools is also offering a range of process-integration products and services, including defect sensitivity monitors for mask making, test mask databases, process optimization/calibration software and technology training courses. Calibre is recommended for implementation of PSM, OPC and scattering bars because of its best-in-class hierarchical engine, worldwide support and leading market share. In a recent test, the poly layer for a 20-million-transistor logic chip was processed in 1 hour, 14 minutes on a 4-CPU workstation with a moderate 2.5X data volume increase. A 5.4-million-transistor, 388 MB ASIC was completed in 1 hour, 36 minutes with a 0.91X data volume improvement.

“In addition to opening the door for future collaborative work with Mentor Graphics, this new unbundled IP product offering has the potential to significantly expand ASML MaskTools’ customer base throughout the U.S., Europe and Asia, including Japan,” Marsh added.

Scattering-bar technology can significantly increase process latitude and chip yields, especially for optical lithography production at 180 nm design rules and below. By adding these sub-resolution features to a mask design, depth of focus and iso-dense matching is improved, resulting in better CD control in the wafer fab. Optical extension techniques such as OPC, PSM, scattering bars and off-axis illumination are increasingly being used in today’s lithography equipment to print feature sizes smaller than 180 nm. These technologies are extending the application of lithography systems, and are expected to play a critical role in evolutionary optical lithography as well as next-generation lithography systems.

ASML MaskTools’ policy is that each fab that wishes to make and use photomasks containing ASML MaskTools’ scattering-bar IP should obtain a manufacturing license from ASML MaskTools. The scattering-bar manufacturing license is sold exclusively by ASML MaskTools. The rights to use scattering-bar technology to create and use photomasks containing scattering bars may be licensed directly from ASML MaskTools for \$25,000 per quarter for each facility using the photomasks. For reference, this licensing fee is less than the typical cost of a single phase-shift mask.

Note: The ASML MaskTools scattering-bar manufacturing license is completely independent of Calibre software licensing and Mentor Graphics is not an agent or distributor for ASML MaskTools’ intellectual property.

About Mentor Graphics:

Mentor Graphics Corporation is a world leader in electronic hardware and software design solutions, providing products and consulting services for the world’s largest electronics and semiconductor companies. Established in 1981, the company reported revenues over the last 12 months of over \$500 million and employs approximately 2,700 people worldwide. Company headquarters are located at 8005 S.W. Boeckman Road, Wilsonville, Ore. 97070-7777. World Wide Web site: www.mentor.com.

About ASML MaskTools:

ASML MaskTools, Inc. is an ASML subsidiary based in Santa Clara, Calif. The company is focused on providing an array of optical extension technologies to enhance photolithography process latitude, thereby improving IC yields in manufacturing. Optical extension technologies are becoming essential as optical lithography is continuing to be used for volume IC manufacturing below the wavelength of the exposure light source. For more information on MaskTools' products and services, contact the company by calling (408) 855-0500 or visit the website at www.masktools.com. MaskTools is a trademark of ASML.

About ASML:

ASML, founded in 1984, is a world leader in advanced photolithography systems that are essential to the fabrication of integrated circuits. ASML is publicly traded on both the Amsterdam Exchanges and on the Nasdaq Stock Market[®] under the symbol "ASML." Visit the company's web site at www.asml.com for more information.

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