



**FOR IMMEDIATE RELEASE**

**VISTEC, CEA/LETI AND D2S JOIN FORCES ON E-BEAM  
DIRECT WRITE SOLUTIONS FOR THE 45- AND 32-NM NODES**

**SAN JOSE, Calif., January 12, 2009**—E-beam supplier Vistec, along with semiconductor research group CEA/Leti, and emerging design and software company D2S, today announced a collaboration focused on refining and validating advanced design-for-e-beam (DFEB) solutions for the 45- and 32-nm nodes. Over the next 12 months, CEA/Leti will manufacture test chips using a combination of D2S' advanced DFEB design and software capabilities and the latest high-resolution e-beam direct-write (EbDW) lithography equipment from Vistec. The goal of this collaboration is to print 45- and 32-nm circuits using Vistec Electron Beam's SB3054 system installed at CEA/Leti.

***High Speed, Low Cost***

Driving the need for this joint effort is the ever-rising cost of semiconductor masks, which is making low-volume production of custom ICs economically infeasible. Using an e-beam tool to directly write patterns onto a wafer has always been the most accurate way to pattern a semiconductor wafer; however, low throughput using a traditional variable shaped beam (VSB) approach has limited its application. By efficiently employing character or cell projection (CP) technology to re-write the throughput rules around EbDW, the DFEB solution virtually eliminates the cost of masks and can speed time to market by shortening the design-to-lithography process flow.

D2S' proprietary DFEB solution encourages and isolates the most commonly recurring patterns of chip designs and translates them into templates on "mini-reticles". A prepared set of templates on a mini-reticle then allows these complex patterns to be replicated in a single shot on a wafer. This is accomplished using Vistec's SB3054 tool utilizing CP technology. By reducing a design's required shot count, this approach improves throughput over VSB while enhancing accuracy.

***Solutions for a New Production Paradigm***

"Ever increasing mask costs are presenting numerous challenges in the semiconductor industry," said Aki Fujimura, founder and chief executive officer of D2S. "Combining EbDW with CP provides a low-risk, low-cost path to a new production paradigm. Producers of high-value, low-volume devices will be the beneficiaries of this joint effort to validate direct-write-e-beam solutions at leading-edge technology nodes—thanks in part to our DFEB ecosystem partners, CEA/Leti and Vistec."

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**VISTEC, CEA/LETI AND D2S JOIN FORCES ON EBDW SOLUTIONS.....PAGE 2 OF 3**

Laurent Pain, lithography laboratory manager at CEA/Leti, stated, “DFEB is an innovative, new approach to the old problem of boosting e-beam throughput while enhancing accuracy. We are looking forward to this collaboration to validate accuracy and throughput goals at the 45- and 32-nm nodes using the Vistec SB3054 system in tandem with D2S’ advanced DFEB solution.”

“We see the integrated CP functionality and DFEB software as a bridge between the high-resolution requirements of advanced R&D and the challenging throughput expectations driven by industrial prototyping applications,” said Wolfgang Dorl, general manager at Vistec Electron Beam. “The CP feature is available today from Vistec and was recently installed at CEA/Leti to enable this collaboration and research.”

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**About Vistec**

Vistec Electron Beam Lithography Group combines Vistec Electron Beam GmbH and Vistec Lithography Inc.

**Vistec Electron Beam**

Vistec Electron Beam, located in Jena, Germany, is providing electron-beam lithography equipment based on shaped beam technology, which is used by leading semiconductor manufacturers and many research institutes around the world. Their innovative electron beam systems are used for microchip production and integrated optics as well as for scientific and commercial research.

**Vistec Lithography**

Vistec Lithography, located in Watervliet, NY, USA develops, manufactures and sells electron-beam lithography equipment based on Gaussian beam technology. Their electron beam systems are world-wide accepted in advanced research laboratories and universities.

**Download of all media releases and images from [www.vistec-semi.com](http://www.vistec-semi.com).**

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## VISTEC, CEA/LETI AND D2S JOIN FORCES ON EBDW SOLUTIONS.....PAGE 3 OF 3

### **About CEA/Leti**

CEA is a government-funded technological research organisation. Drawing on its excellence in fundamental research, its activities cover three main areas: Energy, Information and Health Technologies, and Defence and Security.

Leti, a CEA laboratory located in Grenoble, is one of the main European applied research centers in electronics. More than 85% of its activity is devoted to industrial research with 350 contracts a year.

Since its creation in 1967, Leti has led to the creation of more than 30 start-ups in high-technology. The main areas of activity are micro- and nano-technologies for microelectronics (more Moore, More than Moore and Beyond CMOS), technologies, design and integration of microsystems, photonics and imaging technologies, micro- and nano-technologies for biology and health, communication technologies and nomadic objects.

Leti operates with an annual budget of 174 M€ and employs 1,000 people with, in addition, more than 600 external collaborators (postgraduates, research and corporate partners). Leti has 8,000m<sup>2</sup> of clean rooms, an equipment portfolio worth 200 M€ and invests more than 40 M€ a year on new equipment. Leti has a dynamic Intellectual Property policy and has filed more than 250 new patent applications in 2008. For more information, visit [www.leti.fr](http://www.leti.fr)

### **About D2S**

D2S is empowering an era of new business opportunities for electronic products by making low-volume silicon production cost effective at the 65 nanometer node and below. D2S' advanced design-for-e-beam (DFEB) design and software capabilities maximize existing e-beam technology to virtually eliminate the costs of masks and can speed time to market by shortening the design-to-lithography process flow. Headquartered in San Jose, Calif., the company was founded in 2007. For more information, see: <http://www.direct2silicon.com/>.

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