

Chip Industry Entering New Era

July 14 2005

In a keynote speech today at SEMICON West, Texas Instruments executive and SIA representative to the International Technology Roadmap for Semiconductors (ITRS) Roadmap Committee, Dr. Bob Doering, will discuss critical issues facing the industry and provide a long range outlook on semiconductor technology development. Ongoing discussions across ITRS working groups, including feedback from its public conference yesterday, shaped the speech that will emphasize the growing CMOS scaling challenges and updated ITRS targets.

"The 2005 ITRS roadmap proposal is significantly more aggressive than previous versions on several key scaling parameters," Doering said. "However, the ITRS is also entering a new era as the industry begins to address the theoretical limits of CMOS scaling. The 2005 ITRS highlights the challenges along the 15-year outlook and starts to examine what might come next."

Doering serves, along with Dr. Paolo Gargini of Intel, as one of the two U.S. representatives to the ITRS International Roadmap Committee, and is a Senior Fellow and silicon technology development strategy manager at TI.

On behalf of the ITRS, Doering will overview how and when key roadmap parameters are targeted to evolve as the industry works to overcome the identified barriers. While, over roughly the last 10 years, the pace of feature scaling has been accelerated, the 2005 ITRS proposes a transition period between now and 2010, after which essentially all critical dimensions return to the historical average rate of .7X scaling

every three years.

"The primary objective of the ITRS roadmap is to identify the key technology challenges out to a 15-year horizon and place them in the spotlight for industry consideration," emphasized Doering. "Our hope is that the focused attention will influence greater collaboration and new research initiatives to apply resources that ultimately deliver innovative, cost-effective solutions."

Demonstrating the open philosophy that the ITRS adopted when it was created 14 years ago, Doering will call upon SEMICON West attendees to share opinions on how to further enhance the value of future editions of the roadmap. For example, should the ITRS be guided by specific economic models and cost-benefit analyses for addressing the rising challenges of CMOS scaling and beyond? Other areas for discussion include the balance of inputs to the roadmap, its scope, and optimizing the level of detail. The dialogue on such topics will continue in a panel discussion following Doering's keynote address.

For 14 years, the ITRS has helped influence industry decisions about the technologies required to stay on the Moore's Law curve. The ITRS is sponsored by the European Semiconductor Industry Association (ESIA); the Japan Electronics and Information Technology Industries Association (JEITA); the Korean Semiconductor Industry Association (KSIA); the Semiconductor Industry Association (SIA); and Taiwan Semiconductor Industry Association (TSIA). International SEMATECH is responsible for global coordination for ITRS activities.

Doering's keynote speech is open to all SEMICON West attendees. It is planned for 9:00 am PDT today, followed by a panel presentation of additional industry experts.

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