## Lorentz Solution, Inc. and Stanford University Receive Customer Choice Award for TSMC 2012 OIP Ecosystem Forum Paper on Electromagnetic Design for Silicon Millimeterwave IC

SANTA CLARA, Calif. — (February 21, 2013) — Lorentz Solution, Inc., the world's leading provider of Electromagnetic (EM) Design Platform Solutions for RF and High Speed Integrated Circuit (IC) Design, received TSMC's Customer Choice Award for its paper presented at the 2012 TSMC Open Innovation Platform® (OIP) Ecosystem Forum in Silicon Valley. The paper was co-authored with Stanford University and focused on electromagnetic modeling of critical interconnect in millimeter wavelength (MMW) designs.

TSMC's 2012 OIP Ecosystem Forum brought together over 1,000 individuals who represent the top semiconductor design talent in Silicon Valley. The program for the event consists of over 30 papers. Based on attendee feedback, the top papers are selected for the Customer Choice Award.

Stanford has been pursuing cutting edge research on circuits operating at MMW frequencies. Interconnect electromagnetic behavior becomes a primary concern in such designs. The paper described how PeakView High Frequency Designer (HFD) was used to easily capture and include this information in the circuit simulation. Designers use HFD after their normal RC extraction to add EM models for critical interconnect.

Stanford fabricated the circuit at TSMC. The paper shows the correlation between the simulation using HFD and the actual silicon. Presenting the paper were Lorentz Solution founder Jinsong Zhao and Stanford researcher Kamal Aggarwal.

"We are very honored that the distinguished audience at the TSMC OIP Forum highly valued our presentation," said Lorentz's Founder and President Jinsong Zhao, "The results presented in our paper show the necessity of combining leading edge electromagnetic analysis with designer-enabling flow integration. It's our contribution to the ecosystem to address the impending EM-centric IC design paradigm shift."

"The audience fully appreciated how PeakView was used to capture EM effects at 50 to 70 GHz in our designs. Traditional RC extraction is not adequate for analysis of differential transmission lines, CPW lines and interconnect at these frequencies," said co-author Kamal Aggarwal of Stanford. "Peakview HFD allows for a significant automation of electromagnetic based design."

"This collaboration shows the value in the OIP design ecosystem," said Suk Lee, TSMC Senior Director, Design Infrastructure Marketing Division. "Silicon correlation at TSMC validates Lorentz's high-frequency design technology that helps circuit designers verify next generation millimeterwave designs with confidence."

## About Lorentz Solution, Inc.

Lorentz Solution, Inc. is the industry leader in supplying electromagnetic (EM) design capabilities to the RF, high-speed analog and high-speed digital design community. PeakView<sup>™</sup> EM Design Platform, Lorentz's flagship product, is widely

adopted by top IDM, fabless companies and semiconductor foundries. Based in Santa Clara, California, USA with initial funding from US-based VC firms, Lorentz Solution is continuing its multi-year profitable growth.

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