Industry Leaders Collaborate with Synopsys on Modeling Standards to Address Design Down to 2nm

Manufacturing Challenges and Need for Ultra-low Power Drive Extensions to Liberty and Interconnect Technology Standards

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Highlights:

- Liberty extensions drive optimal implementation/QoR for ultra-low power applications
- Extended parasitic extraction modeling for advanced process and device technologies
- Collaboration with technology innovators drives modeling standards for 2nm and beyond
- Technical advisory boards include Arm, NVIDIA, Qualcomm, TSMC, and others

Synopsys, Inc. (Nasdaq: SNPS) today announced that the Liberty Technical Advisory Board (LTAB) and Interconnect Modeling Technical Advisory Board (IMTAB) have ratified new modeling constructs to address timing and parasitic extraction challenges at process nodes down to two nanometers (nm). Mobile device requirements for ultra-low power and manufacturing challenges require new approaches to ensure the best accuracy at signoff while enabling design tools to optimize for the lowest power consumption. In addition, device architectures, mask, and patterning techniques at these nodes result in artifacts that must be modeled by new extensions in the interconnect technology file (ITF).

In power analysis, the Liberty standard has been enhanced to provide better insight into the assumptions use for computation of dynamic power values in the library models. Extraction modeling in the ITF file now addresses gate resistance for new device architectures, as well as patterning extensions on interconnect and trench contact structures.

"Through close collaboration with leading foundries and IDMs, we are able to keep modeling standards out in front of the next wave of advanced process nodes," said Jacob Avidan, senior vice president of engineering in Synopsys' Design Group. "The latest modeling enhancements ratified by the Liberty and ITF technical advisory boards are essential to achieving timing and power requirements that allow our partners to bring the highest quality designs to market in the shortest time possible."

All LTAB/IMTAB proposals have been quickly incorporated into Synopsys' Fusion Design Platform™ to enable support for early technology adopters. Tools in the Fusion Design Platform include Design Compiler® synthesis, IC Compiler™ II place-and-route, StarRC® extraction, PrimeTime® signoff, and PrimePower power analysis.

About Synopsys

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