Synopsys' Magellan Deployed by NVIDIA to Maximize Verification Productivity on Next-Generation Graphics Processing Units

Magellan Enables Rapid and Thorough Block-Level Verification

Synopsys, Inc. (NASDAQ: SNPS), the solutions leader in semiconductor design software, today announced that NVIDIA Corporation, a leading provider of visual processing solutions, has adopted Synopsys' Magellan™ hybrid RTL formal verification tool to shorten design cycles of their next-generation graphics processing unit (GPU). Magellan's ability to find deep corner-case bugs, power to deliver proofs without manual intervention, and ease of adoption were key factors in NVIDIA's decision to deploy Magellan.

"We need to streamline the verification process to meet our highly compressed design cycle," said Dan Smith, director of Hardware Engineering at NVIDIA. "Magellan has enabled our engineers to verify their design blocks extensively, finding complex design bugs before going into full-chip simulation. The ability to find these bugs earlier in the verification process is essential to meet our aggressive chip development schedules."

NVIDIA, an early adopter of assertion-based verification methodology, has created a library of assertions to pinpoint bugs more efficiently in their dynamic verification environment. Magellan complements this environment by reusing the assertions to prove complex design behavior and find deep corner-case bugs missed by traditional techniques. As a result, Magellan fits easily into NVIDIA's existing verification flow, allowing their engineers to apply rigorous verification technologies and raise the quality of their design.

"Magellan's hybrid architecture has found corner-case bugs several thousand cycles deep in our designs, unlike tools using pure formal engines that can only search a few hundred cycles deep," said Prosenjit Chatterjee, verification lead at NVIDIA. "Additionally, Magellan is able to prove many complex properties without manual intervention, and hence is ideal for deploying property verification across a regression farm to maximize productivity."

"Verification of leading-edge designs, such as NVIDIA's GPUs, requires innovative technologies to find complex bugs," said Swami Venkat, director of RTL Verification Marketing at Synopsys, Inc. "Magellan's hybrid architecture uniquely combines dynamic and high-capacity formal proof engines to increase verification confidence."

About Synopsys

Synopsys, Inc. is the solutions leader in electronic design automation (EDA) software for semiconductor design. The company delivers technology-leading semiconductor design and verification platforms and IC manufacturing software products to the global electronics market, enabling the development and production of complex systems-on-chips (SoCs). Synopsys also provides intellectual property and design services to simplify the design process and accelerate time-to-market for its customers. Synopsys is headquartered in Mountain View, California and has offices in more than 60 locations throughout North America, Europe, Japan and Asia. Visit Synopsys online at https://www.synopsys.com/ .

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