GLOBALFOUNDRIES and Cadence Add Machine Learning Capabilities to DFM Signoff for GF's Most Advanced FinFET Solutions

March 23, 2021

Highlights:

- *Cadence Litho Physical Analyzer with ML technology qualified for GF 12LP/12LP+ solutions, providing up to 33% greater detection efficiency with less than 10% runtime impact*
- *Collaboration between Cadence and GF enables signoff engineers to speed production of chip designs on GF's 12LP and 12LP+ solutions for the AI, data center, hyperscale, and aerospace and industrial markets*

SAN JOSE and SANTA CLARA, Calif., March 23, 2021 —GLOBALFOUNDRIES® (GF®), the global leader in specialty semiconductor manufacturing, and Cadence Design Systems, Inc. (Nasdaq: CDNS) today announced a collaboration to facilitate design for manufacturing (DFM) signoff with machine learning (ML) prediction capabilities. As part of the collaboration, the Cadence® Litho Physical Analyzer, a DFM pattern analysis tool integrated with GF-developed ML models, has been qualified for GF's 12LP and 12LP+ solutions.

The ML-enhanced Cadence Litho Physical Analyzer, optimized for GF's 12LP and 12LP+ solutions, provides customers with in-design automated DFM hotspot detection and fixing capabilities to speed implementation and time to market. The ML-based enhancement delivers up to 33% greater detection efficiency versus traditional pattern-matching checks with less than 10% runtime impact.

GF has released a corresponding ML-enhanced DFM kit as an update to 12LP process design kits (PDKs), with the 12LP+ version scheduled for release in the second quarter of 2021, providing customers with a simple path to speed design and production of chips optimized for the artificial intelligence (AI), data center, internet of things (IoT) and other markets.

GF's most advanced FinFET solution, 12LP+ is optimized for AI training and inference applications and offers chip designers an efficient development experience and a fast time-to-market. 12LP+ builds upon GF's established 14nm/ 12LP platform, of which GF has shipped more than one million wafers. 12LP and 12LP+ deliver a superior combination of AI power, performance and area (PPA) benefits without the need to migrate to smaller and much costlier geometries.

"By incorporating ML capabilities into the Cadence Litho Physical Analyzer, customers using GF's 12LP platform and 12LP+ solution can verify signoff quality during implementation, thereby achieving better silicon quality," said Jim Blatchford, vice president of technology enablement at GLOBALFOUNDRIES. "Our collaboration with Cadence also allowed the swift enablement and seamless integration with our customers' design flows through the delivery of this new capability in our 12LP and 12LP+ PDKs."

The Cadence Litho Physical Analyzer enhanced with ML seamlessly integrates with the Cadence Innovus™ Implementation System and Cadence Virtuoso® custom IC design platform, providing customers with a smoother design experience through a common, familiar interface. The Litho Physical Analyzer is part of the broader Cadence digital full flow, which supports Cadence's Intelligent System Design™ strategy, enabling system-on-chip (SoC) design excellence.

"Not only does our Litho Physical Analyzer tool include ML capabilities, but the entire Cadence implementation platform has ML capabilities as well, which let us provide customers with a highly sophisticated solution," said Michael Jackson, corporate vice president, R&D in the Digital & Signoff Group at Cadence. "Through our latest collaboration with GF, customers can leverage our tools with the added boost of ML capabilities to achieve design success using GF's 12LP/12LP+ solutions. Furthermore, our Litho Physical Analyzer with ML capabilities enhances GF's DRC+ capabilities and improves yield based on the tool's ability to effectively catch more hotspots and repair previously undetected hotspot patterns."

The Cadence Litho Physical Analyzer supports Cadence's broader Intelligent System Design™ Strategy, enabling SoC design excellence. For more information on the Cadence advanced-node solutions, visit www.cadence.com/go/advnodesols.

About GF

GLOBALFOUNDRIES (GF) is the world's leading specialty foundry. GF delivers differentiated feature-rich solutions that enable its customers to develop innovative products for high-growth market segments. GF provides a broad range of platforms and features with a unique mix of design, development and fabrication services. With an at-scale manufacturing footprint spanning the U.S., Europe and Asia, GF has the flexibility and agility to meet the dynamic needs of customers across the globe. GF is owned by Mubadala Investment Company. For more information, visit www.globalfoundries.com.

About Cadence

Cadence is a pivotal leader in electronic design, building upon more than 30 years of computational software expertise. The company applies its underlying Intelligent System Design strategy to deliver software, hardware and IP that turn design concepts into reality. Cadence customers are the world's most innovative companies, delivering extraordinary electronic products from chips to boards to systems for the most dynamic market applications, including consumer, hyperscale computing, 5G communications, automotive, mobile, aerospace, industrial and healthcare. For six years in a row, Fortune magazine has named Cadence one of the 100 Best Companies to Work For. Learn more at cadence.com.

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