Synopsys Announces Industry-First Unified Functional Safety Verification Solution to Accelerate Time-to-Certification for IPs and SoCs

VC Functional Safety Manager Reduces ISO 26262 FMEA/FMEDA and Fault Classification Effort by Up to 50 Percent

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Highlights:

- Automation is required to address the challenging certification requirements and increased efforts associated with new automotive IPs and SoCs
- Industry's first and most comprehensive functional safety verification solution includes unified FMEA/FMEDA and fault classification automation, powerful verification engines, ISO 26262-certified tools, and expert services
- Anticipated increase in effort from functional safety verification can be reduced by up to 50 percent using this new unified solution

Synopsys, Inc. (Nasdaq: SNPS) today announced the industry's first and most comprehensive unified functional safety verification solution to accelerate time to ISO 26262 certification for automotive IP and semiconductor companies targeting the highest Automotive Safety Integrity Levels (ASIL D). As part of the solution, Synopsys introduced VC Functional Safety Manager, a FMEA/FMEDA and fault classification automation technology enabling architects, IP designers, and verification engineers to accelerate their functional safety verification with productivity gains up to 50 percent compared to traditional manual and error-prone functional safety verification point tools.

"Arm strongly believes safety will be critical to the successful deployment of advanced ADAS and autonomous solutions," said Neil Stroud, senior director of technology strategy, Automotive and IoT Line of Business, Arm. "With ISO 26262 compliance and functional safety verification requirements increasing for semiconductor companies targeting automotive applications, automation, and fast verification engines, such as the Synopsys Z01X digital fault simulation technology, are essential to accelerate time-to-compliance."

Automotive semiconductor designs are growing in complexity to meet the increasing functionality demand for applications such as powertrain, advanced driver assistance, and autonomous driving. At the same time, semiconductor companies are required to deliver ISO 26262 certification for their products to customers. This combination is expected to increase verification efforts by 2-3X. Synopsys' unified functional safety solution provides unique technologies to bridge the current productivity gaps by delivering a comprehensive FMEA/FMEDA and fault classification automation solution leveraging a unified fault definition and database with the fastest verification engines. In addition, Synopsys delivers the required tool certification and expert services enabling customers to accelerate planning, development, and work product generation for assessors and customers. Synopsys' unified functional safety verification solution and VC Functional Safety Manager are deployed today at leading customers.

"As automotive electronic system complexity continues to increase, reducing the risks of systematic and random hardware failures is critical for modern automobiles," said Alexander Griessing, Principal Safety Expert at Exida. "Synopsys and Exida recognize the need for an efficient and automated solution and are working together to help customers accelerate their deployment of functional safety for ISO 26262."

Technology components for Synopsys' unified functional safety verification solution include:

- VC Functional Safety Manager, a high-quality, scalable, and distributed FMEDA automation tool delivering the highest productivity through a FMEA/FMEDA and unified fault campaign process.
- Synopsys TestMAX FuSa to perform early functional safety analysis at RTL- or gate-level and identify candidates for TMR and DCLS redundancy.
- Z01X™ fault simulator for fast and proven digital fault simulation.
- VC Formal™ FuSa App to accelerate fault classification through application of formal filtering.
- Synopsys TestMax CustomFault™ for high-performance analog and mixed-signal fault simulation for full-chip functional safety and test coverage analysis.
- ZeBu® Server, the industry's fastest emulator, to perform fault emulation for long software-rich tests.
- Verdi® Fault Analysis for debug, planning, and coverage, including integration with industry-leading requirement tracking tools.
- Certitude® functional qualification to demonstrate verification flow robustness in support of ISO 26262 Part 8-9

assessments.

"Synopsys collaborates with automotive semiconductor market leaders to deploy the most comprehensive functional safety verification solution for ISO 26262 compliance and certification," said Vikas Gautam, vice president of engineering in the Synopsys Verification Group. "We are uniquely positioned to deliver the most comprehensive unified solution with FMEA/FMEDA automation, scalable verification engines, safety verification expertise, and certified technologies that enables our customers to accelerate their ISO 26262 deliverables."

Availability

The Synopsys Unified Functional Safety Verification Solution and VC Functional Safety Manager are available today for select customer engagements.

Additional Resources

For more information on Synopsys Unified Functional Safety Solution, please visit:
https://www.synopsys.com/verification/solutions/automotive/automotive-safety-verification-for-iso-26262.html

For more information on VC Functional Safety Manager, please visit:https://www.synopsys.com/verification/vc-functional-safety-manager.html

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

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