

Synopsys expands collaboration with Arm to accelerate development of software-defined vehicles

09-Jun-2025 13:36 GMT

IHS Markit

S&P Global

Supply Chain and Technology, Automotive

Synopsys partners with industry leaders to address SDV challenges, offering tools for real-time computing, safety and cybersecurity

According to Synopsys' blog post on June 4, Synopsys has expanded its long-standing collaboration with Arm to support the automotive industry's rapid transition to software-defined vehicles (SDVs). The partnership focuses on addressing the growing demand for smarter, AI-powered in-car experiences while tackling the rising complexity, cost and development challenges faced by automakers.



Source: Getty Images/PeopleImages

As vehicles become increasingly reliant on advanced computing capabilities, current architectures struggle to meet the real-time, multimodal demands of modern automotive systems. To overcome this, Synopsys and Arm are cooptimizing their technologies — combining Synopsys' silicon-to-systems expertise with Arm's new Zena Compute Subsystem (CSS), the first-generation CSS designed specifically for automotive use.

This collaboration aims to accelerate the development of SDV architectures through several key innovations:

- **Electronics digital twins (eDTs):** Synopsys is enabling early architecture exploration and performance prediction using its Platform Architect and Virtualizer Development Kits for Arm's Zena CSS. This allows developers to test and validate software in virtual environments, reducing reliance on physical hardware and helping deliver software faster and more reliably.
- **Cloud-to-car software deployment:** The introduction of Virtualizer Native Execution enables automotive applications to be designed and tested on Arm-based server CPUs in the cloud, achieving speeds nearly 100 times faster than traditional simulators. This approach streamlines SDV development by enabling real-time software testing and debugging without emulation.
- **Functional safety and cybersecurity compliance:** Synopsys' AI-driven EDA tools, combined with its ISO 26262 and ISO/SAE 21434-compliant IP portfolio, support stringent automotive safety and security requirements. Its solutions also include ASIL-compliant IP that complements Arm's Automotive Enhanced IP and Zena CSS for flexible and interoperable system designs.
- **Real-time monitoring and life-cycle management:** Synopsys also offers Silicon Lifecycle Management IP, allowing original equipment manufacturers to monitor real-time metrics such as voltage, temperature and aging, enabling predictive maintenance and enhancing the longevity of vehicle systems.

By integrating their respective strengths, Synopsys and Arm aim to streamline hardware-software codesign, reduce time to market, and ease the complexity of building and maintaining SDVs. This collaboration opens new opportunities for OEMs and tier 1 suppliers to deliver differentiated, safer and more sustainable vehicles that meet future mobility demands.

This content may be AI-assisted and is composed, reviewed, edited and approved by S&P Global.

CONTACTS

The Americas

+1 877 863 1306

Europe, Middle East & Africa

+44 20 7176 1234

Asia-Pacific

+852 2533 3565

www.spglobal.com/mobility

Copyright © 2025 S&P Global Inc. All rights reserved.

These materials, including any software, data, processing technology, index data, ratings, credit-related analysis, research, model, software or other application or output described herein, or any part thereof (collectively the “Property”) constitute the proprietary and confidential information of S&P Global Inc its affiliates (each and together “S&P Global”) and/or its third party provider licensors. S&P Global on behalf of itself and its third-party licensors reserves all rights in and to the Property. These materials have been prepared solely for information purposes based upon information generally available to the public and from sources believed to be reliable.

Any copying, reproduction, reverse-engineering, modification, distribution, transmission or disclosure of the Property, in any form or by any means, is strictly prohibited without the prior written consent of S&P Global. The Property shall not be used for any unauthorized or unlawful purposes. S&P Global’s opinions, statements, estimates, projections, quotes and credit-related and other analyses are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security, and there is no obligation on S&P Global to update the foregoing or any other element of the Property. S&P Global may provide index data. Direct investment in an index is not possible. Exposure to an asset class represented by an index is available through investable instruments based on that index. The Property and its composition and content are subject to change without notice.

THE PROPERTY IS PROVIDED ON AN “AS IS” BASIS. NEITHER S&P GLOBAL NOR ANY THIRD PARTY PROVIDERS (TOGETHER, “S&P GLOBAL PARTIES”) MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE PROPERTY’S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE PROPERTY WILL OPERATE IN ANY SOFTWARE OR HARDWARE CONFIGURATION, NOR ANY WARRANTIES, EXPRESS OR IMPLIED, AS TO ITS ACCURACY, AVAILABILITY, COMPLETENESS OR TIMELINESS, OR TO THE RESULTS TO BE OBTAINED FROM THE USE OF THE PROPERTY. S&P GLOBAL PARTIES SHALL NOT IN ANY WAY BE LIABLE TO ANY RECIPIENT FOR ANY INACCURACIES, ERRORS OR OMISSIONS REGARDLESS OF THE CAUSE. Without limiting the foregoing, S&P Global Parties shall have no liability whatsoever to any recipient, whether in contract, in tort (including negligence), under warranty, under statute or otherwise, in respect of any loss or damage suffered by any recipient as a result of or in connection with the Property, or any course of action determined, by it or any third party, whether or not based on or relating to the Property. In no event shall S&P Global be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees or losses (including without limitation lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Property even if advised of the possibility of such damages. The Property should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions.

The S&P Global logo is a registered trademark of S&P Global, and the trademarks of S&P Global used within this document or materials are protected by international laws. Any other names may be trademarks of their respective owners.

The inclusion of a link to an external website by S&P Global should not be understood to be an endorsement of that website or the website’s owners (or their products/services). S&P Global is not responsible for either the content or output of external websites. S&P Global keeps certain activities of its divisions separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions of S&P Global may have information that is not available to other S&P Global divisions. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process. S&P Global may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P Global reserves the right to disseminate its opinions and analyses. S&P Global Ratings’ public ratings and analyses are made available on its sites, www.spglobal.com/ratings (free of charge) and www.capitaliq.com (subscription), and may be distributed through other means, including via S&P Global publications and third party redistributors.