



CHASSIS: European mobility, semiconductor, and software heavyweights team up with research in joint initiative for automotive chiplet technology

Arteris, Axelera AI, BMW Group, Bosch, CEA, CHIPS-IT, Fraunhofer, imec, Infineon, Menta, NXP, Renault/Ampere, Stellantis-CRF, Siemens, Tenstorrent, TTTech-Auto, and Valeo unite to drive software-defined mobility forward

- ▶ Chiplet-based Hardware Architectures for Software-Defined Vehicles (CHASSIS): a Bosch-led collaboration between major European OEMs (BMW Group, Renault/Ampere, Stellantis), automotive suppliers (Valeo), semiconductor companies (Arteris, Axelera AI, Bosch, Infineon, Menta, NXP, Tenstorrent), EDA technology providers (Siemens), software providers (TTTech-Auto), and research entities (CEA, CHIPS-IT, Fraunhofer, imec)
- ▶ CHASSIS aims to create scalable, high-performance chiplet platforms for software-defined vehicles (SDVs).
- ▶ Chiplet technology will make it possible to overcome the limitations of traditional monolithic SoCs and redefine how automotive electronics are developed, integrated, and deployed.

With CHASSIS, leading innovators from Europe's mobility, semiconductor, and software industries are joining forces with prominent research institutions to accelerate the development, standardization, and industrialization of automotive chiplet technology for software-defined mobility. The three-year international research program combines the expert knowledge and innovative strength of 18 members, which include major European OEMs (BMW Group, Renault/Ampere, Stellantis), automotive suppliers (Valeo), semiconductor companies (Arteris, Axelera AI, Bosch, Infineon, Menta, NXP, Tenstorrent), EDA technology providers (Siemens), software providers (TTTech-Auto), and research entities (CEA, CHIPS-IT, imec, and two Fraunhofer institutes as key players in the Research Fab Microelectronics Germany (FMD) and the European APECS pilot line). Spread across six countries, the CHASSIS partners will collaborate closely across borders to establish an open chiplet ecosystem, with Bosch coordinating the project.

Chiplets: a modular solution for flexible, scalable computing power

As vehicles become increasingly software-driven, they require far greater computing power and flexibility. Traditional monolithic System-on-Chip (SoC) designs are reaching their technical limits, as combining many functions on a single chip makes development more complex and expensive. Chiplets – a modular alternative to single-chip approaches – offer a solution to this challenge. They divide computing tasks across several smaller, specialized chips that can be combined as needed. This modular structure makes it possible to design vehicle electronics based on functional needs rather than hardware limitations. Chiplet technology will make it possible to overcome the limitations of traditional monolithic SoCs and redefine how automotive electronics are developed, integrated, and deployed.

CHASSIS: the coordinated European initiative

CHASSIS is the first Europe-based initiative toward creating an open chiplet platform for automotive applications. “The CHASSIS project unites unparalleled expertise from industry and research, with all project partners sharing the vision of a more modular, secure, and resilient future for automotive semiconductors. Our collective efforts will not only drive technological breakthroughs but also strengthen Europe’s position at the forefront of software-defined mobility and semiconductor technology,” says Thomas Schamm, Bosch spokesperson for CHASSIS. The project is supported by the Chips Joint Undertaking and its members, including top-up funding by France, Germany, the Netherlands, and the United Kingdom.

Chiplet platform designed for next-generation automotive applications

Unlocking the full potential of chiplet technology relies on standardized interfaces and chiplet architectures. This is where the strength of a collaborative approach like CHASSIS comes into play: the initiative aims to introduce an open chiplet-based platform designed specifically for automotive use, providing the flexibility, scalability, and upgradeability that the next generation of vehicles demands. This will also foster competitive innovation and open up the high-performance compute market to multiple vendors, driving competition both in terms of pricing and technology. “What CHASSIS wants to achieve is only possible by the shared efforts of all partners. In the end, the automotive industry will benefit from the open chiplet ecosystem on a global level,” says Thomas Schamm.

CHASSIS stands for Chiplet-based Hardware Architectures for Software-Defined Vehicles. The three-year, Europe-based research project focuses on automotive chiplet technology. The project members include 18 leading automotive, semiconductor, and software innovators, as well as prominent research entities: Arteris, Axelera AI, BMW Group, CEA, CHIPS-IT, Fraunhofer, imec, Infineon, Menta, NXP, Renault/Ampere, Stellantis-CRF, Siemens, Tenstorrent, TTTech-Auto, Valeo, and Bosch as project coordinator. The project aims to establish an open chiplet ecosystem that will accelerate the development, standardization, and industrialization of secure and scalable chiplet technology for software-defined mobility. The project is supported by the Chips Joint Undertaking and its members, including top-up funding by France, Germany, the Netherlands and the United Kingdom. Additional information on CHASSIS is available online at www.automotive-chiplets.org