



Bosch teams up with Microsoft to develop software-defined vehicle platform for seamless integration between cars and cloud

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Collaboration accelerates the development of “software-defined vehicles”

- ▶ Software development to be faster and easier throughout the lifetime of the vehicle.
- ▶ Collaboration brings together automotive and cloud computing expertise to shape the next generation of vehicle software.

Stuttgart and Munich, Germany – Bosch teams up with Microsoft to develop a software platform to seamlessly connect cars to the cloud. The goal of this collaboration is to simplify and accelerate the development and deployment of vehicle software throughout a car’s lifetime in accordance with automotive quality standards. The new platform, which will be based on Microsoft Azure and incorporate software modules from Bosch, will enable software to be developed and downloaded to the control units and vehicle computers. A further focus of the collaboration will be on the development of tools that increase efficiency in the software development process. This in turn will drive innovation and reduce development costs for vehicle software within and across organizations. For drivers, the platform will mean quicker access to new functions and digital services. The collaboration between Bosch and Microsoft combines the wealth of software, electronics, and systems expertise of the world’s leading automotive supplier with Microsoft’s know-how in software engineering and cloud computing. Both companies intend to make the new software platform available for first vehicle prototypes by the end of 2021.

“Bosch already securely updates car software over the air today. With the comprehensive platform for software-defined cars, we want to further empower automakers to develop new functions and get them on the road faster,” says Dr. Markus Heyn, member of the board of management of Robert Bosch GmbH.

“Our collaboration with Bosch brings together the expertise of one of the world’s leading automotive suppliers with the power of the Microsoft cloud, AI and GitHub,” says Scott Guthrie, executive vice president, Cloud + AI, Microsoft. “With software quickly becoming a key differentiator in the automotive industry, our ambition is to help businesses accelerate the delivery of unique mobility services across passenger cars and commercial fleets at scale.”

Developing the automotive future together

Software will play an increasingly important role in future vehicle generations. New trends such as electromobility, automated driving, and modern mobility services would not be possible without it. This will also require more frequent updates and upgrades in the future. However, stringent safety requirements throughout the vehicle’s lifetime make wireless software updates and digital services for cars very complex. The wide range of different series and models makes things even more challenging. The collaboration will benefit from Bosch’s deep understanding of electrical and electronic architectures, control units, and vehicle computers, which is necessary for over-the-air vehicle updates. In addition, the company will contribute its expertise as well as software-based products and development tools for cars. This includes the basic software and middleware for vehicle computers and control units, as well as cloud-based software modules to bring over-the-air updates to entire vehicle fleets. “Having a comprehensive software platform from the vehicle to the cloud will reduce the complexity of the software development and the vehicle system integration. In this way we will create the conditions for wireless updates to work just as smoothly and conveniently in vehicles as they do in smartphones,” Heyn says. The pre-integrated platform will greatly reduce the complexity of over-the-air updates, which help ensure that a vehicle’s software is always up to date, thanks to the fact that the software architectures of vehicles and the cloud will now fit together seamlessly.

New software services for developers

Bosch and Microsoft also plan to enrich existing developer tools that will enable automakers and suppliers to simplify and accelerate their own software development, while adapting to the unique challenges in the automotive industry. The companies also plan to use GitHub’s fully integrated enterprise platform and to open-source important parts of the new software platform on GitHub.com to encourage code re-use and best practice sharing across the industry.

Press photographs: #bd2cd688, #1c61f59a, #3071535

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About Bosch:

Mobility Solutions is the largest Bosch Group business sector. According to preliminary figures, its 2020 sales came to 42.3 billion euros, or 59 percent of total group sales. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector pursues a vision of mobility that is safe, sustainable, and exciting, and combines the group's expertise in the domains of personalization, automation, electrification, and connectivity. For its customers, the outcome is integrated mobility solutions. The business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

Having established a regional presence in 1906 in North America, the Bosch Group employs 34,700 associates in more than 100 locations, as of December 31, 2020. According to preliminary figures, Bosch generated consolidated sales of \$13.1 billion in the U.S., Canada and Mexico. For more information, visit www.bosch.us, www.bosch.ca and www.bosch.mx.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 394,500 associates worldwide (as of December 31, 2020). According to preliminary figures, the company generated sales of \$87.1 billion in 2020. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 126 locations across the globe, Bosch employs some 73,000 associates in research and development, as well as roughly 30,000 software engineers.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, <https://twitter.com/BoschPress>

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About Microsoft:

(Nasdaq "MSFT" @microsoft) enables digital transformation for the era of an intelligent cloud and an intelligent edge. Its mission is to empower every person and every organization on the planet to achieve more.