



Annual Press Conference 2017 in Tokyo **Bosch achieved good progress with electrification, automation and connectivity while expanding into a new business field**

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- ▶ Business development: Sales in Japan for 2016 of 267 billion yen, global sales to Japanese auto makers* up six percent year-on-year
- ▶ Electrification: Series production of 48V hybrid system for Japanese auto makers in 2019
- ▶ Automation: Further strengthen system development capabilities for automated driving and advanced technologies for the Japanese market
- ▶ Connectivity: Start providing wireless updates of onboard firmware for Japanese auto makers in 2019
- ▶ Expansion: Entering a new business field with the AI-based smart agriculture solution "Plantect™"

Tokyo – The Bosch Group ended its 2016 fiscal year in Japan with consolidated sales of around 267 billion yen (approx. 2.2 billion euros), remaining at a similar level compared to the previous year. For the current year, the leading global supplier of technology and services is forecasting a growth between 3 and 5 percent in Japan. “We have seen a good start for our business in 2017 in Japan. Overall, we expect the increasing demand for automotive infotainment systems and solutions for motorcycles to benefit our development this year”, said Dr. Udo Wolz, president and representative director of Bosch Corporation Japan. Wolz also emphasized opportunities the Internet of Things offers for tapping into new business fields. The number of associates employed at Bosch in Japan stood at more than 6,600 as of December 31, 2016 – and is expected to increase slightly in 2017.

Series projects in the fields of electrification, automation, connectivity

On a worldwide basis, Bosch sales to Japanese auto makers* grew by 6 percent in the previous year and are expected to grow steadily in 2017 as well. In the past year, Bosch acquired several series production projects in Japan for solutions in its main focus areas of electrification, automation and connectivity of mobility. “We are making steady progress and are able to propose innovative

solutions for these three mega trends of mobility to our Japanese customers. Therefore, we are focused on expanding our businesses in these fields even further" said Udo Wolz.

Electrification: Solutions for electrification expand steadily

In the field of electrification, Bosch has acquired multiple 48 V hybrid system projects for Japanese auto makers, and plans to roll out series production from 2019 onward. 48 V hybrid systems are one of Bosch's electrification solutions designed to help to improve fuel efficiency at a more affordable price than high-voltage systems. The 48 V hybrid system is an effective bridge to further electrification, however Bosch also provides a range of electrification solutions. From beginning of 2018, Bosch will establish the new Powertrain Solutions Division combining the existing Gasoline Systems Division, the Diesel Systems Division and a business unit specializing in eMobility. The new organization will provide all technologies from components to modules to entire systems. Furthermore, in fuel cell systems, Bosch established a FCEV (Fuel Cell Electric Vehicle) Project Promotion Office in Japan at the beginning of 2017 as an organization dedicated to fuel cell systems.

Automation: Strengthening development capabilities for automated driving

Bosch started public road testing of automated driving in Japan in 2015. In 2016, the company established a new organization called Engineering System Development Chassis Systems Japan, to further strengthen its system development capabilities for advanced technologies including automated driving. This organization has a cross-functional role that supersedes the boundaries between existing business units, and is engaged in comprehensive systems development. At the new organization, currently over 60 engineers with various expertise and experience are engaged in development. It enables the company to provide Japanese auto makers with a wider development support. At the new organization, Bosch is engaging in bringing connectivity into automated driving. In steering systems, which are one of the key elements in automated driving, a formerly joint company with ZF that entered the Bosch Group in January 2015 is steadily expanding the business in Japan as the Group's internal Automotive Steering Division. The current number of associates in the division has increased three-fold since it joined the group, and in summer 2017, it will start operations at a new test center. Looking ahead, Bosch plans to expand business even further to response to growing needs for automation, and to strengthen collaboration with the Engineering System Development Chassis Systems Japan.

Connectivity: Further expansion of solutions for connected cars

Connected cars are a remarkable growth field, with a market size that is expected to increase by nearly 25 percent annually over the next five years. One of the advantages of connected cars is the ability to perform wireless updates of vehicle software and firmware (FOTA=Firmware update over the air). FOTA enables wireless addition and updating not only of infotainment, but also functions involved in control of the car, such as automated driving. Bosch is one of the few suppliers in the world able to provide a full service for FOTA, from gateway computers that function as on-board communications controllers during updates to cyber security measures. In 2019, Bosch plans to begin offering FOTA solutions for series production cars of Japanese auto makers.

Connectivity will provide benefits not only for driving, it will also revolutionize parking. Connected parking incorporates connectivity technologies into parking to relieve drivers from the stress of searching for a parking space. It offers convenient services. [Active Parking Lot Management](#) can search for open spaces in a parking garage, then check and reserve one in real time. [Automated Valet Parking](#) allows the driver to alight from the vehicle at the entrance to the parking garage then use a smart phone to direct the car to enter a parking space automatically or conversely to call the vehicle out. [Community-Based Parking](#) enables the vehicle to detect open car parking spaces on the road side while it is driving and provide the open car parking space information to users by generating a parking map in real time. Bosch is currently undertaking pilot projects in Germany and actively examining the possibility to enter the Japanese market in the future.

Bosch started providing eCall (emergency call service) in Japan at the end of 2016. It transmits a notification to Bosch's services center automatically if the car detects the impact of a collision. Bosch provides both the necessary system hardware and the telecommunication service. Bosch is an eCall market leader with operational experience in over 40 countries around the world including Japan. Currently, Bosch provides in Japan only eCall, but in future it plans to examine expanding its services with concierge services, road side assistance, and so forth.

Expanding business through IoT: Smart agriculture solutions utilizing AI

Bosch aims to be a leading supplier in IoT for all business domains, not only mobility. The key to this is [artificial intelligence](#) (AI). Over the next five years, the Bosch Group will be investing 300 million euros in its own center for artificial intelligence, which was established in 2017. Global Head Bosch Center for Artificial Intelligence Christoph Peylo, who participated in the annual press conference in Japan, said: "The center's objective is to enhance expertise in the field of AI. With AI, Bosch can harness the opportunities provided by the IoT.

Bosch will leverage AI to further expand its footprint in the IoT industry going forward." He also introduced smart agriculture solutions, which Bosch will begin selling in Japan in 2017, as an example of a new service making use of AI.

In 2017, the company plans to start provision of its smart agriculture solution Plantect™. It has two functions – environment monitoring for greenhouse cultivation and disease predication utilizing AI. The disease prediction function sends real time data from each greenhouse into a cloud, where a proprietary algorithm developed by Bosch predicts disease damage. The algorithm was developed using Bosch's strength in AI technologies and data from over 100 greenhouses. It achieved a prediction accuracy of 92 percent when tested on past data. One of the issues to be addressed in agriculture is the unstable revenue of farmers due to fluctuations in harvests and market prices. However, Bosch aims to help solve this issue by providing AI-based solutions for prediction of disease, which has a major influence on harvest yields. Currently, the disease prediction function is limited to greenhouse tomatoes; however, Bosch plans to develop it rapidly for strawberries, cucumbers, and flowers and ornamentals. Please refer to [the press release \(link to the Plantect press release will be added\)](#) for further details about Plantect.

Bosch Group: Strategy and business outlook for 2017

For 2017, in light of a subdued economic outlook and geopolitical uncertainty, Bosch aims to achieve sales growth of between three and five percent. And despite still heavy upfront investments in safeguarding the company's future, result is set to rise. "Business success today gives us the leeway to shape tomorrow's world," said Dr. Volkmar Denner, the chairman of the Bosch board of management. "As an innovation leader, we are shaping and driving transformation," Denner added. The focal points of this transformation are changes in the [mobility sphere](#) and [IoT connectivity](#). By 2020, all Bosch's new electronic products will feature connectivity.

** Japanese auto makers include motorcycle, agricultural and construction machinery manufacturers*

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Bosch in Japan is currently represented in the country by Bosch Corporation, Bosch Rexroth Corporation, Bosch Packaging Technology K.K. and other affiliates. Bosch Corporation is responsible for the development, manufacturing, sales and services of automotive original equipment, automotive aftermarket products and power tools. Bosch Engineering K.K. provides engineering services, such as development and application for automotive systems.

ETAS K.K. develops and provides engineering of development support tools of electrical control units. Bosch Rexroth Corporation develops and manufactures hydraulics, FA module components and other systems which contribute to industrial technologies. Bosch Packaging Technology K.K. provides processing, packaging and inspection technology. Bosch Security Systems Ltd. provides security and communication products and solutions to help secure the safety of lives, buildings and properties, and is also a supplier of professional sound systems. In 2016, Bosch Japan achieved sales to third party of some 267 billion yen and employed approximately 6,600 associates.

Additional information is available online at

<http://www.bosch.co.jp> Bosch Japan Website (Japanese)

<https://twitter.com/BoschJapan> Bosch Japan Twitter (Japanese)

<https://www.facebook.com/bosch.co.jp> Bosch Japan facebook (Japanese and English)

<https://www.youtube.com/boschjp> Bosch Japan Youtube (Japanese)

The Bosch Group is a leading global supplier of technology and services. It employs roughly 390,000 associates worldwide (as of December 31, 2016). The company generated sales of 73.1 billion euros in 2016. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. 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 deliver innovations for a connected life. 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 subsidiaries and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 120 locations across the globe, Bosch employs some 59,000 associates in research and development.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse.