# Press Release

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## Bosch starts first public road testing in Japan of Advanced Rider Assistance System for motorcycles

Providing a safe and comfortable riding environment for motorcycle riders in Japan

- First public road testing in Japan of advanced rider assistance system for motorcycles started in March 2019
- Development of systems suited to Japan's roading environment
- Advanced rider assistance system to enter mass production in 2020

Tokyo — Bosch started public road trial testing of an advanced rider assistance system in Japan in March 2019. This is the first police-notified public road testing of an advanced rider assistance system in Japan. The development of a system based on Japan's road traffic environment aims to provide a safe and comfortable riding environment for motorcyclists in Japan, and to support global motorcycle manufacturers in meeting the needs of the Japanese market.

**Bosch's Rider Assistance Technologies for Motorcycles based on ADAS Technology for Automobiles**

Motorcyclists are exposed to risks in road traffic. In Japan, the risk of fatal accidents is 13 times higher*[1] for motorcyclists than for automobile drivers. To provide a safe riding environment for motorcyclists, Bosch has provided products and technologies for motorcycle for over two decades since it launched the first generation of antilock brake system (ABS) for motorcycles in 1995. Since then, Bosch has led the market, especially in the field of assistance systems.

Bosch has developed technologies that contribute to improved motorcycle safety based on three steps. The first is improving motorcycle stability with ABS and motorcycle stability control (MSC). ABS is now mandatory for new vehicles in countries and regions such as Japan, the EU, India, Taiwan, and Brazil (in the EU, it is also mandatory on continued-production vehicles), and is to be made mandatory for new vehicles in China and Australia during 2019. The second step is advanced rider assistance systems that use surround sensing technology, which are the target for the current round of public road testing. Finally, the third

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step is network connection between motorcycles and their environment, such as car-to-car communication between motorcycles and cars (B2V) and eCall (automatic emergency call system)
The Advanced Rider Assistance System is a package of safe riding assistance systems that improve safety and rider comfort for motorcyclists, including adaptive cruise control (ACC), collision warning system, and blind-spot recognition. The system was developed based on automobile advanced driver assistance system (ADAS) technologies using radar. Radar enables the system to accurately comprehend the situation around the motorcycle periphery, making functions such as ACC possible. According to an accident survey report by Bosch, fitting motorcycles with a radar-based safe riding assistance systems is estimated to prevent one in seven motorcycle accidents. This is because the electronically controlled advanced rider assistance system is able to monitor the periphery constantly and respond more rapidly than a human can. Bosch's advanced rider assistance system will enter mass production in 2020, and is to be fitted first in certain Ducati and KTM models.

**System Development for the Japanese Market**
This round of public road testing is to be conducted on highways in Tokyo, Kanagawa, and Tochigi Prefectures. Unique features of Japan's roading environment include narrow roads and many sources of external interference that could impact radar detection, such as noise barriers and guard rails. Japanese roads are also noted for including a large number of tunnels and bends to cope with the mountainous terrain. By developing systems that can cope with this environment, Bosch aims to enable provision of safer and more comfortable riding environments for motorcyclists in Japan, as well as support for global motorcycle manufacturers who sell automobiles worldwide in meeting the needs of the Japanese market. Furthermore, by accumulating knowledge and experience of public road testing in Japan, Bosch ultimately aims to establish systems that can respond accurately to the needs of Japanese motorcycle manufacturers. Japan occupies an important position in the global motorcycle industry, with a concentration of motorcycle market leading motorcycle manufacturers, who represent around a 50 %*[2] share of the global market. To support Japan's motorcycle manufacturers, Bosch has established the Global headquarters for its motorcycle business in Japan, along with the development site for the assistance system platform. Geoff Liersch, who heads the Two-Wheeler and Powersports business unit says "We expect public road testing of the advanced rider assistance system in Japan to enable Bosch to contribute even further to motorcyclists in Japan and motorcycle manufacturers around the world."

## Bosch's Advanced Rider Assistance System

**ACC adaptive cruise control**

Riding in heavy traffic and maintaining the correct distance to the vehicle in front takes a great deal of concentration and is strenuous over longer periods. ACC adjusts the vehicle speed to the flow of traffic and maintains the necessary safe following distance. This can effectively prevent rear-end collisions caused by insufficient distance to the vehicle in front. And not only does ACC offer riders more convenience, it also allows them to concentrate more on the road, particularly in high-density traffic.

**Collision warning system**

In road traffic, even the briefest lapse in concentration can have serious consequences. Bosch has developed a collision warning system for motorcycles to reduce the risk of a rear-end collision or to mitigate its consequences. If the system detects that another vehicle is dangerously close and the rider does not react to the situation, it warns the rider by way of an acoustic, optical or haptic signal.

**Blind-spot detection**

This system keeps a lookout in all directions to help motorcyclists change lanes safely.  A radar sensor serves as the blind-spot detection system's electronic eye. Whenever there is a vehicle in the rider's blind spot, the technology warns them by way of an optical signal – for example, in the rear-view mirror.

*[1] Japan NPA Annual Report 2010, Ministry of Internal Affairs and Communications

*[2] Motorcycles Industry Profile 2014, Mintel

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