Connected car – driver assistance sensors
get connected

ADAS Sensorik geht online – Die Zukunft
des automatisierten Fahrens ist vernetzt

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1 Introduction

In future we will see more and more connected cars, which means that cars have a direct mobile communication or WLAN link to the cloud, to traffic infrastructure or even between each other, based on secure connections. First legislation initiatives, e.g. in China, already require continuous supervision of drivetrain systems based on a cloud network. New business models and extended chains of economic value will change and create new markets. The fast growing connected car market is driven by increased availability of high-speed wireless networks such as 5G and mature cloud computing technology, but also by a broad range of new functions and services in the areas of navigation, entertainment, mobility management and home integration.

Bosch considers the car as part of the internet of things, which means the car does not only extensively use data from the outside but also continuously provides data back to the internet which can be shared with others. In this paper we focus on the usage and benefits of connectivity for driver assistance and automated driving applications. We focus on major challenges in the field of automated driving, where connectivity is the enabler for effective solutions; the development and validation of automated driving functions, the generation as well as the updating of HD maps, and finally new services based on the availability of ADAS sensor data in the cloud such as community-based parking.

2 Connected Development

The identified steps towards automated driving show that there are still major challenges to overcome in the next years. Beside highly robust 360° surround sensing, fail-safe operational system architecture, and security and reliability with regard to technical failure, climbing up the automation levels also requires reliable but still affordable validation procedures for functional performance. Latter is one area where connectivity will play a decisive role.

But this is only the beginning of the automotive connectivity revolution. We expect that latest by the second half of the next decade the whole automotive development and field operation chain will be supported by connectivity solutions.

Bosch is prepared for this technological journey. We started already with connectivity based solutions which make the development more efficient and will continue increasing step by step the connection of driver assistance sensors and systems with the cloud.

1 High Definition