Press release

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Sensors for increased safety in vehicles
New generation of Bosch inertial sensors
SMI7xy combines measurement of yaw rate and acceleration

- Broad range of applications – from ESP® to rollover detection
- Can be used in applications up to ASIL D in accordance with ISO 26262
- Optimized for robust operation and extremely space-saving

Bosch has launched a new generation of inertial sensors. The SMI7xy sensor platform is designed specifically for use in active and passive safety systems and in driver assistance systems. These new sensors are very robust and take up very little room, as they are supplied in a compact BGA housing that measures just 7x7x1.5 mm3.

The SMI7xy platform comprises four types of sensors in two categories: type SMI720 and type SMI740 sensors for basic applications, and type SMI700 and type SMI710 sensors for more demanding applications. Depending on their final application, the sensors can be used up to ASIL D (SMI720 up to ASIL C) in accordance with the ISO 26262 safety standard. All models feature an integrated safety controller; the SMI700 and SMI710 also offer a robust offset stability. When outputting data via their serial peripheral interface (SPI), the sensors use the two most widespread versions of SPI protocol.

Particularly suited to demanding vehicle dynamics applications
The SMI700's housing contains a yaw-rate sensor (z axis) and a 2-axis acceleration sensor (x and y axis). This sensor can optionally register high accelerations of up to 35 g. In addition to its SPI, the SMI700 comes with a PSI5 interface and a CAN interface – two standard data output interfaces in automotive electronics. These characteristics make the SMI700 the ideal sensor for use in ESP® systems and in demanding vehicle dynamics

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applications such as hill hold control, adaptive cruise control, and active front steering.

The SMI710 also combines a yaw-rate sensor (x axis) with a 2-axis acceleration sensor (this time y and z axis). It features a PSI5 interface and a CAN interface. This means it is capable of detecting a rollover and meets the requirements for use in demanding driver assistance functions such as roll and pitch stability programs.

Rollover detection and ESP®
The SMI720 sensor is designed specifically for rollover detection. Its housing contains a yaw-rate sensor (x axis) and a 1-axis acceleration sensor (z axis). Meanwhile the SMI740 has a yaw-rate sensor (z axis) and a 2-axis acceleration sensor (x and y axis). Since the SMI740 is designed according to standard ESP® specifications, it is tailored to basic vehicle dynamics control.

Samples of the SMI7xy are already available.

Background to MEMS technology
Bosch has been at the forefront of MEMS (microelectromechanical systems) technology since the very beginning. Since the start of production in 1995, the company has manufactured well in excess of three billion MEMS sensors, with production volumes hitting new highs year after year. In 2013, more than a billion sensors rolled off the production lines at the company's Reutlingen plant. The range includes sensors for measuring pressure, acceleration, humidity, temperature, yaw rate, inertial, and geomagnetic field, as well as MEMS microphones for a wide range of applications in the consumer electronics and automotive industries. More information on Bosch sensors is available online at www.bosch-sensors.com.

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Automotive Technology is the largest Bosch Group business sector. According to preliminary figures, its 2013 sales came to 30.7 billion euros, or 66 percent of total group sales. This makes the Bosch Group one of the leading automotive suppliers (note: due to a change in the legal rules governing consolidation, the 2013 figures can only be compared to a limited extent with the 2012 figures). Automotive Technology largely operates in the following areas: injection technology for internal-combustion engines, alternative powertrain concepts, efficient and networked powertrain peripherals, systems for active and passive driving safety, assistance and comfort functions, technology for user-friendly infotainment as well as car-to-car and Car2X communication, and concepts, technology, and service for the automotive aftermarket. Bosch has been responsible for important automotive innovations, such as electronic engine management, the ESP® anti-skid system, and common-rail diesel technology.

The Bosch Group is a leading global supplier of technology and services. According to preliminary figures, its roughly 281,000 associates generated sales of 46.4 billion euros in 2013 (Note: due to a change in the legal rules governing consolidation, the 2013 figures can only be compared to a limited extent with the 2012 figures). Its operations are divided into four business sectors: Automotive Technology, Industrial Technology, Consumer Goods, and Energy and Building Technology. The Bosch Group comprises Robert Bosch GmbH and its more than 360 subsidiaries and regional companies in some 50 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. In 2013, Bosch applied for some 5,000 patents worldwide. The Bosch Group's products and services are designed to fascinate, and to improve the quality of life by providing solutions which are both innovative and beneficial. In this way, the company offers technology worldwide that is "Invented for life."

Additional information can be accessed at www.bosch.com, www.bosch-press.com and http://twitter.com/BoschPresse