



CES® 2017: Bosch is showing these smart solutions in Las Vegas

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Connectivity makes everyday life easier and is turning things into partners

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Las Vegas – From **January 5 to January 8, 2017**, **Bosch** is showing how connectivity is turning things into partners, companions, and assistants **at CES® 2017 in Las Vegas**. The global supplier of technology and services is presenting innovative solutions at the trade show in the following domains: **smart home, smart city, connected mobility, Industry 4.0, and sensor technology**. These technologies make everyday life easier, more comfortable, and safer. Bosch can be found in the **Central Hall at booth #14128**.

Smart home: making life at home easier and safer

Bosch Smart home system expanded: The smart home system makes it possible to control connected devices at home via a single app. At CES, Bosch is showing how it has enhanced the system with technologies such as smoke and movement detectors, which can take on additional functions, and the scenario manager. The latter makes the connected home even more intuitive. It also makes users' everyday lives easier. For instance, when they leave the house, users no longer need to check whether the heat, electronic devices, or the lights have been turned off. The scenario manager for the Bosch smart home app

assumes these routine daily tasks and can be easily activated with the tap of a finger.

More safety at home: In addition to this, Bosch is presenting three new solutions for more safety. With the 360° indoor camera and the Eyes outdoor camera, users monitor what's going on at home at all times, regardless of where they are in the world. Thanks to local, encrypted recording, users no longer miss any important events, unless of course they want to. The 360° indoor camera's lens can easily be pushed into the camera's body at the tap of a finger, and this ensures privacy. The Eyes outdoor camera is more than a camera: it also combines light, movement sensors, and an intercom system in a single intelligent device. The Bosch Twinguard, a premium smoke detector with air quality sensor, enhances safety in the home. Thanks to its professional dual ray technology, it detects dangerous situations more reliably, and this prevents false alarms.

A personal assistant for the kitchen: "My kitchen elf" – Mykie for short – is a concept for a personal assistant that serves as a smart companion in the kitchen. It is operated via the user's voice. Mykie listens, answers questions, and helps with everyday chores. For instance, he knows exactly how long the cake still needs to bake in the oven, what's in the refrigerator, or whether the sun will be shining in the afternoon. With the connected Mykie, users can control the entire range of Home Connect household appliances.

Connected power tools: Bosch offers professional tradespeople everything from products to full inventory management systems that can be used to optimize work processes and increase productivity. What is more, owners of connected Bosch power tools can personalize them via an app: They can configure their devices to meet their individual needs and save the settings for future use. Users can also receive information on the status of their tools as well as tips to correct malfunctions, for instance when a device turns itself off due to overheating. In addition to this, the app shows the user how long a device has been in use. In some cases, the app can also be used as a remote control, and this saves tradespeople time.

Smart city: improving quality of life, energy efficiency, and safety

Solutions for the intelligent city: At CES, Bosch is showing solutions in the areas of mobility, energy and building technology, security, and digital city administration. When it comes to mobility, the technologies on display include environmental monitoring systems and connected parking technologies, as well as fleet management, e-mobility, and intermodal transportation solutions. When it comes to energy, virtual power stations, energy efficient heating, hot water, and cooling systems, and energy storage technology are on display. Security

systems include fire protection technologies, access control systems, and video surveillance solutions. For residential buildings, Bosch offers smart home technology and connected household appliances.

Smart technology for new mixed-use communities in San Francisco:

At CES, Bosch is providing a look at how the former sites of a Navy shipyard and the Candlestick Park stadium are being developed into new, innovative waterfront communities: [The San Francisco Shipyard](#) and Candlestick. FivePoint and Bosch technologies are working together to bring connectivity to The SF Shipyard – offering a taste of life in a “smart city,” with solutions for smarter homes, communities, and widespread mobility.

Vivatar: The new Vivatar app is a digital guardian angel for people on the move – for instance when they are on their way home late at night, or when they are doing outdoor sports on rough terrain. Via GPS and a chat function, users can stay in touch with friends and family if they are feeling unsafe when they are out and about. In the event of an emergency, they can get quick help at the tap of a finger through the Bosch emergency service function.

Community-based parking: Especially in urban residential areas, curbside parking spots are in high demand. With community-based parking, Bosch is taking over the search for a parking spot, thus easing the burden on drivers. When a car is driving along the street, ultrasound sensors detect available spots and measure the size of the space between parked cars. The data gathered is then transmitted to a digital street map. High-performance Bosch algorithms assess the plausibility of the data and make forecasts on the parking spot situation. A real-time map is available to cars in the vicinity, and drivers can thus drive directly to available parking spots. Pilot projects in the U.S. are planned for 2017. In cooperation with Mercedes-Benz, Bosch is currently testing the community-based parking concept in metropolitan Stuttgart.

Connected mobility: turning the car into a personal assistant

How will the driving of the future look? Bosch is presenting its vision at CES 2017 with a new concept car. Alongside home and work, connectivity is turning the car into the third living space. With the help of personalized communication between the car and the driver, increasingly high performance and comprehensive services will be safe to operate in the future as well. In addition, automated driving will soon give drivers more time to dedicate to other tasks. For instance, drivers and passengers will be able to use time spent in the car to write emails, or entertain themselves with streamed music or videos. In the new concept car, Bosch is presenting a broad range of innovations, including:

- Face recognition and intelligent personalization: The Driver Monitor Camera makes quick face recognition and personalization possible from the moment the driver is in the car. For instance, the car sets the steering wheel, mirrors, interior temperature, and radio station according to the driver's personal preferences. While on the move, driver drowsiness detection helps enhance safety: if the driver risks falling asleep or is very distracted, the car issues a warning and helps prevent critical situations.
- Haptic feedback with neoSense: Thanks to the touchscreen with haptic feedback, the buttons that appear on the touchscreen feel like real buttons. In many instances, this makes it possible to operate the infotainment system without looking. Drivers can thus keep their eyes on the road, and this improves safety. This technology was honored with a CES Innovation Award in 2016, and has since taken major strides toward series production.
- A crystal-clear display thanks to OLED: With the concept vehicle, OLED (organic light-emitting diode) displays have been integrated into the car's cockpit for the first time. These enable a crystal-clear display.
- Digital exterior mirrors, now also in the car: The mirror cam system is a camera-based solution that replaces both exterior mirrors. The video sensors can be integrated into the vehicle interior, and images are shown on displays close to the A-pillars on the right and left sides of the car. Moreover, the digital technology enables a context-specific display. When a car is on the highway, for instance, the view is concentrated mainly behind the car. In contrast, in city driving, a broader view helps improve safety. Good contrast improves the view when driving at night.
- Communication between the car and the driver: In the future, the human machine interface (HMI) will play an increasingly important role in the car – especially when it comes to automated driving. For instance, it lets the driver know whether automated driving is possible on a specific route. To hand over responsibility for driving to the car, the driver must then press two buttons on the steering wheel for several seconds. During the automated drive, the HMI shows the driver what the car's environmental sensors detect and how much time is left until the driver needs to start driving again.
- Communication between the car and the home: With automated driving, drivers have a greater number of infotainment functions at their disposal via the vehicle's central display than when they are driving themselves. Thanks to the internet connection, drivers can now review upcoming appointments or plan shopping trips, for instance. The smart home app also makes it possible for drivers to operate the awnings at home or adjust the heating. Furthermore, he can check whether there is enough food in the refrigerator. At the touch of a button, the app can transmit the shopping list to the delivery service.
- Communication between the car and the bicycle: Thanks to vehicle-to-vehicle-communication, the cars of the future will be informed of other road users long

before they are in view. Bicycles in particular are easily overlooked in road traffic because they are hidden by buses or trucks. At CES, Bosch is showing a communication link between the new concept car and a bicycle. With it, vehicles can constantly exchange information about their location and direction of travel. This reduces the risk of collision.

- Bosch Integrated Payment Solutions: Bosch developed this ePayment solution, which offers new services via the IoT ecosystem, including a standardized payment function. To enable this, the required agreements have already been signed with many payment systems, including PayPal.

Communication between the car and the workshop: At CES 2017, Bosch is also showing how the connected workshop works in the interplay with web-based services and augmented reality applications. In the future, drivers and workshop operators will be able to plan visits to the workshop more easily, and this will improve work processes when it comes to service.

Retrofittable emergency call service for the car: Bosch is presenting the Retrofit eCall at CES, a retrofittable adapter for the eCall emergency call service. It can easily be placed directly into the cigarette lighter and offers real benefits: An acceleration sensor detects the collision and triggers an emergency call. Via a smartphone app, data on details such as the car's position are transmitted. The severity of the impact is also analyzed, and corresponding measures are automatically initiated. If the collision is only of moderate severity, the control center calls to speak to the driver directly and determine whether a service vehicle or ambulance is required. If the driver fails to answer, an ambulance is alerted immediately.

Firmware updates "over the air" (FOTA): Connected functions and especially highly automated driving call for consistently reliable functioning throughout the vehicle's entire life cycle. This requires software updates that can be carried out via the cloud. Bosch offers the appropriate communication control units and the central gateway computer, while ETAS and ESCRYPT (both parts of the Bosch Group) provide the necessary transmission and encryption technologies. These ensure functional safety and data security.

Industry 4.0: connecting people, machines, and objects in real time

IoT Gateway: With the IoT Gateway, Bosch is bringing the advantages of connected industry to the operators of older machines that still lack the prerequisites of networked production, such as sensors, software, or a connection to the company's IT connection. The connected system combines sensor technology, software, and IoT-enabled industrial management, and thus makes it possible to monitor machine status.

Automatic production assistant (APAS): Bosch is presenting the APAS at CES, which makes flexible and efficient manufacturing possible. It performs strenuous, dangerous, or monotonous tasks and is best used in areas of manufacturing in which close cooperation with human beings is called for. At the trade show, APAS is serving up coffee and cotton candy to visitors at the Bosch booth. Thanks to its sensor skin, the robot detects when people are too close to it and shuts down immediately.

Augmented reality and live streaming in manufacturing: In the maintenance of machines such as the APAS, employees can now also receive the support of new Bosch augmented reality solutions. Digital information on technical details, for instance, enhances live recordings. Without even opening up the digital production assistants, users gain an exact picture of their insides. At CES, a ruptured cable is being simulated. Animations with repair instructions guide the user through the maintenance process step by step. As a result, service employees without expert knowledge can detect and repair errors quickly and reliably. With Bosch video analysis services, employees can visualize manufacturing processes remotely and in real time. These recordings can then be used for data mining purposes, for instance in the long-term analysis of errors that occur sporadically.

Smart sensor technology: Tiny sensors make connectivity possible

MEMS sensors: Tiny Bosch MEMS sensors (Microelectromechanical systems) are in vehicles, smartphones, game consoles, tablets, and countless other devices. They make many applications in consumer and electronics and the car possible. Although they are tiny, they are extremely effective: They help save lives and energy, and they make driving more comfortable. Bosch MEMS sensors are the eyes and ears of millions of electronic devices. At CES 2017, Bosch is showing it a new MEMS sensor for applications in gaming, sports and health.

XDK sensor platform for the development of new IoT solutions: With the XDK sensor platform, Bosch offers a comprehensive hardware and software platform with different types of sensors as well as a Bluetooth and WiFi connection. Components include acceleration and yaw rate sensors, a magnetometer, as well as sensors that measure noise volumes, humidity, air pressure, temperature, and digital light. Companies can use the sensor platform to develop the IoT solutions that best suit their needs. The XDK sensor platform is easily installed and can be adapted to individual applications.

CES Innovation Awards: Four awards for Bosch solutions

Motorcycle solutions honored: Bosch motorcycle solutions were honored with a total of three awards. The integrated connectivity cluster (ICC) driver information system took the prize in the In-Vehicle Audio/Video category and was honored in the Vehicle Intelligence category. The ICC combines all the motorcycle's instrumentation on a single display and makes it possible for riders to link their smartphones with the bike and thus use selected apps. The system automatically adapts the display to current usage. This means the rider is shown only the information needed at that particular moment. Besides the ICC, the lean connectivity unit safety solution was also honored in the Vehicle Intelligence category. It connects the smartphone via Bluetooth to small motorcycles and scooters.

Connected water heater: The Greentherm 9000iSE water heater also received a CES Award. Via an app, the device can easily be turned on and off remotely from a smartphone or tablet. Users can also regulate water temperature or monitor the water heater's operating status. In the event of a malfunction, the heater alerts users on their smartphones.

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EXPERIENCE BOSCH AT CES 2017 in Las Vegas, Nevada, USA: At CES 2017, Bosch is showing how the Internet of Things is getting personal – how things can be turned into partners. Connected technologies enable personal assistance in all areas of life: they improve mobility, shape the cities of the future, make the home intelligent, health care technology more efficient, and make work easier. For the fifth time at CES, Bosch is presenting an expanded portfolio of "Simply.Connected" networked solutions.

BOSCH PRESS CONFERENCE: Wednesday, January 4, 2017, 9:00 am to 9:45 am (local time): with [Dr. Werner Struth, member of the Bosch board of management](#) at Mandalay Bay South Convention Center, Level 2, Mandalay Bay Ballrooms BCD

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BOSCH BOOTH: Thursday to Sunday, January 5-8, 2017 at Central Hall, booth #14128

PANELS WITH BOSCH EXPERTS:

Thursday, January 5, 2017; 11:30 am to 12:30 pm (local time): [Conference track "MEMS & Sensors: Personalizing Consumer Technology", Session "Where](#)

are Consumer Electronics Taking the Sensors Industry?” with Dr. Stefan Finkbeiner, CEO and General Manager, Bosch Sensortec; Venetian, Level 4, Marcelllo 4501

Friday, January 6, 2017; 3:30 pm to 4:30 pm (local time): Conference track “Vehicle Technology”; Session “Redefining the Automotive Infotainment Experience” with Torsten Mlasko, Las Vegas Convention Center N258

The Bosch Group is a leading global supplier of technology and services. It employs roughly 375,000 associates worldwide (as of December 31, 2015). The company generated sales of \$78.3 billion (70.6 billion euros) in 2015. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. 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 some 150 countries. The basis for the company’s future growth is its innovative strength. Bosch employs 55,800 associates in research and development at 118 locations across the globe. 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 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.bosch-press.com, twitter.com/BoschPresse