



**BOSCH**

Invented for life

## Solutions for commercial buildings

[bosch.com/buildings](https://bosch.com/buildings)

Smart. Secure. Sustainable.





## Bosch solutions for commercial buildings





When you choose Bosch as a supplier of products and solutions for commercial buildings, you can be assured of cutting-edge technologies from a global provider. True to our company slogan “Invented for life”, our products and solutions are designed with our customers in mind. As a leading global supplier of technology and services, Bosch understands that professionals need to be able to rely on their industry partners for technical expertise and innovative thinking.

Bosch provides a comprehensive range of products and industrial solutions as well as energy and building solutions for commercial buildings across the world, has a choice of products that are commonplace across commercial-building projects, whether the project requires energy-efficient heating and hot-water systems, innovative and intuitive video-surveillance systems, or the hard-wearing power tools needed for professional installation work.



# All solutions for commercial buildings

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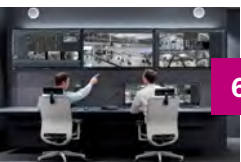
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# Security and life safety

The safety requirements for infrastructures and buildings are increasing worldwide. The goal: People and values are protected as much as possible. Trust the Bosch long-standing expertise in consulting, planning, implementing and operating your individual security and life safety solution.

## Benefits

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- + Minimize risks, maximize security: no matter what your security task looks like, Bosch offers the best solution for every building.
- + Bosch offers comprehensive services and consultancy for monitoring, maintenance, modernization, and operation as well as attractive and flexible rental and operator models.
- + Bosch assists in all project phases and finds therefore the best solution for you: Planning, realization and operation complement each other perfectly, creating maximum security.

Bosch implements special requirements for a safe, economic, and comfortable building and offers a broad spectrum of services for it: from video surveillance, access control, fire-, evacuation-, and speech-alarm systems, robbery and break-in notification systems via networked time and building management systems, up to energy solutions. As an installer, service provider and consultant, Bosch supports in multifaceted challenges and provides customers with networked and intelligent overall solutions for safety and security from a single source. The Bosch experts have specific industry expertise and create individual solutions with future-oriented products and services that always focuses on the customers needs and requirements.



# Fire alarm and voice evacuation systems

The Bosch portfolio covers the most reliable systems that include fire sensors, voice evacuation and control software to quickly locate, detect, verify and to contain fires. The systems are comprehensive, tailor-made solutions for almost any project. They fulfill and even exceed aesthetic standards and market requirements.

The Bosch systems quickly and accurately locate a fire and trigger evacuation. At the same time, they minimize the occurrence of false alarms. The public address system allows the operator to guide occupants to safety, avoiding danger areas. Surveillance cameras can monitor evacuation proceedings and help the authorities coordinate rescue operations. All these systems incorporate high levels of redundancy and can be integrated centrally using the Bosch building integration system to ensure seamless operation under any contingency.

## Benefits

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- + Superior fire protection with intelligent solutions
- + Advanced public address and voice evacuation systems
- + Solutions range from simple installations to highly complex applications





# Video systems

Bosch offers video security solutions that are built to suit your needs. In a commercial building environment, it's critical to protect the people in the building and the property itself. Having insufficient measures could lead to a great amount of losses, which underlines the need of the right video security solution.



With the video security portfolio, Bosch enables early detection of suspicious behavior and other threats. These cameras offer a wide variety of both fixed and moving cameras, different form factors and excellent image quality. Moreover, all cameras as of the IP 4000 series have video analytics at the edge built-in as a standard. This ensures that you are alerted when needed, if potential hazards are identified in the reception area or in other critical spaces on the premise. It even goes beyond security, as it can deliver business intelligence. For example, it can count the amount of people going through the entrance during a certain time period.

## Benefits

- + Video analytics built-in as standard as of the IP 4000 cameras
- + Reduce bitrate up to 80% and save storage costs without compromising video quality
- + Integrated hardware and software measures to keep video data secure, such as a built in trusted platform module

**boschsecurity.com**

Solution provided by: Bosch Building Technologies



# Intrusion alarm systems

From single applications to extensive projects, Bosch provides solutions that are fully integrated and meet the highest security standards. The Bosch detectors and panels offer a finely-tuned balance between quick response to real security breaches and ignoring costly false alarm triggers.



State-of-the-art readers and controllers restrict access to critical areas, buildings, and facilities. All unauthorized access attempts are monitored and can be watched using nearby surveillance cameras. If a detector picks up a possible threat, the video management system of Bosch comes into play, with high-resolution video surveillance cameras and intelligent video analysis to verify the alarm and enable subsequent forensic searches for identifying and detaining intruders.

## Benefits

- + Portfolio covers panels, detectors, communicators and accessories
- + Scalable intrusion solutions for various needs
- + Reliable intrusion detection with decades of experience

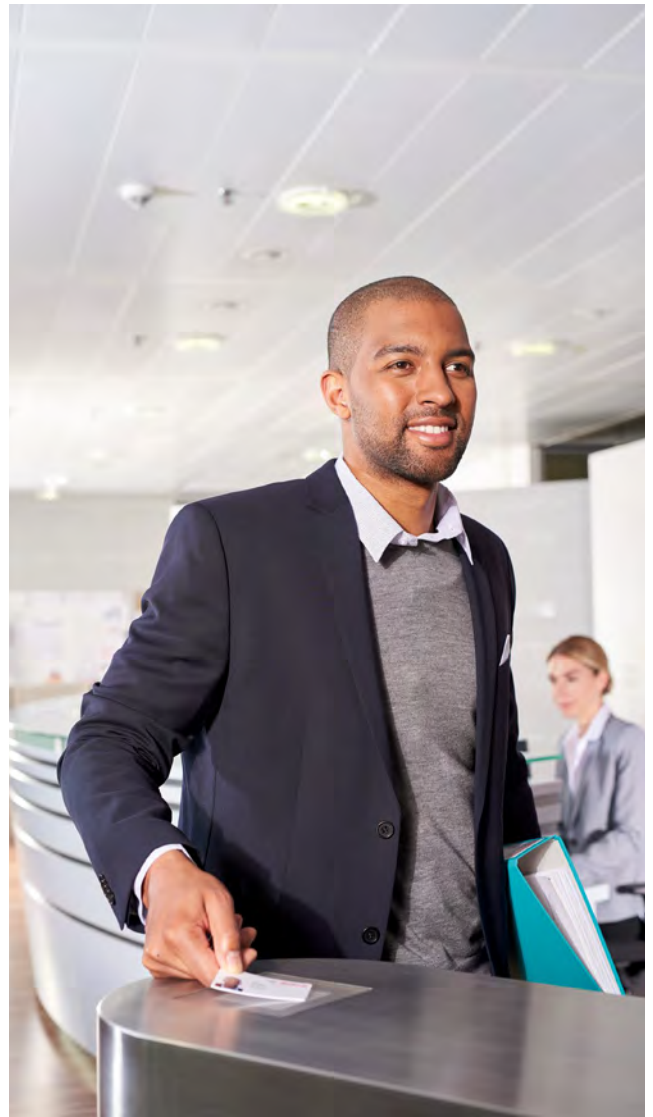
# Access control systems

Bosch offers integrated systems for many different applications to protect staff from uninvited guests and businesses from property and information theft.

The access control systems guarantee reliable access management both indoors and outdoors. State-of-the-art readers and controllers restrict access to nonpublic areas such as R&D facilities to ensure that only authorized individuals get in. Video cameras located in the vicinity monitor and observe any unauthorized access attempts.

## Benefits

- + Complete Bosch access control solution covering software, controllers and a variety of readers and credentials
- + Comprehensive system with many features and possible integration with third-party devices
- + Easy to install and maintain thanks to its modular concept



**boschsecurity.com**

Solution provided by: Bosch Building Technologies



# Management software

Bosch management software is specialized in complex enterprise solutions. The management software portfolio covers video and alarm management such as the building integration system or the Bosch video management system. The Bosch building integration system offers a tool box to allow integration with third party applications via open standards (OPC, ONVIF, OSDP) and software development kits.



The building integration system provides a single web-based control point for monitoring all security, safety, and facility management systems. This includes alarm management, fast alarm identification via location maps and follow-up procedures. It seamlessly integrates fire and intrusion alarms, evacuation, access control, video surveillance and building automation systems into a single platform. The building integration system enables a single operator to monitor and control all security systems, as well as to respond faster to emergencies and achieve greater overall effectiveness. The Bosch video management system provides seamless management of digital video, audio and data across an IP network.

## Benefits

- + Seamless integration of all Bosch safety and security subsystems as well as third party applications via SDK and open interfaces
- + Easy to operate, increasing operator efficiency, and allowing for a faster emergency response
- + One complete solution to enhance security, including a fully embedded access control

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# Energy services

Global energy consumption is continuously increasing and buildings are the number one consumer of energy. Bosch's energy services contribute to enhance energy efficiency, saving operating costs and reducing the carbon footprint.

With a combination of customized system solutions, services and modern technology, Bosch provides a comprehensive portfolio on energy services. All measures are always perfectly matched in order to save energy and operating costs. The Bosch range of services comprises energy analysis, planning and implementation of supply solutions and efficient long-term operation of energy systems.

## Benefits

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- + Increasing energy efficiency, reducing operating costs – Bosch develops tailor-made and future-proof energy solutions for buildings.
- + An attractive business model ensures that Bosch is a reliable long-term energy partner.
- + Bosch assists in all project phases and can therefore find the best solution for the customer: Analysis, planning, installation and operation complement each other perfectly, creating maximum efficiency.





# Energy-efficient heating, domestic hot water solutions and cogeneration

Bosch's modular and comprehensive product portfolio provides the optimum solution meeting the specific requirements of each building – no matter if office complexes, production facilities or warehouses. Key benefits of Bosch systems are outstanding efficiency, reliability and innovative control systems.

## Benefits

- + Maximum reliability of heating and hot water supply by using different energy sources. Integration of renewable energies for a carbon footprint that sets an example in ecological terms.
- + Intelligent controls balance the different energy sources in the most cost and energy effective way. Secure remote access allows the personnel to monitor the plant anywhere and anytime to make use of the remote support of a Bosch service engineer if required.
- + Bosch's modular product portfolio enables quick installation, low cost of ownership and high reliability. Experienced Bosch experts support along the whole product life cycle – from planning, to commissioning to 24/7 support and remote connectivity.

Modern building complexes comprehend decentral power generation with CHP's. This can save up to 76% on electricity bills and reduces the building's carbon footprint significantly. CHP isolated solutions provide electricity also during power blackouts, e.g. for critical systems, servers, lighting, and ventilation. Surplus heat from the cogeneration is used for heating and domestic hot water. Efficient heating boilers cover peak loads with up to 110% efficiency and are supported by solar thermal systems.



# Intelligent VRF air conditioning systems for commercial usage

Bosch's modular and intelligent product portfolio on VRF air conditioning systems provide scalable solutions for the specific cooling requirements for each building and application.



## Benefits

- + The wide capacity range of outdoor units from 25 kW to 90 kW with 13 models offers design flexibility during the planning phase with an optimum footprint. It is also possible to cascade units up to three, resulting into a system capacity of 270 kW. Outdoor units can cover big projects with extended piping length.
- + Inverter scroll type compressors with vapor injection feature give the best performance resulting into high efficiency at cooling and heating. Outdoor units are able to operate up to +48°C at cooling mode and down to -23°C at heating mode.
- + Various features ensure system reliability, allow energy savings, noise reduction and emergency operation if needed.

The lineup of energy efficient outdoor units combined with a large portfolio of indoor units adaptable for individual needs offers solutions to many different requirements. A planning software enables an easy and fast layout of the system. Indoor and outdoor units in appealing Bosch design underline the modern and attractive appearance. A large network with professional service engineers ensures smooth processes for commissioning and maintenance.

**bosch-industrial.com**

Solution provided by: Bosch Thermotechnology



# Connected building: How the IoT transforms commercial buildings



Digitalization is already having a visible and far-reaching impact on the working world and the working environment in commercial buildings. These structures have to be more powerful and more energy-efficient while becoming easier to manage. One solution lies in the buildings' connectivity and in their interaction with the people who work there.

The connected building platform from Bosch Software Innovations connects all relevant pieces of equipment in commercial buildings and stores the data in a cloud. As a result, building operators and facility managers can easily use a notebook or smartphone to monitor the key performance indicators of buildings and their use; they can also compare the performance of multiple buildings.

## Benefits

- + The core of our connected building platform is data collection in a cloud. By consolidating all data in one place, it can be accessed by all relevant parties regardless of whether they are inside or outside the building. Data can be analyzed in the cloud in real time, providing a basis for realizing entirely new types of services.
- + Thanks to the intelligent Bosch solution, building operators and facility managers can access the latest data of their buildings – anywhere, anytime. The system actively reports errors and problems, so that action can be taken to prevent the occurrence of any serious damage.
- + Providers of building technology, building automation, and software services for buildings gain continuously insights into the use of their products and services. As a result, providers can keep improving their products and services in line with their customers' needs.

**[bosch-si.com/connectedbuilding](https://bosch-si.com/connectedbuilding)**

Solution provided by: Bosch Software Innovations

# Predictive maintenance – a preventive service solution

Bosch predictive maintenance is a cloud-based analysis system that connects elevators with a central service instance. Existing elevator systems can be retroactively fitted with sensors, which help identifying inefficient operation parameters and dysfunctions without resorting to the expensive services of technicians on-site. Malfunctions, maintenance and upcoming repairs are coordinated and documented by a central service team.

Sensor systems implemented in elevators allow on-going monitoring, with data visualized via a web portal. A status dashboard provides real-time information. This facilitates the correctly functioning elevators or reduces their downtimes. If fixed parameters are exceeded, the relevant parties are informed, and repairs and maintenances are initiated – as pre-defined with the operator.

## Benefits

- + Information such as system status, covered distance, door openings, start and stop procedures and emergency stops are transferred and analyzed by a central station that initiates maintenance procedures. Downtimes are reduced to an inevitable minimum due to the high level of transparency.
- + Function checks conducted by expensive on-site technicians can be reduced with the help of remote diagnosis. This leads to cost savings.
- + The possibility of a quick retrofit was taken into account in the early stages of product development. This means elevators continue operating during the retrofit installation procedure, and downtimes are minimized.





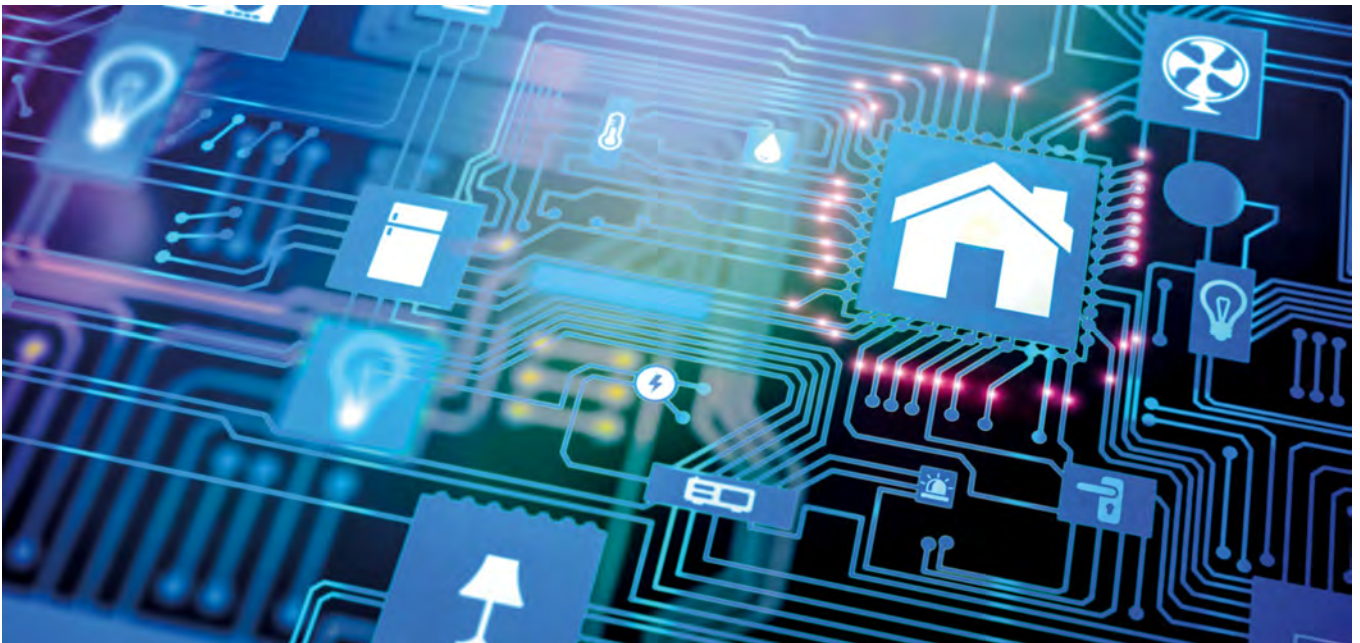
## Intelligent light control

The right illumination for every scenario. Demand-driven lighting control for more comfort, safety and less energy consumption.

Light influences our mood, our well-being – in private as well as in everyday business life. Interior lighting similar to daylight improves concentration and contributes to increased performance. In addition to the selection of luminaires and lamps, an efficient and intelligent lighting control system is fundamental for this. In addition to optimizing energy consumption and costs, it also enables a large number of lighting scenarios to be created at the same time, e.g. needs-based adjustment of illuminance or light color. To meet this requirement, Bosch offers pioneering control technology that also covers other options in building automation, e.g. building access, climate or energy data acquisition.

## Benefits

- + Efficient use, control and regulation of light with digital addressable lighting interface
- + Easy integration into higher-level and existing systems
- + i4.0 connectivity with open interfaces and standards



# Energy and building solutions

As a reliable partner, Bosch provides connected and integrated solutions which make buildings safer, more comfortable and more efficient. The Bosch experts support as consultants, installers and service providers. They have an extensive expertise and integrated solutions based on the latest technologies. Bosch offers integrated solutions for building security, building automation and energy services. All of Bosch's services are provided from a single source: from consulting and planning across implementation to operation. This enables Bosch to comprehensively meet the customers' needs. Bosch is active at more than 60 locations in Europe, the U.S. and Asia Pacific, and more than 100,000 customers benefit from experts' know-how.



## Benefits

- + Due to Bosch's long-standing competence, buildings will be made fit for the future with a targeted approach and experienced staff.
- + Short distances, competent teams and local contacts ensure professional consultation, optimal project implementation and long-term on-site support.
- + Bosch offers integrated overall solutions and attractive financing and operating models, are optimally tailored to every individual requirement.

Scarce resources, climate change, urbanization, demographic shifts, digitalization, and demands for greater quality of life – the mega-issues of our time require major changes in the infrastructures and commercial buildings. The need for security, efficiency, and comfort is rising, as well as the demand for connected overall solutions. The Internet of Things is opening up many new possibilities and opportunities. Connectivity is bringing scores of new developments! One of it is that key areas of building services will be closely interconnected in the future. Leveraging and applying all the synergies in a sustainable way requires an integrated approach and course of action. Bosch has the essential areas of expertise needed to integrate all key aspects into a single solution. Bosch is focused on a clear vision – to be the number-one choice for the technologies and services that make buildings more secure, more comfortable and more efficient.

**[boschbuildingsolutions.com](https://www.boschbuildingsolutions.com)**

Solution provided by: Bosch Building Technologies



# Professional power tools for trade and industry

A craftsman puts his heart and soul into his projects. Expectations are high: client requirements, appointments and construction challenges. That's what drives a professional to maintain high standards, deliver the best possible result and work with uncompromising efficiency. For that, skills and robust tools are needed. Bosch Professional offers the best support with innovative technologies and smart solutions. From planning and organizing to successful completion, Bosch provides an intelligent range of products and services with the quality to rely on.

Bosch professional power tools are engineered for excellence, meeting the highest standards in speed, precision and robustness for consistent, professional results. Therefore, Bosch Professional Power Tools is a competent partner for all craftsmen.



Bosch power tools is consistently expanding its expertise in connected measuring and power tools for professionals: from 2017 onwards the new tools are available for trades-people, from laser measures with integrated Bluetooth modules to angle grinders, lights and drill drivers.

With these tools, Bosch is driving the trend of digitization and is offering professionals a system, from products to inventory management, that optimizes processes and enables all tradespeople to work more efficient.



As one of the world's leading manufacturers of power tools and accessories, Bosch offers professionals virtually every tool they could ever need, from state-of-the-art lithium-ion cordless (battery-powered) to class-leading corded products. Bosch Professional Power Tools focuses on providing the trust a craftsman relies on when it comes to his tools and accessories.

## Benefits

- + Bosch provides services and consulting for all professional power tools and measuring tools beyond the legal warranty period. From online information to a dedicated team of trained customer service personnel.
- + Bosch ensures an excellent availability of spare parts and a fast turnaround time for warranty and chargeable repairs.

**bosch-professional.com**

Solution provided by: Bosch Power Tools

# Elevator emergency call – important modifications for operators

Technical standards and legal regulations make elevators the safest mean of transportation. The most important requirement specifies that emergency calls have to be passed onto a permanently staffed alarm receiving station. A new version of the industrial safety regulation states that all elevator systems transporting people need to be equipped with a two-way communication system. This is a challenge for operators.

The Bosch elevator emergency call combines fitting of emergency devices with the activation of emergency calls, so the operator can concentrate on his main business. The retrofitting of the required two-way communication system including its activation takes little time.

If trapped people trigger the emergency call, an immediate voice connection is established with the Bosch alarm receiving station. Agents calm the affected and organize their swift release. Bosch works with a nationwide network of intervention partners.

Furthermore, Bosch employees organize the repairs of the elevator. Every notification and event is documented for the elevator operator.



## Benefits

- + Bosch's network of intervention partners is one of the most effective in Germany. Due to the high amount of partners, trained security forces will quickly reach the site. With 50,000 monitored elevator systems, Bosch offers security for almost every system.
- + Bosch offers producer-independent and preconfigured emergency packages inclusive installation and the connection to the alarm receiving station for almost every kind of installation.
- + The technology can provide information on the operation status of other elements e.g. errors of the heating or air conditioning system, or the leakage of water and gas. Bosch's predictive maintenance services visualize the current conditions via a web portal. Potential breakdowns are detected early and repairs are initiated.



**[boschservicesolutions.com](https://boschservicesolutions.com)**

Solution provided by: Bosch Service Solutions



# Conference and discussion

The flagship digital congress network system enables the smooth conduct of even the most demanding meetings. Bosch offers award-winning, innovative industrial designs and state-of-the-art features, tailored for meetings of any size.



The Bosch system ensures a fast and flexible set-up with a choice of wired and wireless configurations. IR transmitters ensure that simultaneous interpretation is distributed solely to the participants for whom it is intended.

## Benefits

- + High speech intelligibility and natural sound
- + Full meeting control functionality
- + Enhanced security and reliability

**boschbuildingsolutions.com**  
Solution provided by: Bosch Building Technologies

# Automated valet parking

As a pioneer of automated mobility, Bosch has developed a driverless system that employs connected technology to save drivers not just the wearisome search for a parking space, but also the parking maneuver itself. Thanks to automated valet parking, every experience begins more convenient – whether it's flying off on holiday or going to a concert. Therefore, the driver simply drops off the vehicle at the drop-off area. Then the vehicle will be navigated to a free parking space with the help of the intelligent sensor technology.



## Benefits

- + Automated valet parking offers the car driver comfort and saving of time, as the vehicle takes over the driverless parking maneuver itself. Meanwhile, the driver can already proceed to his destination. Getting in and out of the vehicles takes place in comfortable and safe transfer areas. In addition, precise automated guidance eliminates the risk of incidents and damages while parking.
- + Automated valet parking increases efficiency due to the optimization of the parking garage capacity. The premium service opens up a range of additional potential service offerings, like a car wash, which excites the customers. The infrastructure based approach allows mixed traffic in the parking garage.

Automated valet parking is made possible by combining the intelligent sensor system supplied by Bosch with the automotive technology. The sensors, guiding the vehicle, are installed in the parking garage monitor, the driving corridor and its surroundings. Hereby, Bosch provides the system for both the parking provider and the car manufacturer.

The usage of the intelligent parking garage sensor systems automated driving. The intelligent infrastructure allows mixed traffic of automated and manual driving vehicles and passengers in the parking garage, hence, allowing an incremental implementation of automated valet parking vehicles.



**[bosch-mobility-solutions.com](https://www.bosch-mobility-solutions.com)**

Solution provided by: Bosch Connected Parking



# Community-based parking

With community-based parking Bosch simplifies the search for free parking spaces in the cities. Thereby, car drivers will be navigated straight to the next free parking space. This happens with the help of the ultrasonic parking sensors of the cars which detect free parking spaces on the street. The received information will be processed in the cloud and provided to drivers seeking a parking space.

Community-based parking includes drivers actively seeking a parking space, as well as those who are simply making their way around the city. The transmitter vehicle identifies empty parking spaces on the street as it drives past them. This data is anonymized and sent to the cloud. There, it is collected, aggregated, and processed further into digital parking maps. Based on the processed data, the receiving vehicle is given precise information on where free parking spaces are. The required connectivity hardware and the ultrasonic parking sensors of the car are already widely spread and facilitate a realization of community-based parking based on the latest technology.



## Benefits

- + Thanks to community-based parking the traffic of searching for parking spaces decreases significantly. In addition, the environment benefits from the direct and shorter drive to a free parking space.
- + Community-based parking enables car drivers to drive directly and relaxed to a free parking space. Thereby, the drivers save time. Furthermore, the on-board instruments indicate specific parking spaces (e.g. E-charging stations or disabled parking spaces).







# The Bosch Group












The Bosch Group is a leading global supplier of technology and services. 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 a huge number of 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.

More information is available online at  
[www.bosch.com](http://www.bosch.com)  
[www.bosch-press.com](http://www.bosch-press.com)



# Bosch divisions for selected verticals

	Airport facilities 	Automotive industry 	Commercial buildings 	Entertainment facilities 	Food and confectionery industry 	Hotel facilities 	Mining 	Pharmaceutical industry 	Railways and train station facilities 	Residential buildings 	Theaters 
<b>PROVIDER</b>											
<b>Building Technologies</b>	■	■	■	■	■	■	■	■	■		■
<b>Thermotechnology</b>	■	■	■	■	■	■	■	■	■	■	■
<b>Power Tools</b>	■	■	■	■	■	■	■	■	■	■	■
<b>Household Appliances</b>										■	
<b>Service Solutions</b>		■	■		■			■	■	■	
<b>Connected Mobility</b>	■	■	■	■		■			■	■	■
<b>Rexroth</b>		■	■	■	■		■	■	■		■
<b>Automotive Aftermarket</b>	■	■					■		■		
<b>Packaging Technology</b>					■			■			
<b>Smart Home</b>										■	
<b>Software Innovations</b>			■							■	
<b>Bosch Engineering</b>	■	■					■		■		
<b>Integrated Solutions</b>							■				



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© April 2018

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Printed in Germany. Any color variations are due to the limitations of the printing process.

Printed on 100% chlorine-free bleached cellulose manufactured in an environmentally friendly process.