

PRESS INFORMATION

Rexroth robotic toolkit for mobile robots improves user experience on all levels

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Modular, robust software and hardware components for autonomous vehicles and robots reduce the time to market for OEMs and end users



The modular ROKIT toolkit includes software and hardware components for autonomous driving, irrespective of the vehicle architecture or size. (Image source: Bosch Rexroth AG)

Bosch Rexroth has further developed ROKIT, its modular robotics kit comprising software and hardware components, which allows driverless transport systems, fork lift trucks or mobile robots to be put in place quickly. In addition to greater robustness, the focus is on even easier user guidance thanks to the Rexroth ROKIT aXessor over the entire life cycle: From quick engineering and commissioning to operation without expert knowledge and service with quick reaction times. ROKIT now also supports dual-laser use and offers compatibility with reflectors for special scenarios. At the same time, the new feature Map Expansion allows existing maps to be expanded.

The modular ROKIT toolkit includes software and hardware components for autonomous driving, irrespective of the vehicle architecture or size. As an open system solution, the modules fit seamlessly into higher-level control systems and support popular laser scanners. The ROKIT Locator determines the vehicle position in real time and produces its own maps of the surroundings. The ROKIT Navigator dynamically plans routes and allows the entire fleet to react to obstacles. The ROKIT Motor, a ready-to-install drive module for payloads of up to one ton, adds powerful standard hardware to the modular system for mobile robots. The drives are already proving themselves in pilot applications.

The ROKIT aXessor is now available in Chinese too. Its improved user interface allows intuitive changes of perspective for quick engineering and commissioning, operation and service for vehicles. No expert knowledge is needed. It allows central access to all ROKIT components. After logging in securely, express mapping is possible with just a few clicks and with no need for construction measures such as reflectors or strips on the floor. With the help of a wizard, the map, which takes just minutes to produce, can be assigned to all relevant vehicles in the ROKIT Locator fleet. The visualization shows how many and which vehicles (clients) are active in the section shown in the map. The system can be operated without any expert knowledge.

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The basic version of the free ROKIT aXessor includes all functions for commissioning and operating a fleet. In the future, the “ROKIT aXessor – Plus” expansion will provide extra convenient functions for operating large fleets. The graphical user interface (GUI) runs under Windows and LINUX.

Dual-laser and reflector mode for special applications and easy map expansion

The current ROKIT release already supports dual-laser operation. With the second laser, vehicles can move forwards and backwards safely without having to turn. The ROKIT Locator still requires no construction measures in order to determine the position of a vehicle within the mapped environment with centimeter precision. Optionally, reflector strips can increase the robustness of laser localization at key locations. This allows the ROKIT Locator to be used in areas that are often a challenge for laser localization technologies. This means that additional structural measures can be omitted.

The Map Expansion function is also new. It easily expands existing maps via a graphically guided mapping algorithm. Users can therefore map new corridors or additional halls and outdoor areas with no need for expert knowledge or changes to the infrastructure.

Tailored service packages

With service level agreements (SLA) for ROKIT, Bosch Rexroth assists OEMs and end users in their day-to-day work. They include for example first level support with globally guaranteed short reaction times in case of urgent need for action. They also offer free updates with the latest ROKIT Locator features. The services are billed on an annual basis.

The ROKIT Locator, ROKIT Navigator and ROKIT Motor components which are served centrally by the ROKIT aXessor automate autonomous vehicles in intralogistics as well as mobile robots for production and applications in retail or hospitals. The modular system is to be expanded in the future to include further mobile robotics modules.

Basic Information Bosch Rexroth

As one of the world’s leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customized system solutions and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, more than 31,000 associates generated sales revenue of around 6.2 billion euros in 2021.

Basic Information Bosch

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The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. 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 facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. 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 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 128 locations across the globe, Bosch employs some 76,100 associates in research and development, of which more than 38,000 are software engineers.

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