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# Bosch Rexroth: Open automation platform becomes an industrial ecosystem

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The open ctrlX AUTOMATION platform from Bosch Rexroth is now an industrial ecosystem

Travel the world of automation via app technology – this was Bosch Rexroth's vision when it launched the ctrlX AUTOMATION platform in 2019. More than 300 companies are currently implementing the solution in their applications and the step from an open platform to an industrial ecosystem has now been taken with the launch of ctrlX World in 2021. Significant enhancements to the solution were also made this year – and further enhancements are planned.

"Industrial automation is increasingly dominated by software. We therefore need automation solutions which are geared to increasingly digitalized industry. Among other things, they should support various programming languages, offer data communication systems and allow IT and OT to be connected in a straightforward but secure manner. Today, we know that ctrlX AUTOMATION meets the automation challenges not only in mechanical engineering but also in numerous other areas such as energy, mobility and building automation", explained Steffen Winkler, CSO of the Automation & Electrification Solutions Business Unit at Bosch Rexroth.

Since it was launched, the solution from Bosch Rexroth has evolved from an open automation platform into an industrial ecosystem. The partner network is growing all the time, adding hardware to the ctrlX AUTOMATION ecosystem and an increasing number of apps which are available for download from the ctrlX Store. In 2021, Bosch Rexroth also significantly expanded the range of services for the automation platform. The increasing demand for its products means that the company is now investing in its electronics production facilities, warehousing systems and logistics.

## Enhanced control platform and I/O portfolio

ctrIX CORE was designed to be an open system, using open-source Linux as an operating system and moving away from proprietary hardware requirements. This design feature makes it very easy to expand hardware functions and capabilities based on market feedback and customer requirements. Throughout 2022, we will have continued hardware performance expansion and introduce our own ctrIX IO portfolio.

## New functions for engineering

With ctrlX WORKS, Bosch Rexroth makes it easy to create, provide and use functions. In addition to simplicity, the priority here is the rigorous use of web technology. With ctrlX WORKS, engineering can be carried out on ctrlX CORE using a web browser. A comprehensive portfolio of libraries and components for typical automation applications is also available.

In 2021, a wide range of new functions for even more efficient engineering processes were added. For example, ctrlX CORE can now handle Docker images too. With the Software Development Kit (SDK), which is available to all developers on GitHub, users can now develop their own apps even more easily. A development environment for Python and Google Blockly which is integrated into ctrlX CORE is another highlight. As a result, users can now carry out development directly on the ctrlX CORE hardware.



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When it comes to automating engineering processes, ctrlX WORKS now offers a simple, clearly structured script interface, the Automation Interface. Recurrent engineering processes can be automated using simple scripts. This reduces the work involved by 80-90 %.

Steffen Winkler said: "With the improvements made to ctrlX WORKS, we have once again reduced the engineering outlay, significantly increased the possibilities for users and raised virtual engineering to a new level."

#### Services for the entire lifecycle

To ensure that users can solve their automation problems in the best way possible, Bosch Rexroth paid particular attention to accompanying services in 2021. With ctrlX SERVICES, which was introduced last year and is being gradually expanded, users are offered support over the entire product lifecycle.

This year, the focus was on the ctrlX Store that was unveiled recently. Here, users can download numerous apps from Bosch Rexroth and third-party providers. The ctrlX Store offers online access to all available apps and libraries for creating applications. The ctrlX AUTOMATION ecosystem – and thus the scope of functions – can be expanded easily by downloading additional apps or integrating partner applications.

The ctrlX Store will provide customers with a self-serve option for downloading and purchasing apps for ctrlX CORE. Many of these systems are working manually now and by the end of the year our back-end systems will be fully automated to allow customers to implement desired features on their own.

Bosch Rexroth offers the ctrlX Device Portal for launching new software functions, centrally managing and maintaining device settings or remote maintenance. The solution allows a complete service – from remote maintenance and backup/restore to the private software repository.

For more information, visit: www.boschrexroth.com/ctrlxautomation



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### **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



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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 2019.

#### **Basic Information Bosch**

The Bosch Group is a leading global supplier of technology and services. It employs roughly 395,000 associates worldwide (as of December 31, 2020). The company generated sales of 71.5 billion euros in 2020. 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 129 locations across the globe, Bosch employs some 73,000 associates in research and development, of which nearly 34,000 are software engineers.

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