



ITK Engineering and Bosch Rexroth drive software-defined automation solutions

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To shorten innovation cycles and increase the flexibility of production processes, more and more companies rely on software-defined automation. As a vendor-neutral systems engineering partner, ITK Engineering helps its customers identify and implement the right solution for their specific requirements. To strategically expand its capabilities in this area, ITK Engineering has now joined the Bosch Rexroth ecosystem network centered on the open operating system ctrlX OS.

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Industrial automation is undergoing a major shift: Traditional, hardware-based approaches are reaching their limits, software- and data-driven solutions are becoming the decisive differentiating factor. Companies must develop and modify their systems faster to shorten innovation cycles. Modern machines and systems must adapt quickly and interoperate seamlessly across system boundaries.

To support customers during this transition, ITK Engineering has joined the ctrlX World partner collaboration and is specifically expanding its development expertise to include this Linux-based operating system ctrlX OS. The official partnership with Bosch Rexroth complements the range of systems supported by ITK Engineering and underscores the company's commitment to integrate the best technological and economic solution into any new or existing system landscapes.

Press Release

ctrlX OS enables seamless use of software-based functions across all levels of automation. Applications can be developed, installed, operated, and updated independently of the underlying hardware.

A new level of automation

"ctrlX OS creates a flexible basis for rethinking automation from a software perspective," explains Daniel Schifferdecker, Head of the Industry division at ITK Engineering. "As a partner, we support customers who want to use ctrlX OS to transform this potential into concrete, economically viable solutions. Our goal is to implement the most suitable software architecture for every system landscape. The partnership with Bosch Rexroth expands our range of integration options, allowing us to offer maximum flexibility and technological neutrality in implementation irrespective of the vendor. This enables our customers to accelerate their innovation cycles and develop automation solutions that meet future requirements for flexibility, efficiency, and cyber security."

ctrlX OS as a foundation for flexible automation

ctrlX OS offers numerous advantages, such as hardware independence. "The operating system can run both on controllers and edge devices, as well as a virtual machine in data centers or in the cloud," Schifferdecker says. This allows applications to be executed where they make the most technical and economic sense so that resources can be used more efficiently, applications scaled flexibly, and systems managed more easily.

At the same time, the open, modular system architecture helps to integrate third-party solutions more easily and to gradually develop existing infrastructures. One additional advantage: ctrlX OS supports modern software approaches such as DevOps, Continuous Integration, microservice architectures, and virtual testing. This simplifies development, accelerates innovation cycles, and improves the quality of automation solutions.

In line with a security-by-design approach, ctrlX OS also supports the implementation of comprehensive cyber security concepts and ensures long-term protection through regular updates. "As regulatory requirements are increasing significantly across all industries, for example due to IEC 62443 or NIS 2, this forms an important foundation for reliably meeting these criteria," Schifferdecker explains. "Moreover, ctrlX OS specifically helps product manufacturers significantly reduce their own development and documentation workload for the upcoming CRA compliance," Schifferdecker adds. ctrlX OS is already prepared to meet the CRA's requirements and has been certified by TÜV Rheinland to IEC 62443-4-2 Security Level 2.

ITK Engineering provides support from concept to implementation

As part of the partnership with Bosch Rexroth, ITK Engineering helps machine builders, plant operators and system integrators considering ctrlX OS to strategically unlock the system's potential. This covers not only consulting and conceptual design but also the development of custom applications and their integration into existing system landscapes. By combining software and systems expertise, ITK Engineering helps to efficiently implement and future-proof complex automation projects.

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About ITK Engineering

ITK Engineering GmbH, founded in 1994 as an "engineering firm for technical cybernetics," is an internationally operating technology company in the software and systems engineering field. Thanks to its strong methodological expertise, ITK covers the entire spectrum – from embedded systems to cloud computing. With more than 1,000 employees, the company is an innovative force in digital engineering.

Customers in sectors ranging from automotive, industrial, and railway engineering to medical systems, agricultural/ construction machinery, and motorsports count on ITK to instill intelligence in highly complex systems. Expert teams work for ITK worldwide, at the company headquarters in Ruelzheim in Germany's Rhine valley, at nine additional branches located across Germany and in China, Japan, and Spain. The company has been a wholly owned subsidiary of Robert Bosch GmbH since 2017.

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