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Future-proof fleet management simplified with VDA 5050

Manuela Kessler | 07.10.2025 | Lohr am Main / Germany | PI 048/25

Bosch Rexroth and SYNAOS integrate K.Hartwall's AMR A-MATE® Lite into the SYNAOS Intralogistics Platform



Bosch Rexroth and SYNAOS have partnered to successfully integrate K.Hartwall's autonomous mobile robot, the A-MATE® Lite, into the SYNAOS Intralogistics Platform. (Image source: K.Hartwall)

Bosch Rexroth and SYNAOS, a specialist in intelligent material flow orchestration, have partnered to successfully integrate K.Hartwall's autonomous mobile robot (AMR), the A-MATE® Lite, into the SYNAOS Intralogistics Platform. Equipped with Bosch Rexroth's VDA 5050-compliant ROKIT software, the vehicle is now successfully operating in production environments. This project demonstrates how the open VDA 5050 standard enables straightforward, flexible, and scalable automation of heterogeneous fleets.

The increasing diversity of autonomous vehicle types and the growing number of manufacturers present operators with mounting challenges: Integrating different vehicles into existing workflows, orchestrating mixed fleets, and ensuring seamless communication across systems require flexible, vendor-agnostic solutions. This is where the open VDA 5050 standard comes into play – a key driver of standardization in intralogistics.

VDA 5050 as a bridge to the future

The VDA 5050 communication standard is pivotal for successfully integrating mobile robots into fleet management systems seamlessly and efficiently. Bosch Rexroth's VDA 5050-compliant navigation software, the ROKIT Navigator, enables seamless communication between vehicles from different manufacturers and a centralized fleet management system. Integrated into the A-MATE® Lite, it ensures the robot's complete VDA 5050 compatibility, providing standardized communication. Combined with the accuracy of Bosch Rexroth's ROKIT Locator localization software, the vehicle becomes an intelligent, flexible building block within any automated fleet system.

While Bosch Rexroth's ROKIT software components deliver reliable autonomy and full VDA 5050 compatibility at the vehicle level, the SYNAOS Intralogistics Platform orchestrates the entire fleet. Together, they enable an open, integrated, and future-proof intralogistics system.

PRESS INFORMATION

Seamless integration: how open architectures reduce complexity

The ROKIT software's comprehensive alignment with open interfaces and the ROKIT Navigator's complete VDA 5050 compliance enables straightforward vehicle integration without complex proprietary modifications to the SYNAOS FMS. The entire onboarding process was completed in a very short time, illustrating how standards can significantly reduce the complexity and costs associated with deploying autonomous vehicles.

"Our ROKIT software solutions deliver robust, open systems that drastically reduce integration complexity," explains Jörg Heckel, Head of the Project Robotics at Bosch Rexroth. "The project with the A-MATE® Lite shows that vehicles using the ROKIT software solutions can be quickly and efficiently connected to an FMS and put into operation – no matter which other systems or vehicle types are in use."

The openness of these systems offers substantial advantages for all parties involved. Operators benefit from enhanced flexibility and future-proofing, as they can freely combine vehicles from multiple manufacturers and manage them centrally. For vehicle manufacturers (OEMs), leveraging modular, open components like the ROKIT Locator and ROKIT Navigator significantly accelerates development cycles and broadens market reach. Meanwhile, VDA 5050-compliant FMS providers experience drastically reduced integration timeframes.

In addition to the A-MATE® Lite from K.Hartwall, Rexroth's own AMR ACTIVE Shuttle, for example, which is designed for transporting small load carriers on floor rollers, can be integrated efficiently and quickly into VDA 5050-compatible fleet management systems such as the SYNAOS FMS.

"At SYNAOS, our mission is to make intralogistics operations with all their diverse participants as efficient and future-proof as possible," says Dr. Philipp Schäfers, Head of Partner Management & Business Development at SYNAOS. "The rapid and straightforward integration of the A-MATE® Lite into our platform, based on VDA 5050, demonstrates the strength of the open approach pursued by SYNAOS and Bosch Rexroth. This modularity and flexibility are true game changers for the industry."

A partnership built on collaboration

The success of this project is not least the result of a close and collaborative partnership between Bosch Rexroth, SYNAOS, and K.Hartwall. This exemplary integration underscores the immense potential of open, modular, and standardized technologies when companies combine their expertise.

Experience the future of automation live

The synergies and full potential of this collaboration between Bosch Rexroth, SYNAOS, and K.Hartwall will be on display at the Mobile Robotics Summit, taking place October 8-9, 2025, in Düsseldorf. The live demonstration offers visitors exclusive insights into how automation, enabled by open standards, can become more straightforward, flexible, and future-ready.

SYNAOS at the Mobile Robotics Summit: Booth H1-M14

K.Hartwall at the Mobile Robotics Summit: Booth H1-M7

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 and Industrial Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering 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, around 32,600 associates generated sales revenue of 6.5 billion euros in 2024.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 418,000 associates worldwide (as of December 31, 2024). The company generated sales of 90.3

PRESS INFORMATION

billion euros in 2024. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, electrification, digitalization, connectivity, and an orientation to sustainability. In this context, Bosch's broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in sensor technology, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture user-friendly, sustainable products. With technology that is "Invented for life," Bosch wants to help improve quality of life and conserve natural resources. The Bosch Group comprises Robert Bosch GmbH and its roughly 490 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. Bosch's innovative strength is key to the company's further development. At 136 locations across the globe, Bosch employs some 87,000 associates in research and development.

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