



BODAS Connect

A Telematic System for Off-Highway Vehicles

<i>Project</i>	An IoT and telematics solution for Off-Highway vehicles	
<i>Product Used</i>	owa4X / owa5X	
<i>System Benefits</i>	This system stands out for its flexibility, allowing users to choose hardware, software, and partners according to their needs	

About 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 33,800 associates generated sales revenue of 7.6 billion euros in 2023.

BODAS Connect: A Flexible Telematics Solution

Bosch Rexroth's **BODAS Connect** is designed to meet the diverse needs of the Off-Highway vehicle market. It offers a customizable telematics solution that caters to various stakeholders, including operations managers, service technicians, and engineers.



The system's key features include:

- **Customizable Telematics:** Tailored to specific market needs and user roles.
- **Open Connectivity:** Users can choose or integrate third-party solutions.
- **Edge Computing with IP Protection:** Developers can create and deploy their own applications while safeguarding intellectual property.
- **Flexible Data Management:** Vehicle data can be uploaded to multiple cloud endpoints, along with completely customize dashboards for own brands and workflow requirements.
- **Professional Front-End Options:** Pre-defined interfaces for fleet management and vehicle services.
- **Customizable Data Pipelines:** Users can retrieve, combine, and generate data as needed.

Why Vehicle Manufacturers choose BODAS Connect?

- **Ready-to-Use Solution:** pre-defined components enable deploying telematics hardware onto machines & seeing data online in minutes.
- **Fully customizable:** from deploying own business logic on telematics hardware to dashboards, customers have the flexibility to make IoT work for them the way they want
- **Over-the-Air Updates:** Remote software updates for different ECU types, for entire fleets, anytime anywhere
- **Partner Ecosystem:** ongoing partnerships with specialized service providers.
- **Vehicle Systems Integration:** Part of the broader BODAS digital application solutions.

Owasys Hardware: The Heart of the System

At the core of BODAS Connect's capabilities lies the robust hardware provided by Owasys: the **owa Units**. Two key models form the backbone of this system:

owa5X		owa4X
Processor: i.MX8 M Plus Quad A53, 64 bit Memory: 2GB LPDDR4; 1GB NAND Flash SLC; 8GB EMMC GSM Communication: Global LTE Cat 4 Interfaces: Up to 4 CAN FD Bus; Wifi&BT 5.2, etc. Rugged Enclosure: IP67 / IP6K9K		Processor: ARM Cortex A8 32 bit, 800MHz Memory: 512MB DDR3; 1GB NAND Flash GSM Communication: Global LTE Cat 4 Interfaces: Up to 4 CAN; Wifi&BT 4.2; Audio Codec, etc... Rugged Enclosure: IP67

The importance of Owasys **HARDWARE** in BODAS CONNECT

The partnership between Bosch Rexroth and Owasys is the foundation to the success of BODAS Connect.

Here's why:

- **Scalability:** The two owa Units offer different levels of processing power and memory, allowing Bosch Rexroth to provide scalable solutions that cater to varying customer needs and budgets.
- **Rugged Design:** Both models feature IP67-rated enclosures, with the owa5X offering even higher protection (IP6K9K). This ruggedness is essential for the harsh environments in which Off-Highway vehicles operate.
- **Connectivity Options:** The wide range of interfaces (CAN bus, WiFi, Bluetooth, LTE) supports the diverse connectivity requirements of modern telematics systems.
- **Processing Power:** The owa5X's quad-core processor supports advanced features like edge computing and running a full Linux operating system, enabling the development and deployment of custom applications.
- **Flexibility:** The choice between owa4X and owa5X allows Bosch Rexroth to offer tailored solutions that match specific requirements and price points of different customers.
- **Reliability:** Owasys's focus on rugged, industrial-grade hardware ensures that BODAS Connect can deliver consistent performance in challenging environments.

Conclusion

The collaboration between Bosch Rexroth and Owasys exemplifies how innovative software solutions and robust hardware can come together to create a powerful, flexible telematics system.

"The partnership with Owasys is not just about providing a product; it's about empowering customers with the tools they need to innovate and succeed in an increasingly connected world. As the Off-Highway vehicle industry continues to embrace digital transformation, solutions like BODAS Connect, built on reliable hardware platforms, will play a crucial role in improving efficiency, reducing downtime, and enabling new service models. We selected Owasys due to its impressive track record of 20+ years of Linux based Connectivity Unit development."

- Dr. Christian Grabe, Business Owner Telematics, Mobile Solutions.