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An IoT Edge Solution for the Off-Highway Market

Rugged Hardware Powers SUNCAR's Telematics Platform for Viktor Meili AG's Smart Fleets

Project	Telematics platform for next-generation electric off-highway vehicles	
Product Used	owa4X / owa5X	
System Benefits	Fleet monitoring, CAN logging, remote diagnostics and OTA updates	

About Suncar AG

SUNCAR AG is a Swiss company specializing in electrification, automation, and connected telematics and fleet management solutions for off-highway vehicles, enabling the transition to zero-emission operations.

By combining expertise in vehicle electronics with cloud and data engineering, SUNCAR delivers end-to-end telematics platforms for vehicle manufacturers, service organizations, and fleet operators. The company's mission is to make off-highway machines more efficient, smarter, safer, more transparent, and ready for a zero-emission future.

OEM: Viktor Meili AG

Viktor Meili AG is a leading Swiss manufacturer of specialized municipal and off-highway vehicles.

As the company expands its electric vehicle portfolio, the amount of available operational and diagnostic data has increased significantly, creating both opportunities and challenges.

The Challenge

Electric drivetrains generate substantially more data than conventional vehicles. Battery systems, motor controllers, thermal management systems and auxiliary electronics all produce valuable information.

Meili required a solution that would:

- Enable efficient remote diagnostics and commissioning.
- Capture and store large amounts of CAN data.
- Provide transparency to municipalities and operators.
- Support integration of any additional sensor data for custom use cases.

Insight: The SUNCAR Telematics Solution

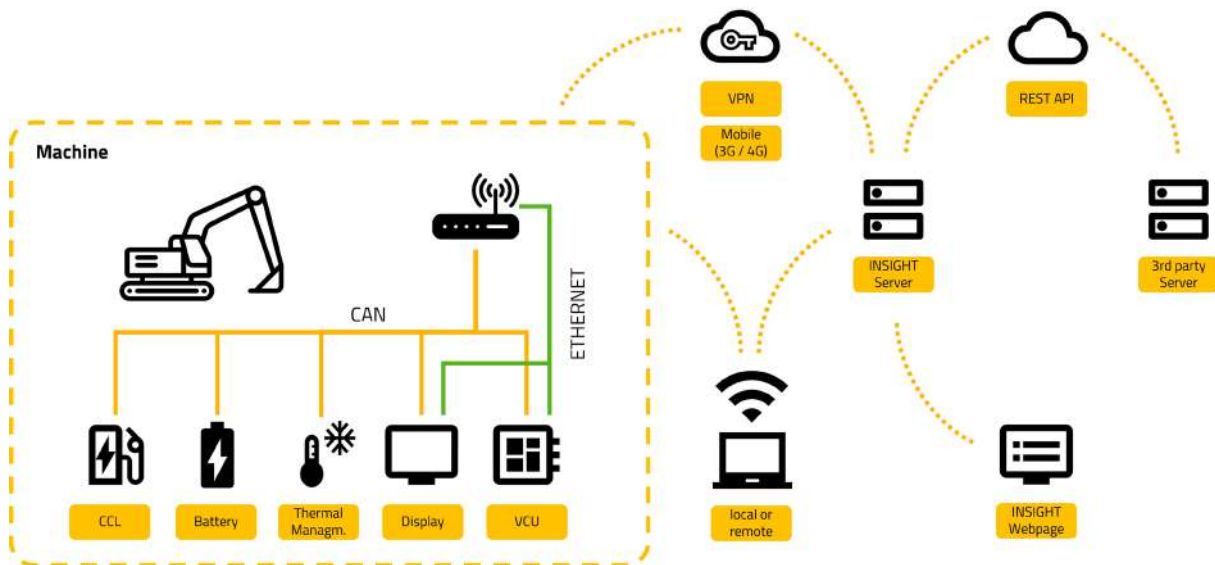
SUNCAR developed a comprehensive telematics platform based on Owasys hardware.

The architecture consists of:

- Vehicle-installed owa4X or owa5X gateway.
- High-resolution CAN logging with local buffering.
- Secure cellular communication through VPN tunnel to the cloud.
- Customizable web portals with white labeling, user account management, company assignments, and role-based access control.
- Flexible sensor integration.

Four modular service packages are available:

- Logging – Continuous CAN data capture and cloud upload.
- Monitoring – Real-time monitoring and reporting.
- Access – Remote diagnostics and configuration.
- OTA – Over-the-air updates with safety confirmation mechanisms



The Selected IoT Gateway

The platform is powered by Owasys owa4X and owa5X gateways, designed for demanding industrial environments.

Key advantages:

- Up to four CAN & ETH interfaces
- Rugged IP67/IP6K9K housings
- Linux-based operating system
- WiFi and Bluetooth connectivity
- High-performance processors for advanced data acquisition

The owa5X provides additional processing power and CAN support for demanding applications.

owa5X
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

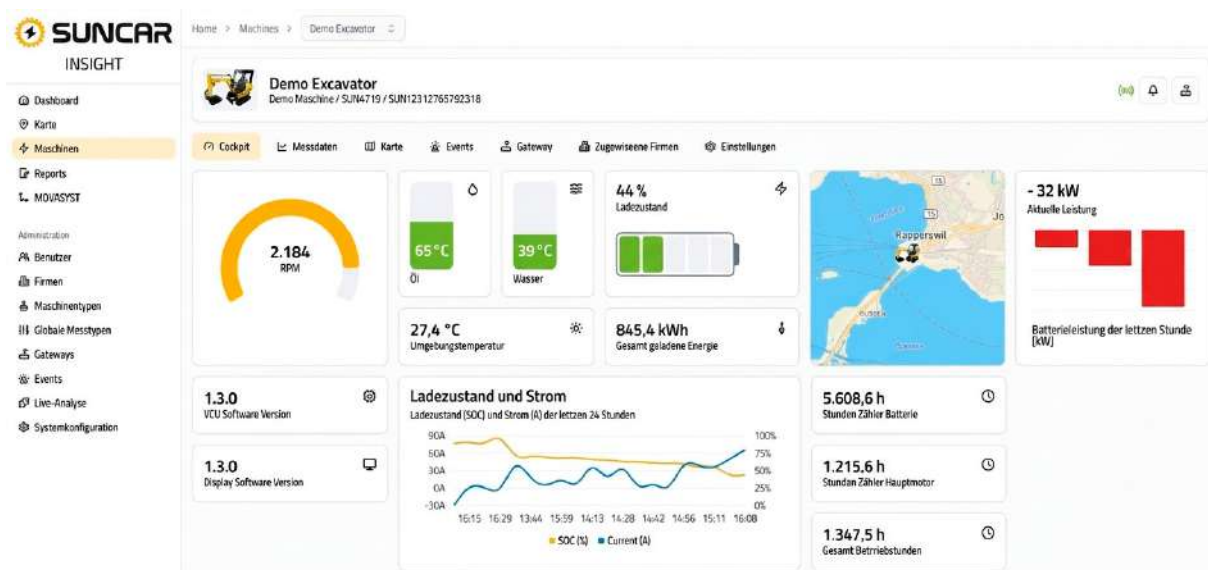


owa4X
Processor: ARM Cortex A8 32 bit, 800MHz
Memory: 512MB DDR3; 1GB NAND Flash
GSM Communication: Global LTE Cat 4
Interfaces: Up to 4 CAN; Wifi&BT 4.2; Audio Codec, etc...
Rugged Enclosure: IP67

Results & Customer Benefits

Deployment of the platform delivered measurable benefits:

- Faster vehicle commissioning.
- Reduced service costs through remote diagnostics.
- Over-the-air (OTA) software updates for fast roll-out of new features, bug fixes, and firmware improvements.
- Reliable data capture even during network interruptions (CAN-Logger).
- The buffering architecture ensures no loss of critical CAN data, even when cellular connectivity is unavailable.



Conclusion

The SUNCAR telematics platform demonstrates how purpose-built telematics and IoT infrastructure can unlock the full potential of vehicles with any type of drivetrain.

By combining rugged Owasys hardware with a modular cloud platform, SUNCAR enables manufacturers such as Viktor Meili AG to improve serviceability, operational efficiency and fleet transparency.

The introduction of OTA updates further strengthens the platform and supports the future digitalization of off-highway fleets.

"The partnership between SUNCAR and Owasys goes beyond a conventional supplier relationship, built on close technical collaboration, strong engineering support, and shared alignment on future developments, while ensuring compliance and certification requirements are reliably met." Andreas Reichmuth, Team Leader Products Automation.