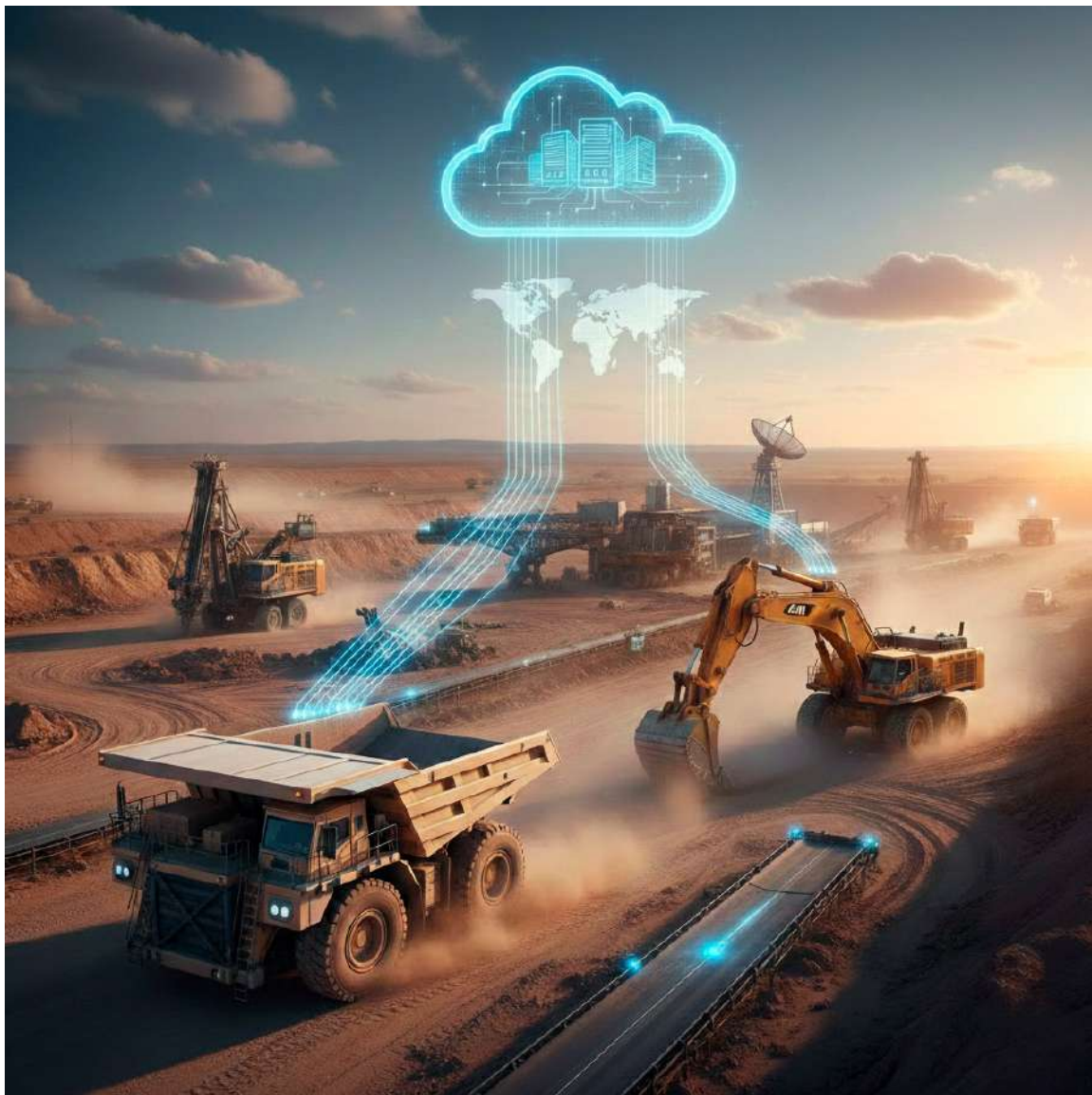


MINING

Rugged, Open-Linux gateways for the most extreme Mining environments



About Owasys

Based in **Bilbao**, Spain, Owasys has been a specialist in the design and manufacture of advanced telematic gateways for vehicle and industrial machinery data acquisition since **2002**. Our team of expert engineers provides more than just hardware; we offer a **true partnership** through end-to-end consultancy for customized software development.

We focus on empowering **System Integrators and OEMs** to bridge the gap between their vehicles and the cloud, enabling smarter, data-driven operations.

The owa Units

Our platforms are characterized by their open **Linux Operative System** (supporting Debian and Yocto), offering the total freedom to develop and deploy customized applications using most common programming languages (**C, C++, LUA, Python, Containers**, etc).

To meet diverse project needs, we provide a versatile range of hardware with different processing and connectivity capabilities. Our units are engineered for any environment, featuring flexible I/O configurations and protection ratings ranging from **IP40** to **IP67** and **IP6K9K**.

Furthermore, Owasys gateways are **RED directive, E-Mark, FCC, PTCRB, AT&T and Verizon** compliant, and certified for major global markets, ensuring a secure and reliable foundation for your data.



Not only Hardware

Besides the platforms, we provide a comprehensive ecosystem designed to simplify the development of telematic solutions. Through our **Developers Portal**, customers gain immediate access to essential **APIs, libraries, and microservices**, alongside direct technical support throughout the entire process.

Our gateways are designed to help you integrate advanced features such as:

- Remote Monitoring & Fleet Management
- Predictive Maintenance
- Edge Data Analysis & Machine Learning
- Customized Software Application Deployment



The Mining Sector

The mining sector is rapidly evolving into a high-tech digital ecosystem. As operations move toward automation, the ability to **remotely monitor heavy machinery** has shifted from a “luxury” to an operational necessity.

Mining exploitation companies invest millions in their fleets. In such a high-intensity environment, the margin for error is razor-thin. A single undetected issue—such as degrading oil quality or fluctuating tire pressure—can lead to **catastrophic mechanical failure**. These incidents don’t just cost thousands in parts; they result in expensive “dark time” where production grinds to a halt.

By integrating remote telematics, companies gain a dual advantage:

- **Operational Intelligence:** Real-time data on working hours allows for precision scheduling and statistical analysis, ensuring every asset is utilized at peak efficiency.
- **Predictive Maintenance:** Operators can identify “pre-failure” signatures, allowing for minor repairs before they escalate into systemic breakdowns.

The indicated Gateways

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

Featuring a **ruggedized design** (IP67 and IP6K9K ratings), **powerful processing** capabilities, and a wide array of **customizable connectivity options**, both the owa5X and owa4X are ideally suited for the demanding environments of the mining industry. Depending on the specific scope and requirements of your project, one unit may be better indicated than the other to provide the optimal balance of performance and reach.

Please contact us for more details; we look forward to working together to deploy the most effective telematics solution for your machines and vehicles.

Case Studies

Fleet Management

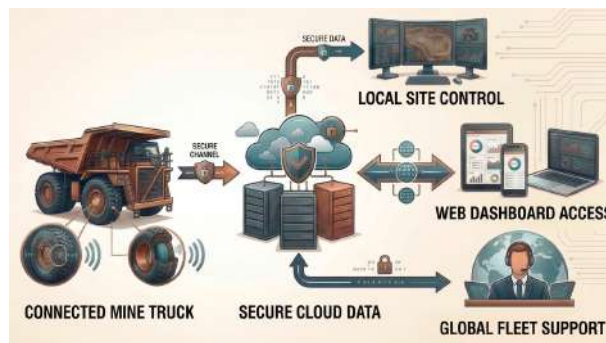


This advanced **mining telematics** solution utilizes the **owa5X** IoT Gateway as a rugged, high-performance onboard edge device to transform raw machine data into **optimized fleet performance**. Housed in an **IP67 / IP6K9K-rated enclosure** designed to withstand harsh mining environments, the gateway **connects to numerous asset types**, such as haul trucks and excavators, via **up to 4 CAN FD Bus** interfaces.

By leveraging an **i.MX8 M Plus Quad A53 64-bit processor** and an **Open Linux** platform, the unit performs complex **edge-side data processing** and packaging before transmitting high-frequency **insights and positioning information** to the cloud or dispatch room via **Global LTE Cat 4, WiFi, or Satellite**.

Tire Pressure Monitoring

The **owa5X IoT Gateway** serves as the rugged, high-performance core of this advanced Tire Pressure Monitoring System (TPMS). Featuring an **IP6K9K-rated enclosure** and a **powerful Quad-core 64-bit processor**, the gateway collects real-time **pressure and temperature data** from wireless sensors across the fleet. It performs local edge-processing to calculate “cold inflation” pressure—compensating for heat buildup—and utilizes its integrated **6-axis accelerometer** and **GNSS** to correlate **tire stress** with driving behavior and road conditions.



By transmitting these insights via **Global LTE Cat 4** or **WiFi**, the owa5X enables a shift to **predictive maintenance**, identifying slow leaks and overheating before they lead to failure. This automation eliminates the need for manual pressure checks, optimizes fuel efficiency, and significantly **extends tire life** in the most demanding industrial environments.

Oil Quality Monitoring

This advanced oil condition monitoring solution utilizes the **owa4X** IoT Gateway as a rugged, high-performance central hub to transform raw sensor data into actionable maintenance insights. Housed in an **IP67-rated enclosure** for harsh industrial environments, the gateway connects to **specialized sensors** via a modular hub system that scales from a single asset to a fleet of multiple sensors. By leveraging an **ARM Cortex A8 processor** and a **Linux-based OS**, the unit performs **edge-side data processing** before transmitting real-time **oil degradation and contamination alerts** to the cloud via **LTE (4G), WiFi, or Ethernet**.



The integration of this gateway enables a shift from reactive to **predictive maintenance**, allowing operators to extend oil drain intervals safely **based on actual condition** rather than “hours run”. Integrated **GNSS** positioning (GPS/GLONASS/Galileo) further provides precise location tracking for mobile assets alongside their health status. This combined connectivity and processing power help **reduce unexpected breakdowns**, optimize equipment lifespan, and provide a **unified dashboard view** of an entire asset fleet at a glance.