

 Vision
air
Orion®

IoT Enables Predictive Maintenance to Support Veolia's New Premium Service Offering

A Sierra Wireless® Industrial IoT Solution

CUSTOMER CRITICAL CHALLENGE

- To use IoT technology to enable real-time monitoring of water-treatment systems. Taking their product and service offering to the next level by supporting a new premium service contracts that offer predictive maintenance and advanced data analytics.

SOLUTION

- 24/7 connected water-treatment systems powered exclusively by the Sierra Wireless IoT infrastructure
- Online portal, viewable by Veolia and their customers, for anytime/anywhere access to cloud-based IoT data and alerts, plus recommendations for operational improvements
- Fixed-location cellular data with pan-European coverage provided by Sierra Wireless SIMs and Connectivity Service

BENEFITS

- Managed Service 24/7 remote monitoring lets Veolia respond in an instant, day or night, even before onsite personnel know there's an issue
- Predictive maintenance lets Veolia schedule onsite visits according to need, not the calendar
- Advanced data analytics, based on real-time information, yield insights that increase efficiency, save energy, and reduce operating costs



BACKGROUND

Healthcare, research, industrial, and pharmaceutical industries rely on Veolia Water Technologies (Veolia) to supply high-quality water-treatment systems and ongoing service support to keep their businesses moving. Veolia wanted to provide even higher levels of service, by connecting their water treatment systems to the Industrial Internet of Things (IIoT). Once connected, Veolia would introduce premium service contracts that use real-time monitoring to enable predictive maintenance and advanced data analytics.

The Challenge

Veolia supplies water-treatment equipment and services into several industries, including pharmaceuticals, food and beverage, chemical processing, power generation, healthcare, and scientific research. Purified water and wastewater treatment are mission-critical elements for all these businesses, because impurities in the water supply can cause faulty results or dangerous conditions.

Veolia's standard service contracts include planned service visits and preventive maintenance throughout the product life cycle, and offer features like guaranteed on-site response within four hours, and emergency technical support, but Veolia wanted to provide even higher levels of service. The company wanted to connect their machines to the IoT, for round-the-clock monitoring, so they could increase their responsiveness and offer premium services that include predictive maintenance and data analytics.

They Started with Sierra

To develop the remote monitoring capabilities needed for their project, Veolia chose to start with Sierra Wireless, a leading provider of IoT infrastructure for implementing managed IoT services for industrial equipment.

Veolia now uses Sierra Wireless technology to drive the entire IoT process of collecting machine data and making it available to customers and service representatives. Sierra Wireless AirLink® LS300 gateways collect data from each water-treatment system and automatically send it to the Sierra Wireless AirVantage® IoT Platform, a cloud-based repository for machine data. Using the Sierra Wireless IoT Smart SIM and Connectivity service, Veolia can deploy anywhere within Europe, without having to negotiate with different Mobile Network Operators (MNOs).

Real-time data and alerts from the AirVantage IoT platform enable predictive maintenance services and are used to make recommendations for operational improvements. Veolia's customers can view and interact with data from the IoT platform, too, using Veolia's own Vision Air portal. The result is a comprehensive IoT service platform that lets Veolia offer fully managed service contracts, for increased efficiency and added value.

Veolia's customers include universities, medical labs, research labs, healthcare providers, pharmaceutical manufacturers, food and beverage manufacturers, power stations, and other industrial organizations that need on-site water-treatment systems for a wide range of applications, from the cleaning and sterilization of lab equipment to drug manufacturing and the production of electricity.



"We couldn't have done this on our own. Sierra Wireless was an integral part of our development team. With their help, and careful planning, we were able to create the system we wanted, while working within our budget. The project won a Veolia innovation award, which was great recognition for the project team."

Jason McInerney
Marketing Director
Veolia Water Technologies, UK

- **AirLink® LS300 Cellular Gateway**

The gateway provides the water-treatment system with a secure connection to the Internet, using 3G cellular communication. Veolia was able to use the gateway right out of the box, so there was no need to design customer IoT hardware for machine connectivity. That saved time, and made it much easier to retrofit existing machines in the field.

- **AirVantage IoT Platform**

The AirVantage IoT Platform, powered by Amazon Web Services*, provides all the capabilities that companies like Veolia need to create IoT solutions for their customers. The Platform is integrated with the LS300 gateway, so it's easy to collect machine data and transmit information to the cloud. The Platform organizes and stores all IoT data, so Veolia only has to access it as required for use in their Vision Air portal. The Platform also handles all the management activities required to keep machines online and communicating with remote monitoring and updating of the LS300 gateways.

- **Sierra Wireless IoT Smart SIM and Managed Connectivity**

Veolia was one of the first to use Sierra Wireless' Smart SIM Connectivity service, a unique offering that provides an operator-independent SIM for IoT use cases. Veolia uses a single SIM and connectivity platform wherever their machines are deployed, so they can scale their operations quickly and expand into new regions without having to worry about how they'll access local cellular networks.

**SIERRA WIRELESS COMPLETE
DEVICE-TO-CLOUD SOLUTION FOR
VEOLIA**



Using Sierra to Control Cellular Connectivity

Veolia wanted control over the connectivity of their machines deployed in the field, and that meant avoiding onsite wired or Wi-Fi networks. Opting for cellular connectivity gave Veolia complete control over their network of water-treatment systems.

Another consideration for Veolia was the fact that their machinery is fixed in place, and often installed in basements and other locations where it's hard to get a cellular signal. Choosing the wrong MNO can add to the problem, making it difficult to install fixed equipment. Using the Sierra Wireless Managed Connectivity service removed this as a concern. The service is operator agnostic, and can provide access to multiple MNO networks in any given location, so it's easier to get a reliable signal wherever Veolia deploys their systems.

* For more details concerning how AWS powers AirVantage, go to our AWS partner page:
<https://www.sierrawireless.com/products-and-solutions/sims-connectivity-and-cloud-services/iot-cloud-platform/aws-partnership/>

Customer Benefits

Having started with Sierra, Veolia now offers a set of premium service contracts that provide customers with fully managed services for maintenance, reporting, and analysis of their water-purification systems. The ability to offer IoT-driven features established the company as an early innovator in managed services and distinguishes them as a premier supplier.

PREDICTIVE MAINTENANCE

To minimize equipment failures and maximize uptime, Veolia's predictive maintenance services build on real-time encrypted performance data, including alarms and equipment status. This makes it possible to track important metrics, like flow, pressure, temperature, and conductivity, in each water-treatment system.

BETTER DECISIONS

By analyzing real-time usage data captured by the Vision Air platform, Veolia can make better decisions about servicing their water-treatment systems, enhancing business efficiencies, and reducing administration overhead. Since Veolia's customers can access the same data, their own technicians can monitor Veolia's systems, even from a remote location, and can evaluate ways to save water and energy.

FASTER DEPLOYMENT

By choosing Sierra for the entire IoT infrastructure, including gateway, IoT Smart SIM, and cloud-connectivity technology, Veolia saved time during the early stages of deployment, since the technical team didn't have to stitch together various technologies from different suppliers and then test them all for interoperability.

GLOBAL REACH

The initial rollout of Vision Air, in the UK and France, was very successful, and serves as a model for future expansion throughout Europe and beyond. Using Sierra Wireless' operator-independent Managed Connectivity serviced, Veolia can expand its service globally and have access to the best network, regardless of service provider, wherever their machines are installed.

Visit sierrawireless.com to learn more about IoT technologies for industrial equipment and the ways that real-time monitoring can create new, value-added capabilities for managed services, including predictive maintenance and advanced data analytics.

FUTURE EXPANSION

By using proven Sierra Wireless technology as the basis for a complete IoT deployment – from the modem hardware and the cloud-based data repository to the cellular connectivity itself – Veolia is positioned for rapid future expansion of premium service contracts.

About Sierra Wireless

Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is an IoT pioneer, empowering businesses and industries to transform and thrive in the connected economy. Customers Start with Sierra because we offer a device-to-cloud solution, comprised of embedded and networking solutions seamlessly integrated with our IoT services. OEMs and enterprises worldwide rely on our expertise in delivering fully integrated solutions to reduce complexity, turn data into intelligence and get their connected products and services to market faster. Sierra Wireless has more than 1,400 employees globally and operates R&D centers in North America, Europe and Asia.

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