



Benefits

- Extremely precise performance monitoring even during development phase
- Short time to market
- Lower implementation and architecture upgrade costs
- Decreased systems downtime

Solution:

Remote monitoring and Control

Customer: W2W Solutions

Country: Italy

It feels like innovation

With W2W Solutions system integrator activity, eWON industrial routers are used in the wind turbine sector. Reliable, secure and flexible, the connectivity solutions eWON offers allow effective control with advanced tracing and logging features to contribute to keeping development costs low.

BERGAMO, ITALY — 'W2W' means 'Wireless to Web' and come from one of the hottest industrial automation topics which holds high potential for engineer Roberto Caspani's company. Mr. Caspani is a system integrator with solid experience whose operations have become stronger and grown through investments in technology, innovation and cutting-edge solutions.

In fact, W2W Solutions offers services for monitoring plants and systems for process control in various industrial sectors based on both public 2G/3G wireless connectivity and private HyperLAN and Wi-Fi networks. Active on the market since March 2013, W2W Solutions targets application design and construction in the renewable energy field, supporting photovoltaic systems with the new opportunities provided by the water treatment and mini wind turbine sectors.

Infinite possibilities for wind turbines monitoring

The W2W Solutions activity, which relied on CRIEL Srl for the mini wind turbine applications, consists of equipping customers with appropriate monitoring and measurement tools. These allowing enormous quantities of data and the description of energy production trends to be managed. The connectivity solutions offered by eWON allow maximum versatility and user-friendliness and they are W2W Solutions' first choice.

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“The new Flexy units have ten times the computing and data storage power of the previous eWON routers and they make extremely detailed and precise variable tracing possible. Even in the development phase, Flexy is able to monitor performance with extreme precision which allows optimum fine tuning of the wind turbine tower. Even if tried and true strategies from the wind turbine sector are used in the mini wind turbine area (such as, for example, correct adjustment of the blade inclination for balanced wind reception), in any case this data must be recorded prior to start-up. As a key player even in the development phase, eWON is truly the core of the structural architecture.”

This is a reliable and functional core which takes care of recording sensitive data as well as transmitting it to the servers via FTP, Modbus, SNMP or HTTP. The versatility of the eWON routers is absolutely unparalleled: "It is clear just how complete they are if you consider the fact that other routers may have the same functions but only after developing and writing complex pieces of code in order to make them operational". With a great added value: "The time to market for a new application with eWON is much shorter than the minimum time required using other solutions and for the customer, who has already made a heavy investment in the mechanical part, reducing start-up time becomes essential."

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The goal of a mini wind turbine system involves allowing the individual variables to be read as well as providing access to the various parameters on the tower IP network. This means routing, monitoring, alarm and logging features, which cohabit in the eWON solution and place a powerful tool for increasing application quality in the hands of the system integrator. In a mini wind turbine application the parts typically required are a PC, a PLC, an inverter to transform the energy of the blades into electricity to be sent to the grid and a DVR that records the images that will be used, for example, in customer demonstrations. The communications part is usually entrusted to a satellite link since an ADSL network or 3G coverage is not optimal in all the areas suited for mini wind turbine installations.

Whether in a preliminary analysis phase or monitoring actual activity, eWON allows you to carry out various functions with a single product, keeping implementation costs and any architecture upgrade costs down.



Interesting prospects in the water treatment sector.

The possibility of personalising the eWON is also an important requirement for W2W Solutions, which is developing a new Web interface in JavaScript to monitor widespread and isolated plants. In fact, for applications involving water treatment, the customer often needs to monitor a single point of the system such as a specific aqueduct or purification plant. The same thing occurs in broadcasting as well, where in addition to the general performance of the system of devices that handles RF signal repetition, the ROS must also be measured constantly, in other words, the parameter that measures transmission quality. The eWON routers can therefore be dedicated to monitoring this parameter, thereby guaranteeing transmission continuity without interruptions for the providers. Individual monitoring and complete system control: these two variables are not mutually exclusive because eWON can perform both functions without them having an impact on one another.

"One of our customers needed punctual monitoring of purification systems in medium-small plants which cover the needs of 5,000-10,000 resident towns. Contrary to what occurs in large and structured plants, here we started with monitoring and then added on the automation and remote control features. Thanks to the possibilities that the eWON Flexy modular router provides, we can add an input/output board in order to allow bidirectional control and any threshold signalling, thereby allowing the operators to take prompt decisions when problematic situations are detected."



PHOTOVOLTAIC

A saturated market

Whilst the mini wind turbine and water treatment sectors have significant room for growth, the photovoltaic situation is quite different, as Caspani points out: "Large plants on the ground are not being built any more. The market is saturated, so systems integrator operations are all focused on maintenance operations which in any case are extremely important because unexpected breakdowns can lead to prolonged downtime for the systems with serious inconveniences and economic losses." In this case the eWON routers have already shown that they can make a difference because of the alarm notification service and the possibility of accessing the application data from a Web browser, which simplifies routine and special maintenance operations.

For mobile device applications

Strongly motivated by the significant increase in mobile device use, W2W Solutions has also launched an app for smartphones and tablets which allows the user to monitor the values of their plants: the Energ&MetRY app is available for Android devices on Google Play Store to monitor all the functional parameters of plants from thousands of kilometres away or abroad simply and in real time. This means that action can be taken even more quickly in the event of sudden critical situations, or you can simply keep track of plant production in order to map trends.

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