Ewon® BY HMS NETWORKS

Case study:
Robotics

Customer:	ABB Robotics
Country:	Sweden
Solution:	Data Collection for IoT Applications

Benefits

- Provides predictive maintenance remote services
- Collects health data over 15000 robot worldwide
- Reduce MTBF and provide immediate support

"Ewon puts us in an excellent position to boost our success and gives ABB a powerful competitive edge."

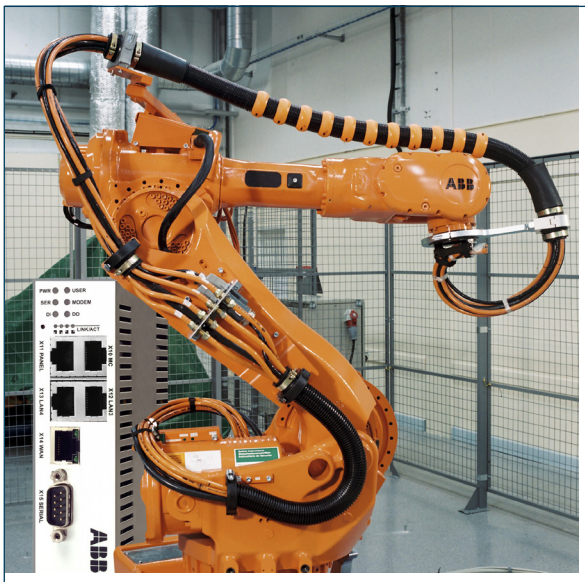
Dominique Blanc, Product Manager Remote Service, ABB Robots

ABB Robotics selects Ewon to deliver remote service on a global scale.

ABB's Remote Service solution allows increased production uptime, reduced mean time between failure of robots and delivery of new services to customers. With Remote Service, the robot itself automatically alerts the on-call service engineer, who can immediately access detailed robot data and quickly identify the root cause of the fault. From that moment, ABB can offer support without being physically at a customer's side and drastically reduce the number of on-site travels."

To achieve this, ABB Robotics selects Ewon, the leading manufacturer of industrial M2M routers. "We were looking for off-the shelves solution to reach remotely ABB robots all around the world. We select Ewon for their profound experience and knowledge in Industrial Internet M2M Routers and wide products portfolio. Ewon puts us in an excellent position to boost our success and gives ABB a powerful competitive edge.", said Dominique Blanc, Product Manager Remote Service, ABB Robots.

The role of Ewon centers around the concept of logging a robot's key performance data and sending this remotely to an ABB service center via GPRS technology. The information can then be viewed, analysed and reported to customers. By monitoring robot condition, proactive actions can be decided to avoid potential failures that might happen in future. "Ewon offers a powerful JAVA platform that allowed us to develop our services. All communication aspects are managed by the Ewon industrial router and it allows us to concentrate on our core business: the robot and advanced diagnostic methods", said Mr. Blanc.



With Ewon, ABB is in an excellent position to boost our success and give us a powerful competitive edge.

From left to right: Frederik Vetander, Supply Manager, Robotics Service, ABB Robotics Serge Bassem, CEO, Ewon sa Dominique Blanc, Product Manager Remote Service, ABB Robotics.

Keeping up with the evolution of communication technology

Ewon is currently operational in 30 countries for ABB Robotic. Ewon ensures perfect compatibility with GPRS networks worldwide. When GPRS network is not available, ABB Robotics connects the robots to the ABB service center using Ewon brand new Internet service Talk2M. Talk2M allows secured communication between robots and the service centre over internet.

Fruitful Join collaboration

The successful deployment comes from a very tight collaboration between Ewon and ABB team either in R&D, Quality and supply chain. ABB and Ewon have settled a global frame agreement to reinforce the strategic collaboration between the two companies.

“ABB offer us the unique experience to deploy our product over 35 countries in a single application, demonstrating our technology and improving our competence in large scale M2M project” said Serge Bassem, Chief Executive Officer of Ewon.

Conclusion

Ewon allows ABB Remote Service to improve availability, fewer service visits, lower maintenance costs and maximized total cost of ownership. This unique service sets ABB apart from its competitors to improve customer satisfaction and drastically reduce environment impact with less travels.

Learn more on www.ewon.biz

The Ewon Flexy is a multipurpose internet data gateway that allows Machine Builders to monitor and collect vital KPIs for analysis and predictive maintenance.

WATER TREATMENT

Benefits

- Fast and efficient remote support
- More than 100.000 km saved each year
- New monitoring services based on eWON technology

Solution:
Remote Data

System Integrator: Autech Tesla
Customer: Aquila
Country: Germany

A new generation of pools

To ensure the water quality in swimming pools is correct, there are complex technical processes going on in the background. Thanks to eWON, service technicians can now react quickly, even at weekends, before problems strike.

There are a whole load of processes going on behind the scenes at swimming pools, spas and hotel pools to ensure that no area becomes a health hazard. The processes used here are similar in all pools:

The water is passed through various filters to remove unwanted materials. The pH value is then measured and acid or alkali added as required to maintain a constant, neutral, skin-friendly level of 7.0 at all times. Also, the chlorine level is constantly checked and corrected to prevent the spread of bacteria.

The technology and arrangement of pumps and nozzles are by no means random, it is calculated precisely. There must be no dead corners of the pool with no flow through them, as the water quality would begin to suffer.

The processes are complicated, this is why there are swimming pool specialists who deal with the associated pumps and controllers.

Aquila and its sister company Autech Tesla

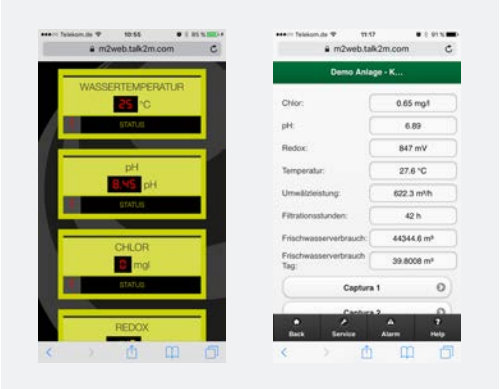
Aquila Wasseraubereitungstechnik GmbH, among the German market leaders in Water Treatment, is characterized by its energy-efficient solutions. In order to make the most of this potential, it also offers all the control technology which is configured and commissioned by its sister company Autech Tesla.

Autech Tesla equips all its systems with a remote maintenance option that allows Aquila to keep an overview of all system data, look for problem sources or carry out software updates quickly and inexpensively.

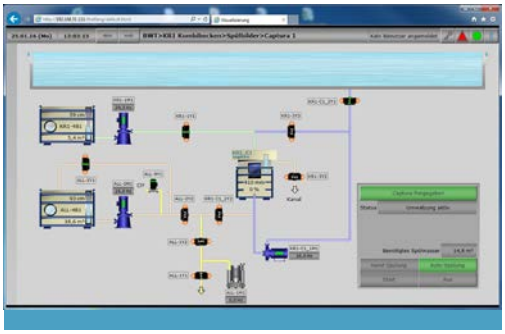
"The option of remote maintenance is essential when it comes to troubleshooting" explains Frank Weiß, Managing Director at Autech Tesla. "We had a case when the PH value could not be brought under control. The customer called us, we looked at the system data and came to the conclusion that the wrong canister had been connected to the system at the pool." This meant we could pinpoint and resolve the problem within a few minutes - if somebody had had to drive to the customer site, the pool would have had to be closed in the interim and the water quality would have suffered dramatically."

The customer is not the only one who benefits from this option. Frank reports:

> **"We save more than 100.000 km a year thanks to remote maintenance."**



Data from the control systems connected can be visualised on any terminal with a web browser using the M2Web service from Talk2M. This means the system status can be viewed from anywhere at any time.



How the AT Suite displays the system on the screen. Everything is clear and any irregularities can be spotted immediately. The measurements can also be used for operational data recording in line with DIN.

Frank Weiß, Managing Director at Autech Tesla and Fouad Boudraa, Sales Engineer at Wachendoff Prozesstechnik, have been working as a team for many years.

The secure eWON Talk2M connectivity platform

The Talk2M online service portal from eWON ensures ease of use even when the system is live. In conjunction with the eWON routers, it enables access to the many pools that Aquila and Autech Tesla have set up.

> **“Talk2M security system even impresses the customers’ IT experts.”**
>
> Frank Weiß - Autech Tesla

The decisive added value of the Talk2M online service portal is the complete integration of IT security standards and encryption technology in the form of VPN and HTTPS technology, plus central user and device management. This does not require any changes to the security settings of the IT network on either side, as communication is only via outgoing connections and generally standard ports which are already approved. Numerous additional security mechanisms, such as a key switch or two-factor authentication, ensure additional security. This even impresses the customers' IT experts.

Autech Tesla monitoring services

The eWON Remote Data solution allows data from the connected control systems to be visualized on any terminal device with a web browser. The data is also available in a smartphone app or via the “AT suite” visualization system, both built on top of the eWON platform.

The “AT suite” visualization system, which was developed in-house by Autech Tesla and runs on a panel PC in the system, can be accessed by the pool manager, the control room of council operating the pool or the facility manager in his office. They can all view the system data at any time or receive error messages as e-mails or text messages to their phone via the integrated alarm management system. Additional services such as regular sending of electricity and gas consumption figures can also be included.

For the site itself, Autech Tesla mainly uses the high-speed mobile phone version, which works independently and does not require an on-site Internet connection. The engineer can set everything up, even when the data technology infrastructure on-site is not yet finished.

A large display at the swimming pool is also controlled by the eWON router. Scripting functions are used to convert the data between the control systems protocol and the TCP/IP based protocol for the display.

“Before we started to use eWON, there was a modem solution which was very slow and not compatible with increasing requirements. It could not even implement software updates because of the data volumes.” Frank Weiß explains.

Aquila now supports over 300 systems across Europe using the eWON IIoT router and the Talk2M online service portal on a 24/7 basis. “There is always a technician on call who can view the system data from home.” Frank Weiß explains. He will continue to rely on the tried and tested eWON technology and the partnership between Autech Tesla and Wachendorff Prozesstechnik for future projects.

TRANSFORMERS

Benefits

- Monitor transformer status in real time
- Optimise its performance and predict its remaining lifetime
- Evaluate the risk of failure in advance
- Schedule maintenance activities based on actual conditions to optimise the associated costs
- Actuate controls on the devices to optimise consumption and thus achieve energy efficiency

Solution: Remote Data
- www.ewon.biz/remote-data -

System Integrator:
W2W Solutions Italia Srl
- www.w2wsolutions.it -

Customer: Tamini Trasformatori
- www.tamini.it -

Distributor: EFA Automazione
- www.efa.it -

Give Your Transformer An Extra Life

A story about preventive maintenance & MQTT

To ensure a long working life of its transformers for steelworks, Tamini Trasformatori has implemented an advanced real-time remote control and history data analysis solution for preventive maintenance. At the core of the system developed by W2W solutions lies the eWON Flexy IIoT gateway using MQTT technology.

Remote assistance for transformers is often provided in the field of energy distribution networks while it is still very new when it comes to metallurgy. Tamini Trasformatori designs transformers for networks and steelworks. The function of the transformers for steelworks is to prevent alternating cycles of high energy stress (electric current and power). Their operation must be continuously monitored; otherwise, there is a risk of deterioration and damage to the system.

Continuous data monitoring for preventive maintenance

Sophisticated algorithms first analyse the transformers historical data. Then a compilation of trends reveals the process status and predicts future conditions. The data which the monitoring system is based on include: the system data (voltage, current, temperature of cooling water, etc.), and specific machine data (temperature, oil levels, alarm signals, gas content in oil, the absorption of various components, position and number of actuations of the switch, etc.). The solution calls on advanced and smart instrumentation capable of providing data in real-time to collect these specific data from the machine.

The information that is gathered and appropriately processed allows for evaluation of the transformer performance together with the actions to be taken to optimise operation. As a second step, the system enables Tamini Service personnel to take remote action and provide real-time support to the customer/user.

Also, alarm thresholds can be defined by the Tamini specialists. In transformer operating conditions, if the pre-alarm threshold is exceeded, notifications are automatically generated and sent to Tamini Service personnel, who take timely and proactive action to solve the problem. In most cases, interventions can be done remotely, which drastically save time and costs relating to onsite travels.

Maximum simplicity and integrability

Tamini's initial intention was to base the application on a standard analogue/digital interface by wiring every sensor with a series of cables to carry the signal. As an alternative, W2W Solutions redesigned the solution using a single communication bus, Modbus. This reduces the wiring and optimises the system from the standpoint of cost and lightness.

An IIoT gateway fully adaptable to Tamini's field requirements

For this IIoT project, W2W Solutions and Tamini decided to use eWON Flexy routers from HMS Industrial Networks with MQTT technology. eWON Flexy is a combined remote access router and IIoT gateway designed to fully adapt to the requirements of many different industrial applications. W2W solutions chose to build the remote-control architecture around this device mainly for the versatility of the product concerning hardware interfaces in the field. It is made up of combinable modules: choosing the most appropriate functions and protocols for your own needs, then connecting them, and finally, personalising the flow control and management applications. With the need to interface analogue inputs, digital inputs, and Modbus/TCP and to send data wirelessly on a 3G/4G network, eWON was able to guarantee maximum integration of the parts.

MQTT technology for data transfer

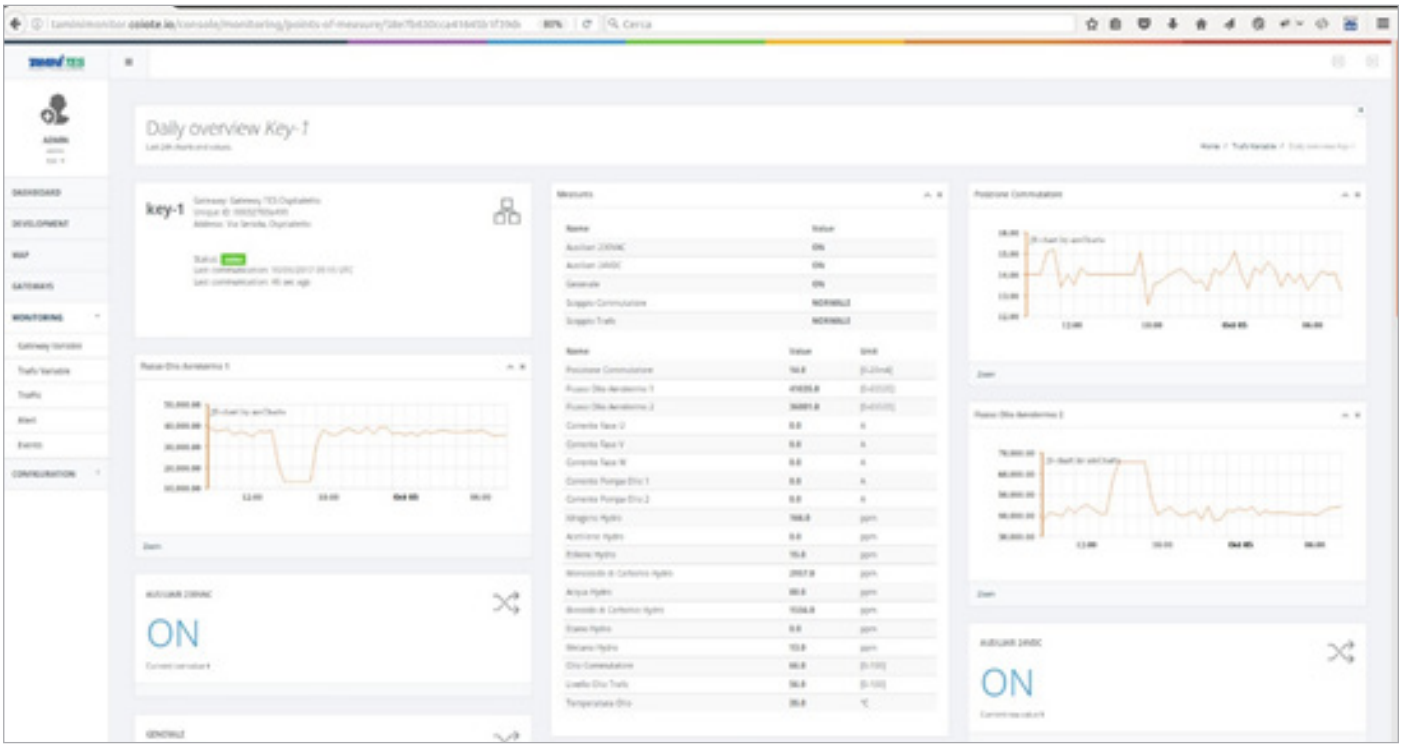
The Flexy device supports MQTT technology which is fully compatible with the CoIOTe Platform cloud system (www.coiote.io) developed by W2W Solutions.

MQTT is a very lightweight and reliable protocol that is catching on, thanks to the arrival of the Internet of Things. The protocol is much appreciated as it guarantees data transfer even when connections are not entirely stable.

A successful IIoT project

Tamini has gained several advantages by implementing such remote monitoring and control system. For starters, there is an opportunity to offer customers the possibility to continuously monitor their transformers with obvious improvements in preventive maintenance, transformer lifetime, and cost optimisation.

The real-time control of operating data enables a whole set of functionalities that provides energy efficiency. eWON Flexy's versatility in interfacing with the field and the cloud has brought simplicity and performance to the system architecture. The use of the MQTT protocol to transfer data has simplified communication and guaranteed lightness and stability in line with IoT directives.



Tamini's remote monitoring and control system in action - running on Coiote IIoT Platform developed by W2W Solutions.

Ewon® BY HMS NETWORKS

Case study:
Packaging

Customer:	Packaging Automation Ltd
Country:	UK
Solution:	On-premise Data Monitoring

Benefits

- Remote access and faults diagnostics regardless of the machine's location
- Maintain higher levels of production and improve OEE (overall equipment efficiency)
- Web-based dashboard of the machinery with live production statistics

Ewon Flexy provides tray sealing machines with real time production data

By using Ewon Remote Data solution, a manufacturer of high speed food tray sealing machines is now able to offer its customers a range of addedvalue options including real time visualisation, production management and fault diagnosis tools, which minimise costly downtime in high pressure food production environments.

Packaging Automation Ltd (PA)

Based in Knutsford, Cheshire, Packaging Automation Ltd (PA) is a leading manufacturer of tray sealing and pot filling machinery, which are used in a wide range of applications in the food industry, including fresh produce, soft fruit packing, fish, seafood, meat, ready meals and sandwiches, as well as pot filling for puddings and sauces. Full packing lines can be specified and installed to include tray denesting, conveyoring, tray filling and film sealing.

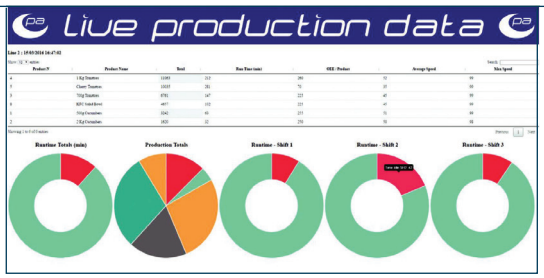
Higher levels of production and improved efficiency

Tray sealing machines are capable of sealing from 12 to 200 packs per minute. These machines are fitted with the Ewon Flexy and Talk2M solution, which enable remote diagnostics and real time visualisation of live production data on the machines. As Rui C., Senior R&D Engineer at Packaging Automation Ltd states: "The Ewon Flexy router and Talk2M solution provide us with remote connectivity into the heart of the customer's machine via the Internet. This enables our engineers to remotely access and diagnose faults, regardless of the machine's location, so that we can get to the root cause of stoppages quicker and help our customers maintain higher levels of production and improved OEE [overall equipment efficiency]. These features are critical to our 24/7 customer support service."

More than Remote Access

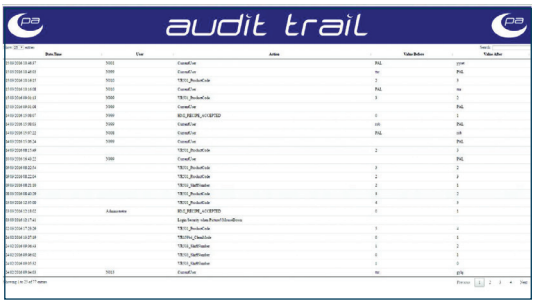
He continues: "In addition, we can also offer customers a live, web-based view of their machine and its current operating state [stopped/running], as well as live production statistics including output, current running speed and historic details of stoppages and changes to machine parameters. We've developed mobile dashboards that allow our customers to compare OEE statistics across different products on each line, which helps them to identify trends and performance variations by shift and line. Inefficiencies or idle time can be spotted quickly in order to prioritise improvement activities."

Single lane tray sealer ‘Revolution’ by Packaging Automation Ltd.



Immediately see live OEE stats for each line.

Mobile dashboards allow you to compare OEE stats across different products on each line.



Access historic data such as operator changes to settings.

«Exactly what our customers wanted»

In 2013, PA commissioned Lancaster University to conduct some market research on its customers. This involved asking a sample of PA’s customers what kind of data they would find useful to visualise on their tray sealing machines. The feedback was that they wanted to see live, real time production data in the form of KPIs, OEE, machine speeds, waste, efficiencies, audit trails, alarms, etc. As Rui C. comments: “Shortly after the research was concluded, I attended the Ewon FlexThink Conference in Belgium, where the Ewon Flexy router was launched. Whilst there, it very quickly became apparent that the Ewon solution could provide exactly what our customers wanted in terms of real time production data. I also liked the fact that the solution was flexible, affordable and easy to integrate for both our small and large food producing customers.”

After the FlexThink conference, Rui contacted Ewon’s UK agent M.A.C. Solutions, who advised and guided Rui on how to integrate the Ewon Flexy with the tray sealing machines. “I’ve had a very good working relationship with M.A.C. Solutions over the last two or three years. The Ewon Flexy is a very flexible solution that allowed me to develop a range of added-value options on our high speed tray sealing machines over the space of about four months.”

Conclusion

“Ewon Remote Data is a low cost solution that is easy to use, easy to deploy and easy to scale up. There is no dependency on an Internet connection, as the system still works locally if the customer only wants to use the system internally. For those customers who do use it over the Internet, web access is totally secure. Customers who use our production management [Data Connect] software absolutely love it and want more of it. We are therefore already developing new features and add-ons to satisfy these needs,” concludes Rui.

> *“It very quickly became apparent that Ewon could provide exactly what our customers wanted in terms of real time production data.”*
>
> Rui C., Senior R&D Engineer at PA Ltd

Learn more on www.ewon.biz

The Ewon Flexy is a multipurpose internet data gateway that allows Machine Builders to monitor and collect vital KPIs for analysis and predictive maintenance.