

*Marex Technology standardizes on the zenon software platform*

# Next-generation solutions for wastewater treatment plants

Marex Technology is one of the leaders in the biological and industrial wastewater treatment industry. Since its founding in 2008, the company has grown to now employ more than 100 staff. From the beginning, the team has successfully implemented projects in the water industry in Poland and around the world. The technological solutions developed by Marex Technology's engineers are all based on the zenon software platform.



Our planet's limited water resources force us not only to save water but also to reclaim it, for example, by treating wastewater. Water reclamation is possible through industrial and local wastewater treatment plants. This makes the construction and supervision of these facilities particularly important in our changing world. Faultless operation of these facilities ensures our uninterrupted supply of clean drinking water.

## USING THE ZENON SOFTWARE PLATFORM FROM DAY ONE

Marex Technology has used zenon from the very first project it created. The company's product portfolio covers equipment for chemical and mechanical wastewater treatment, including sieves, polymer stations, flotators, and presses of very

different designs. These devices are available as independent units or as whole sets of cooperating machines connected by a common control system. In addition, Marex specializes in the supply of equipment and components for biological wastewater treatment plants, providing comprehensive services from design, through manufacturing, to delivery and installation at the customer's site.

## SOFTWARE-POWERED AUTOMATION

In the creation of solutions for its customers, the main challenges Marex Technology faces are the need to integrate multiple modules into a single system and the need to identify errors easily and efficiently. This is made easy using the zenon software platform. The implemented systems control the entire



HMI panel in a wastewater treatment plant.



Operator panel interface displaying mechanical-chemical and biological parts

installation from the level of the supervisory system and operator panels located in different areas of the facility.

The most important responsibility of the system is data acquisition from measurement probes. Typically, this requires integration with sc1000, sc4500 transmitters, and a pH-meter and the display of the associated data.

“These components come from different producers, so zenon’s ability to integrate with different hardware is extremely important to us,” says Piotr Owczarzak, automation engineer at Marex Technology.

Another advantage of zenon is the opportunity to control the rotation of actuators, which has a direct impact on the control of electricity consumption. The automation of the process increases its efficiency, allowing Marex Technology’s clients to treat not only wastewater generated by industrial production, but also to collect wastewater from local residents.

## STAY SECURE WITH SMART SOFTWARE SOLUTIONS

By using zenon for visualization and control via HMI panels and as the higher-level SCADA system, operators are able to view process parameters and control the entire plant without having to move around the facility. This not only simplifies the day-to-day handling of the process, but also enables faster and more efficient responses to any alarms that might arise. In many cases, this quick response capability provides an opportunity to prevent failures from occurring.

The operator receives clear information about where an error occurs thanks to a 1:1 visual representation of the process through the implementation of 3D machine models. This makes process management extremely intuitive and

simple. Furthermore, users greatly appreciate the direct integration of the camera view inside the zenon visualization, providing full control of the process from one system. The whole system utilizes zenon Client-Server technology to assure the standards of communication and data security based on TLS 1.3 encryption between devices.

Piotr Owczarzak states, “Thanks to the zenon software platform, we can control the smoothness of the installation in the facility.”

## QUICK AND EASY IMPLEMENTATION

Marex Technology’s use of the zenon software platform in wastewater treatment plants frees the end customer to optimize processes and reduce costs. The zenon development philosophy of “parameterization instead of programming” gives the Marex Technology engineers the ability to quickly and efficiently design applications for their end customers.

Marex Technology engineers work directly with the Technical Support Department of COPA-DATA Poland, which enables them to find solutions to emerging challenges together. This approach ensures the rapid, secure and flexible adaptation of the application to customer requirements, reduces the burden of testing, and shortens the time needed for implementation.

One of the biggest advantages for the Marex Technology team is the ability to develop extended zenon solutions with full compatibility between local zenon Service Engine operator applications and the overarching zenon Service Engine supervisor systems. Work is undertaken in a single development environment, with use of the same library of symbols, elements, templates, and Smart Objects – whether developing applications for HMI panels or supervisory SCADA



Polyelectrolyte station with control panel



Control room overview of the wastewater treatment process

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**PIOTR OW CZARZAK,**  
**AUTOMATION ENGINEER AT MAREX TECHNOLOGY**

systems. This significantly improves the work comfort of engineers and delivers a reduction in the costs incurred for developer tools and training.

## 24/7 SUPERVISION

Installations in the water industry, including wastewater treatment plants, must comply with multiple regulations and legislative requirements. That’s because it is important that the treated water meets sanitary requirements. Marex Technology solutions make 24/7 remote monitoring of the installation possible. As a result, staff at the water company can quickly respond to potential failures and reduce the cost of wastewater treatment.

The zenon software platform’s trend reporting capabilities make it easy and accessible to identify where failures occur and to identify opportunities for improvement. Plus, zenon’s advanced reporting capabilities empower users to make improvements in those areas that are particularly vulnerable to error and take a continuous improvement approach to plant operation optimization.

## HIGHLIGHTS:

- zenon as a wastewater treatment plant supervision system
- ▶ Clear and easy-to-use HMI panels
- ▶ Secure and structured authorization management system
- ▶ Support from COPA-DATA
- ▶ Scalability of the system: from a local operator panel to a superior SCADA system
- ▶ Cost savings by using zenon software platform
- ▶ zenon Client-Server network
- ▶ Strong cybersecurity including TLS 1.3 encryption
- ▶ Integration of a camera view in zenon visualization