

*zenon supports seamless equipment integration with MTP*

# Belimed Life Science: Plug and produce for Sterilizers

Belimed Life Science is a leading manufacturer of cGMP-compliant cleaning equipment and steam sterilizers for the pharmaceutical and biopharmaceutical sectors, as well as for laboratories and research facilities. After implementing an MTP Gateway using the zenon software platform, the company's equipment is now ready to be integrated in flexible, end-to-end systems based on the "plug and sterilize" principle.

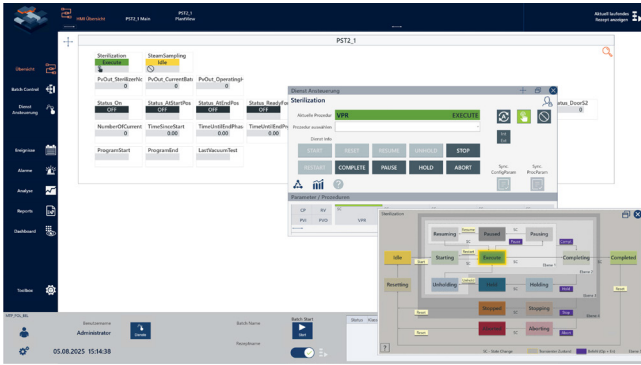


Sterility is critical in pharmaceutical manufacturing: machine parts, containers, and packaging have to be sterilized prior to every use. This is usually done under pressure with steam in sterilizers, which are used in the pharmaceutical industry for medications and their initial packaging. To meet regulatory requirements, sterilizers must eliminate viable microorganisms.

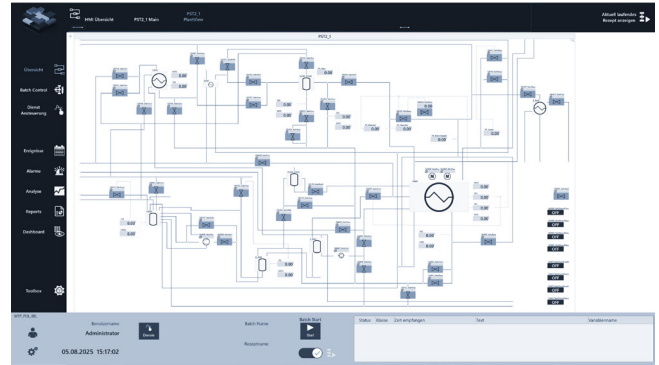
## CUSTOMER-SPECIFIC PROCESS SOLUTIONS

The type of sterilizers familiar to many of us from the dentist's office – mostly table-top units – are not suitable for integration in automated end-to-end solutions for large labs, research facilities or pharmaceutical factories.

Belimed Life Science AG is headquartered in Sulgen, Switzerland, with a branch in Grosuplje, Slovenia. It specializes in solutions for cleaning and sterilization in industrial applications. The company develops and produces equipment and machines for automated cleaning and sterilization entirely in house. Machines are typically combined with the relevant conveyor technology to create precisely tailored, customized workflow solutions. To meet the requirements of the life sciences industry, Belimed draws on its own experience, dating back to 1968, in the field of sterilization and cleaning. In 2024, Belimed merged with Steelco and now operates under the umbrella of the Miele Group.



*The visualization in zenon is clearly designed and ergonomic.*



*zenon provides users with very different views, depending on their roles.*

## TOP STERILIZER AS SINGLE SOLUTION

One of Belimed Life Science's top products is the PST.2 steam sterilizer. This energy-efficient system can be tailored to meet individual customer needs and is available in 19 standard sizes ranging from 300 to 3,430 liters in chamber volume. Custom sizes are also available. The PST.2 can sterilize solids and liquids using the optimal processes for each application. It is equipped with a reliable touchscreen control system that uses state-of-the-art control and process control systems from Siemens or Rockwell.

Sterilizers can provide data via numerous protocols such as OPC DA, OPC UA, Modbus or EtherNet/IP. By default, they provide unidirectional data. In the past, it took a lot of work to integrate them in a customer-specific, end-to-end process control system. It takes time and resources to define and roll out the required interfaces. Commissioning the system required even more resources.

## EASY TO INTEGRATE WITH MTP

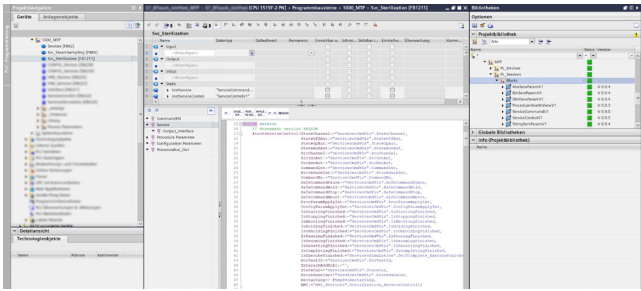
In order to integrate end devices easily and flexibly in end-to-end systems, businesses in industries such as chemicals, food and beverages, cosmetics, and pharmaceuticals are turning to MTP to modularize production processes. This new data standard, created by NAMUR, the Automation Technology Association of the Process Industry, and ZVEI, the German Electrical and Electronic Manufacturers' Association, provides conventions that can be used to describe modular equipment components in a manufacturer-agnostic manner.

The MTP standard defined in accordance with VDI/VDE/NAMUR 2658 consists of a uniform description of the information for the individual modules. This includes which data objects should be recorded and which services should be executed. It also includes the interfaces in the form of MTP files. In addition to the manufacturer-agnostic, functional description of the automation of process modules, the MTP files also contain graphical objects that can be used for visualization. This allows MTP to be integrated in common process control systems with minimal effort, making it easier to construct production facilities in a modular, manufacturer-independent manner.

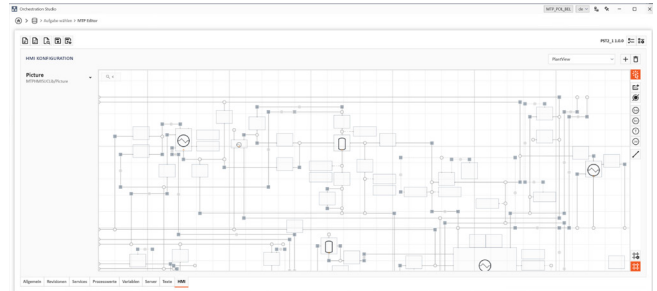
## COMPLIANCE WITH THE STANDARD AS A REQUIREMENT

Given these qualities, it is not surprising that MTP has established itself as a recognized standard in process-driven industries. Belimed Life Science had been planning for some time to go in this direction. The green light came when a major end customer in the pharmaceutical sector made MTP capability a requirement in their request for proposals for new cleaning and sterilization stations.

Belimed uses the zenon software platform from COPA-DATA as its process control and visualization system. zenon enables seamless integration of MTP files in end-to-end projects, where they can be processed like native objects. The zenon Engineering Studio development environment features an import interface. This converts the imported MTP files into Smart Object Templates (SOT) for integration in the higher-level Process Orchestration Layer (zenon POL).



Using the MTP Library PL V1 for Siemens S7 from COPA-DATA, system integrator RETEL Neuhausen created an easy-to-configure MTP Gateway.



The MTP Gateway, which runs directly on the machine control system, makes it easy to integrate devices and services in the end customer's zenon Orchestration Studio.

## COMPLIANCE WITH THE STANDARD IS PROVIDED

“MTP isn’t a special request from one single customer or a passing trend, but rather the opportunity to equip our machines and equipment with ‘plug and produce’ capabilities,” explains Markus Maier, Sterilizer Product Manager at Belimed Life Science. “That’s why we have decided to fully comply with this forward-looking standard.”

The customer supported this project by contacting COPA-DATA and its Swiss sales partner **SATOMECH AG**. They, in turn, recommended teaming up with the system integrator **RETEL Neuhausen AG**. In close cooperation with the control software engineers at Belimed Life Science, the COPA-DATA Silver Partner implemented an easy-to-configure MTP Gateway in just a few months. This gateway runs directly on the machine control system. It is linked to the existing equipment control software and connected to a local visualization system.

## MTP LIBRARY AND POL FROM A SINGLE SOURCE

One thing that greatly contributed to the fast rollout was using MTP library “PL V1” for Siemens S7 controllers, which COPA-DATA makes available for use directly in the Siemens TIA Portal engineering environment. “The S7 MTP Library PL V1 contains all the functions required to create the MTP gateway,” says Tino Rüedi, OT Solution Architect and Project Manager in the Process Technology division at RETEL Neuhausen. “With easy-to-configure modules, it promotes efficient engineering.”

Because the Process Orchestration Layer and the MTP Library are from the same manufacturer, the solution reduces coordination effort and significantly saves time in engineering by eliminating connection tests. COPA-DATA Support also contributed to hitting the project milestones by providing advice and assistance when it came to technical challenges.

## PLUG AND STERILIZE

“The MTP Gateway for Belimed Life Science delivers proof of the concept. It shows that even complex, specially designed equipment can be connected easily to the existing control software,” states Tino Rüedi. “This provides added value both for Belimed Life Science as an equipment supplier and for its end customers, who benefit from being able to quickly integrate the equipment in their existing control systems.”

The results are impressive. With the MTP Gateway, Belimed Life Science’s cleaning and sterilization stations now feature a clearly structured and defined interface that supports quick and easy connection to the process control system (zenon POL) with all the variables required and end-to-end equipment visualization.

“The integration was implemented seamlessly based on the clear structure and standardized zenon modules and the MTP Library,” reports Alejandro Brunschweiler, Head of R&D Software at Belimed Life Science. “Thanks to the consistent engineering approach, we were able to get our equipment ready to be integrated in flexible, end-to-end systems based on the ‘plug and sterilize’ approach.”

“ *The integration was implemented seamlessly thanks to the clear structure and standardized zenon modules, as well as the MTP Library.* ”

**ALEJANDRO BRUNSCHWILER,**  
HEAD OF R&D SOFTWARE BEI BELIMED LIFE SCIENCE

#### ABOUT SATOMECH AG

SATOMECH AG is a retail company with dealerships for automation systems. The zenon distributor, based in Cham, provides its customers in Switzerland and Liechtenstein with highly qualified support, consulting, and training. It has a large warehouse in Switzerland. Sales manager Elger Gledhill was responsible for the project with RETEL. [www.satomech.ch](http://www.satomech.ch)

#### ABOUT RETEL NEUHAUSEN AG

RETEL Neuhausen AG is an independent engineering company with over 50 years of experience in automation and digital solutions. As a COPA-DATA Silver Partner, the company has specialized expertise in the regulated life sciences environment. With its interdisciplinary team, RETEL Neuhausen AG develops customized, validated, and sustainable solutions – from process automation to digital transformation – and positions itself as a reliable, full-service partner for its customers. [www.retel.ch](http://www.retel.ch)

#### HIGHLIGHTS:

zenon MTP Gateway for cleaning and sterilization equipment from Belimed Life Science provides the following:

- ▶ Full conformity with VDI/VDE/NAMUR 2658
- ▶ Fast and efficient integration in flexible end-to-end systems
- ▶ Time savings in engineering by eliminating connection tests
- ▶ An ergonomic solution across the equipment landscape