



When IT and OT join hands

At its headquarters in Boffzen, Germany, Noelle + von Campe, a manufacturer of high-quality glass packaging, has commissioned one of the glass industry's most advanced melting furnaces. The company's technology partner for **plant-wide automation and virtualization** at the **highest level** is Siemens. It's the first time that a glass manufacturer has connected the SIMATIC PCS 7 process control system to SIMATIC Virtualization as a Service (SIVaaS).

The **SIMATIC EnMPRO** energy management solution is also connected to the control system. The result is a prime example of **successful IT/OT convergence**: a state-of-the-art IT infrastructure in an OT environment delivering **cost-efficiency and sustainability**. Learn more at **[siemens.com/glass](https://www.siemens.com/glass)**.

Ever since its founding in 1866, Noelle + von Campe – with headquarters about 60 kilometers east of Paderborn in Boffzen, Germany – has embodied innovation on a foundation of tradition. The company continues to follow this principle up to the present, as demonstrated by the commissioning of its new melting furnace in early 2022.

“Our expectations for the new Furnace 5 were extremely high in terms of consistent, end-to-end automation, digitalization, standardization, and data transparency. Our success has taken us into uncharted technological territory in the glass industry.”

Stefan Schlothane, a department head at Noelle + von Campe.

Working with Siemens, Noelle + von Campe completely automated the new furnace. The two companies have been collaborating successfully for many years. Among other things, the glass manufacturer relies on the SIMATIC PCS 7 process control system. **“With its extensive industry knowledge and comprehensive automation and digitalization portfolio, Siemens is exactly the right partner for us.”** *Schlothane*

Pioneers in the glass industry

The goal was ambitious, involving a fully integrated IT/OT convergence that included virtualization of the infrastructure. To realize this for the new melting furnace, Noelle + von Campe and Siemens connected the SIMATIC PCS 7 process control system to SIMATIC Virtualization as a Service (SIVaaS). The underlying principle: Powerful server systems allow the process control system to operate centrally and independent of local hardware. This solution enables a whole new level of data transparency in real time, from the batch plant to the hot and cold ends and all auxiliary installations. For example, it simplifies plant maintenance and repair. Participating OEMs also benefit from the concept because diagnoses, configurations, and simulations are easier to perform. Among other things, reliable and standardized interfaces make engineering, integration, and commissioning simpler for machine builders. Another advantage is that the high volume of real-time information enables the production facilities at Noelle + von Campe to respond quickly to changes in the market. Siemens was in charge of setting up the virtualization server, configuring the virtual machines and applications, and installing and modifying the operating system. Technical support, system documentation, and after-sales service are also part of the service package.

Another characteristic of the SIVaaS virtualization solution is that it decouples a computer's operating system and user software from its host (hardware). The two are combined and made available in a virtual machine. A hypervisor is integrated in a powerful server as an additional software layer that manages the PC's hardware resources and

dynamically distributes them on the virtual machines. Several virtual machines can run simultaneously via one host. Access is via thin clients. What stands out is the fact that Siemens makes this solution available to its customers as a complete, ready-to-use system, including configuration and system support. The complete system (Industrial Automation DataCenter) can be expanded to include more components like archiving, disaster recovery, and a cybersecurity infrastructure, which means that it offers maximum flexibility for meeting tomorrow's requirements.

Less hardware, centralized updates

Siemens also provides Noelle + von Campe with access to numerous applications via the virtual machines. All applications and the complete software are always available in the latest version via the virtual machine. **“Combining computers on one virtualization server makes it possible to manage, diagnose, maintain, and update all systems centrally. This saves time and ensures that the software status is uniform throughout the system.”** *Schlothane*

As a result, modernizations are performed more quickly and cost-efficiently. This really pays off, given the fact that PC-based system components often have to be replaced multiple times over the course of a plant's lifecycle. Another advantage is the space that using virtual machines saves in secure and air-conditioned server rooms, where space is always limited. Plus the automation system can be easily and efficiently expanded using preconfigured templates. These virtual machine templates are fast to configure and can be put into operation in just a few minutes.



The Siemens process control system operates centrally and independent of local hardware, ensuring updates. **Source: Noelle + von Campe**

More security and support

SIVaaS also improves plant security, because data security is automated and changes can be tracked. **“This allows us to know exactly who made what changes and when: for example, when a recipe is modified.”** *Schlothane*

As a result, the amount of manual work for Noelle + von Campe employees is reduced.

Flexibility is key

Noelle + von Campe manufactures about 700 different items, which is why flexibility is also an important issue in Boffzen. The cost of converting machines, including upstream and downstream processes, is high. **“The only way we can meet our customers’ requirements while also maintaining high quality is with adaptable plants. The new standards and data transparency help us to efficiently implement changes.”** *Schlothane*

Data transparency also makes it easier to comply with regulatory requirements, including providing emissions data from filter systems to regulatory authorities.

Integrated energy management

Noelle + von Campe also relies on a Siemens system for energy management. SIMATIC Energy Manager PRO (SIMATIC EnMPRO) is connected to the control system and is what makes the glass manufacturer’s energy data transparent.

Key performance

With this software, Noelle + von Campe can collect, record, and analyze a wide range of data. **“Whereas before we had only spot measurements, we now have constant information that we use to formulate key performance indicators and generate data reports.”** *Schlothane*

Continuous system measurement generates a lot of information that SIMATIC EnMPRO can visualize in many different ways. For example, the glass manufacturer can determine its energy consumption in real time. **“We use SIMATIC EnMPRO for all furnaces and immediately see the effects of specific measures. This allows us to optimize processes – like using energy more efficiently and reducing costs, which is important for energy-intensive operations like ours. We can only control what we can measure.”** *Schlothane*

The path ahead

Noelle + von Campe is completely satisfied with the Siemens solutions from a single source. That’s why the company is also relying on virtualization and integration into the SIMATIC PCS 7 process control system for the current modernization of its Furnace 4. **“In addition to flexibility and quality, data transparency and standardization are also important factors for our success. So we’ll continue on this path, accompanied by Siemens.”** *Schlothane*



The IT infrastructure and OT environment belong together: Siemens has fully automated Noelle + von Campe’s new melting furnace and connected the SIMATIC PCS 7 process control system to the SIMATIC Virtualization as a Service (SIVaaS) solution. **Source: Noelle + von Campe**