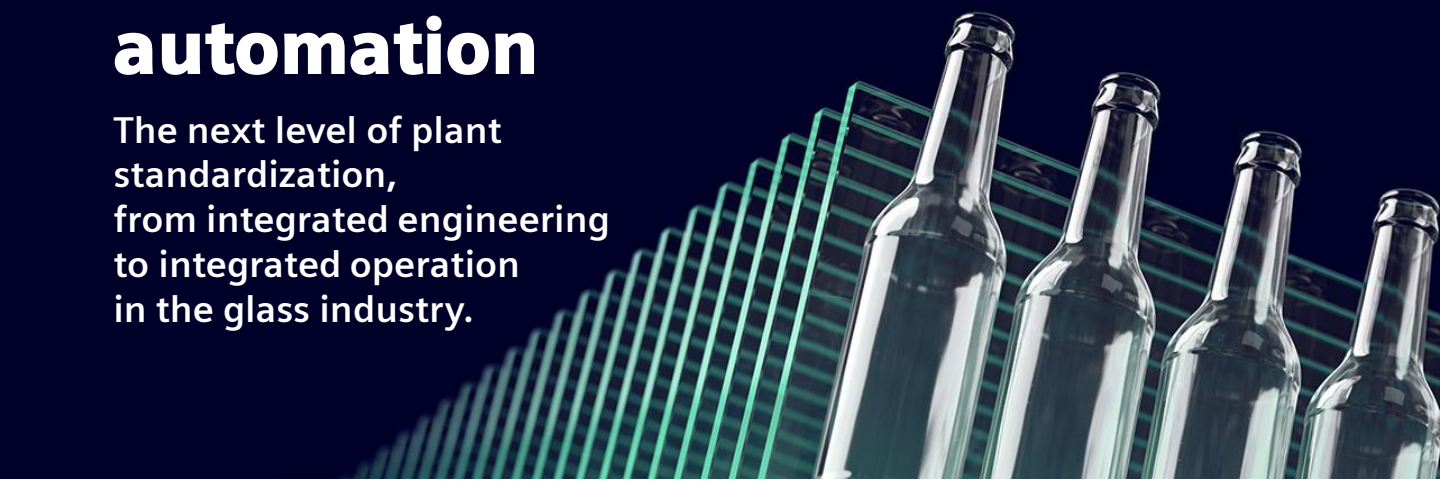
SIEMENS

Plant-wide automation

The next level of plant standardization, from integrated engineering to integrated operation in the glass industry.



The challenge

In the era of globalization and digitalization, it is important to offer a high-quality product in the most cost-effective way possible in order to stay ahead of the competition at an international level. Therefore, in the glass industry, the focus is on the core business: the production of glass.

As a result, the production plants are often constructed by plant builders and OEMs. The individual system solutions of the OEMs are used for the different plant sections, without considering the plant as a whole.

As a result of the mix of different systems, an on-the-fly reaction to changing market conditions is significantly more difficult.
In addition to short-term response options, the workload for maintenance is considerably increased over the entire plant life cycle of 15 to 20 years and operation of the plant is more labor-intensive because there is no uniform look-and-feel and no homogenous messaging system.

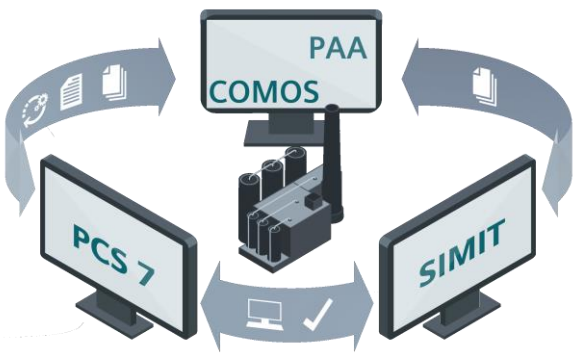
The solution

With plant-wide automation, it is possible to combine all automation components of the different machine and plant builders into a plant-wide total automation solution. This pays off along the entire value added chain – for the plant operator as well as the machine and plant builder.
Plant-wide automation is a holistic solution for the entire life cycle of a glass plant, from plant design to operation.

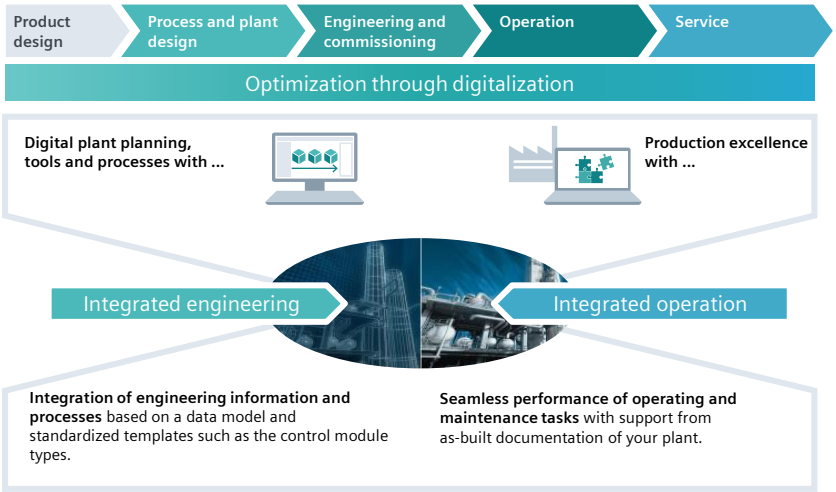
This is possible through the comprehensive product portfolio for the glass industry, including automation technology, industrial switchgear, process instrumentation and analysis and energy technology components.

Further aspects are digital design and virtual commissioning of the plant as a whole, as well as an extensive service portfolio. Industry knowledge and strong partnerships with glass manufacturers as well as machine/plant builders and system integrators form the basis for plant-wide automation.

The plant engineering software COMOS, the process control system SIMATIC PCS 7 and the simulation software SIMIT serve as the core of this automation. Through the interaction of these products, your plant develops from an idea into a future-proof plant.



Digitalization – from integrated engineering to integrated operation



Benefits

Optimum CAPEX
Reduced OPEX

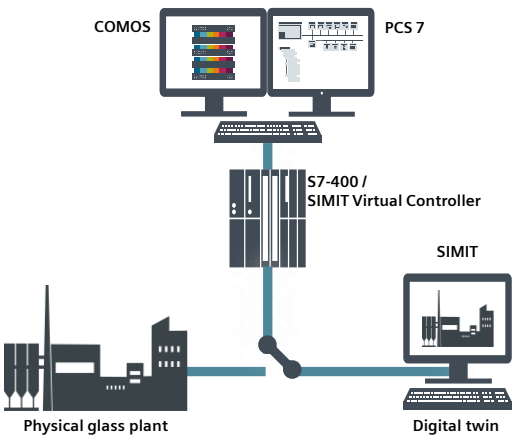
- Increased reliability
- Optimum quality
- Greater flexibility
- Simplified maintenance
- Increased performance

From integrated engineering to integrated operation

For integrated engineering, COMOS provides a shared data platform for plant engineering and plant management. All the relevant engineering disciplines can access the same database. Consistent data management is thus guaranteed. A digital plant twin emerges as more and more plant data is introduced from the various disciplines.
This digital twin guarantees a high level of transparency of the status of the plant and process and opens up many new possibilities throughout the plant life cycle.

While the real plant is still in the development stage, for example in the case of a new construction, COMOS Walkinside can already be used for virtual 3D tours through the plant. This means that service personnel can already be trained (ITS) and the accessibility of critical components can already be checked in this phase.

If the engineering is advanced in COMOS, the automation-relevant data can be transmitted from COMOS to the SIMATIC PCS 7 process system.



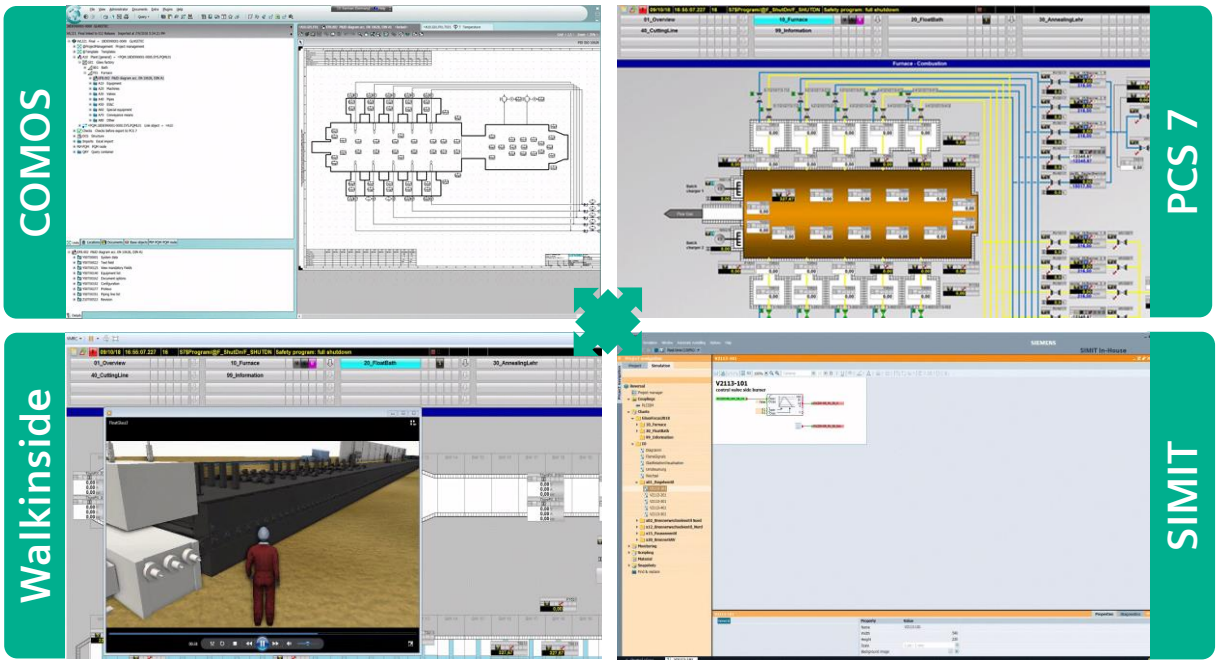
The SIMIT simulation platform can receive automation data directly from PCS 7 and from COMOS. This enables testing of automation and process control functions. This allows errors to be detected and eliminated before commissioning. A SIMIT-based operator training system (OTS) also allows training of operating personnel at an early stage.
If there is a change in the control technology during process mode, it can be transmitted directly to COMOS so that the digital twin is always up to date. This ensures that the plant documentation is always current.

The continuous update of the digital twin is especially useful for maintenance work. Maintenance requirements can be communicated automatically from the plant operator to maintenance personnel with PCS 7 and COMOS. They can be easily synchronized with the further progress of the maintenance work. Maintenance personnel have all necessary information about the critical asset at hand, e.g. diagrams of the actual state, manuals and maintenance instructions.

Benefits of plant-wide automation

- Significantly greater cost effectiveness for the entire plant thanks to increased productivity, better cost transparency and more energy efficiency
- Operating costs up to 25% lower in comparison
- Less time required for design, engineering, commissioning and integration
- Uniform database ensures optimum cooperation between all parties involved in the project
- Protection of intellectual property and secure, simple and low-cost remote maintenance for machine builders
- A broad portfolio of Lifecycle Services

Digitalization – from integrated engineering to integrated operation



Benefits for engineering

Time and cost savings due to standardized software. Proven automation solutions for the entire plant and cooperation with leading machine builders.

Benefits for customers

Central operation, maintenance, secure remote access for all OEMs and, at the same time, open for future innovative solutions and digitalization topics.

Benefits for investment

Reduction of life cycle costs through holistic analysis of the automation system and full plant transparency in terms of quality, quantity and energy efficiency.

Benefits for operation

Homogenous look-and-feel and standardized alarms and messages for the operator.

Available product portfolio

Portfolio	Additional information
COMOS	siemens.com/comos
COMOS Walkinside	siemens.com/comos
SIMATIC PCS 7	siemens.com/pcs7
SIMATIC PCS 7 Plant Automation Accelerator	siemens.com/integrated-engineering
SIMIT Simulation Platform	siemens.com/simit

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