



Reality has no reset button

SIMIT – Virtual commissioning and operator training

[siemens.com/simit](https://www.siemens.com/simit)

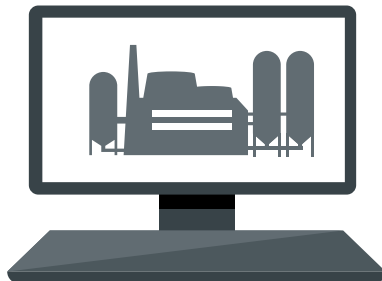
Many challenges ...

Higher levels of automation, new system functionalities, larger systems, more flexible production processes – automation projects are becoming increasingly complex.

Bringing products to the market faster while maintaining the same level of quality requires integrated engineering workflows as well as short changeover and start-up times.



SIMIT



... our solution: SIMIT

Overcome all of these challenges with the SIMIT simulation platform! Use a single platform to:

- perform a virtual start-up – without any hardware!
- test automation applications in a virtual environment – even before installing them in the real system!
- train system operators – in a realistic but safe environment!

Simulation results in higher efficiency throughout all stages of the production and process life cycle. At the same time, it provides a simple means for optimizing processes and gaining operations experience. In contrast to reality, the real-time simulation offers you a protected area for new test scenarios which can be reset or secured at any time.

SIMIT has a flexible and scalable simulation structure and an intuitive user interface. A variety of communication possibilities between SIMIT and external simulators permit the use of existing process knowledge to create even more realistic simulations.

Start or expand your digitalization strategy with the consistent use of simulation – SIMIT provides the ideal platform!

The digital twin:

The virtual installation

The digital twin is the closest possible virtual image of a real system, a simulation model of reality – with all components, their characteristics, functionalities, and parameters. Using software, specialists start collecting plant data as early as the design phase. The simulation platform SIMIT creates the ideal starting point for the digital twin of your system!

With a digital twin, you can start up a system virtually, even during the planning phase. Once the real system exists, data collected from the system is used to keep the realistic virtual image up to date.

The digital twin provides benefits throughout a system's entire life: first to simulate it, then to optimize it!



Forms the basis for digitalization strategies



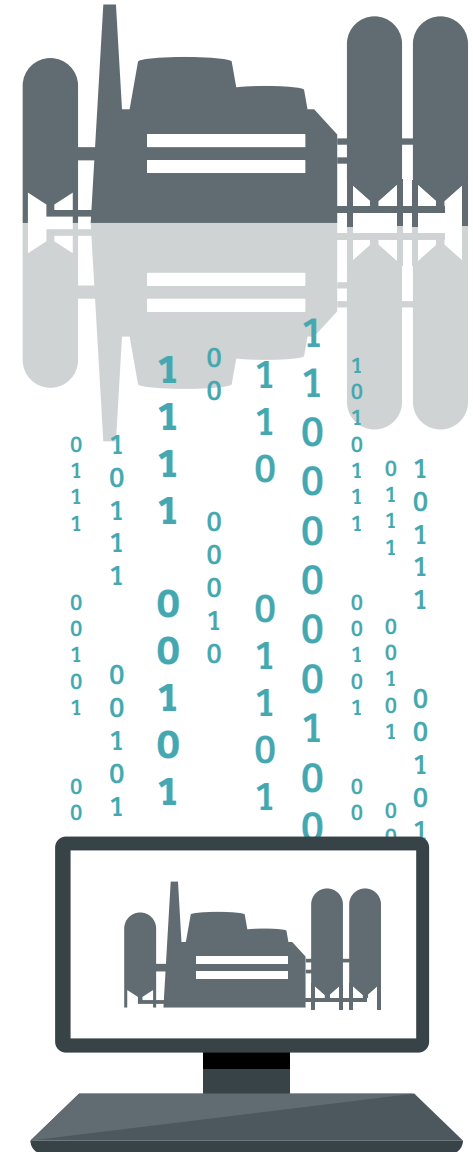
Safe testing of process optimizations and expansions



More transparency in the planning phase



Realistic and up to date throughout the entire life cycle



In the fast lane:

Speed up the start-up

Hardware-in-the-loop



Software-in-the-loop



During virtual commissioning with SIMIT, all automation functions can be safely tested prior to the actual start-up – all systems, machines, and processes are simulated based on the existing planning and engineering data as well as the SIMIT libraries.

With or without hardware? It's your choice!

SIMIT provides all necessary interfaces for communication between the simulation and automation environment. In the hardware-in-the-loop configuration, the automation program is loaded into the real automation system. With the SIMIT Unit, you can connect your hardware via PROFINET or PROFIBUS to the simulation platform.

Alternatively, you can connect without real hardware components: in the software-in-the-loop configuration, the automation program is loaded into an emulated automation system, the integrated Virtual Controller or the SIMATIC S7-PLCSIM Advanced.

Whichever approach you choose, SIMIT will help you uncover development and functional weaknesses in the planning phase. This enhances the quality of your engineering and improves automation solutions.



Use already existing data to create the simulation



Early detection and correction of errors



Higher engineering and automation quality



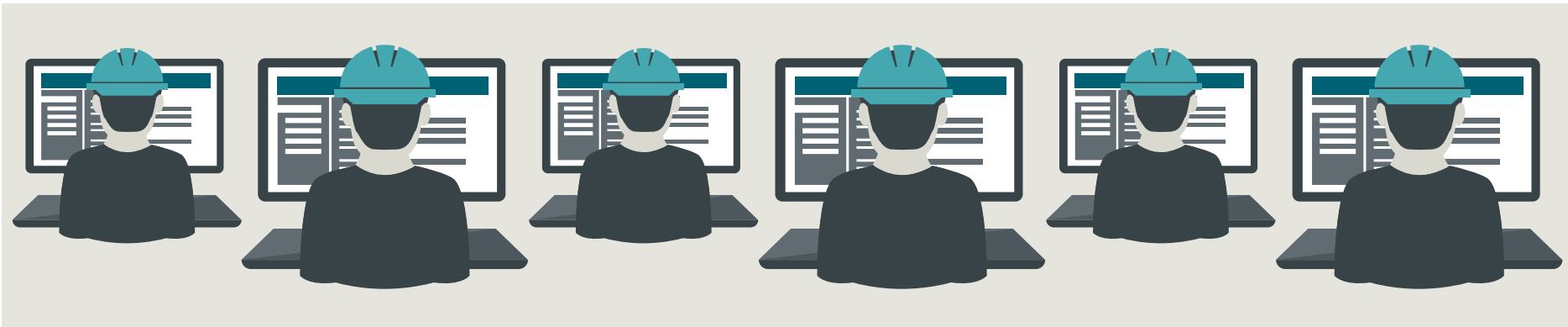
Simulation is possible with and without hardware

“The earlier you catch an error or bad design in the software, the lower the costs to correct them.”

Dr. Michael Krauß,
Senior Automation Manager, BASF SE

Practice makes perfect:

Reduce risks with enhanced operator training



Operators also face challenges – the increasing complexity of systems and control mechanisms requires a constant willingness to learn.

Use SIMIT as a virtual training environment to ensure plant operators are trained on a variety of applications. You can train operating staff even before the start-up of the plant – with original control panels and automation programs!

All training scenarios can be initiated on demand and repeated regularly during ongoing operations. Operators can be trained for every plant situation in a realistic virtual environment without interfering with production or any risk to people, the environment, or the plant. At the same time, SIMIT creates the ideal basis for recording and transferring operating know-how.



Operator training even before start-up of system



Training under realistic conditions and in a safe environment



Securing and sharing operating know-how



Special training scenarios can be called up at any time

Reliable support:

Individual solutions for all industries

The simulation platform SIMIT serves the requirements of the process industry, discrete manufacturing industry, and even hybrids!

As your reliable partner, we invest our experience in a wide range of industries in your success. We will be at your side wherever and whenever you may need us – with experienced SIMIT experts in numerous locations all over the world. Benefit from our first-class service and corresponding technical competence.

We complete our spectrum of services with our scalable, sustainable software update services.



Chemical industry



Food and beverage industry



Water industry



Pharmaceutical industry



Oil and gas



Glass and solar



Automobile production



Machines and plant engineering



Energy

SIMIT – the simulation and training platform

Benefits



Unlimited testing of optimizations and expansions



Flexible, scalable, and open simulation installation and configuration



Higher engineering and automation quality



Train plant operators early on, even before actual start-up



Direct integration of engineering data



Shorter start-ups and changeovers due to improved operator training



Early detection and elimination of errors



Greater productivity and operational reliability thanks to high quality training



Faster commissioning with fewer risks



Secure and transfer experience and know-how in modular and repeatable training units



Increased system availability and safety



System modernizations can be implemented more efficiently and professionally



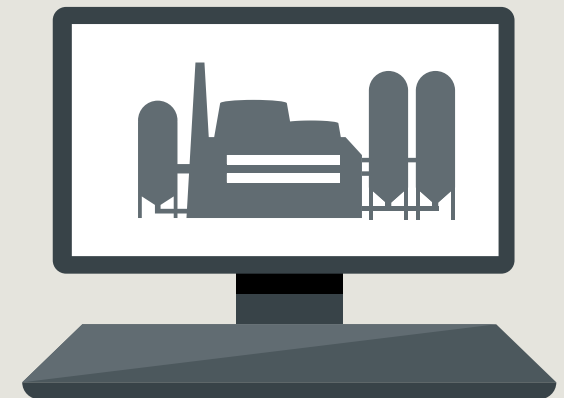
Reliable decision-making via thoroughly tested optimization possibilities



Training of standard and irregular scenarios



SIMIT



**Published by
Siemens AG 2018**

Process Industries and Drives
Östliche Rheinbrückenstr. 50
76187 Karlsruhe
Germany

Article no.: PDPA-B10381-00-7600
Printed in Germany
Dispo 45000
HL 17042873 WS 04180.5

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