SIMIT **Simulation Platform**

Realtime simulation – the foundation for your digitalization strategy

usa.siemens.com/simit

Almost every industry is facing increased pressure to meet strict project deadlines, achieve greater plant profitability, and develop highly qualified personnel. Real-time simulations of automation projects have proven very effective for accomplishing these requirements.

With SIMIT, you can use a single simula-tion platform to complete comprehen-sive tests of your automation projects as well as virtual commissioning. In addition, the simulation platform provides a realistic environment for operator training.

Use SIMIT to create a simulation model of your machines or plant and lay the foundation for the digital twin, the virtual representation of your real operation. SIMIT provides improved operability, simplified simulation mod-eling, and enhanced performance, openness, and flexibility.

SIMIT: Your benefits at a glance

- Improved engineering and automation quality
- Early detection and correction of automation errors
- Faster commissioning and start-ups with fewer risks
- Increased plant availability and safety throughout the entire life cycle
- Trained operators prior to plant start-up
- Risk-free testing of optimization or expansion projects
- Process and control know-how passed down from experienced to new operators

SIMIT – A unique simulation platform for your automation projects

Virtual commissioning for more efficient engineering and greater planning security

SIMIT provides an intuitive simulation platform with which testing, optimization, and commissioning can be performed completely virtually. All relevant automation functions can be tested safely and efficiently before the actual plant start-up using the original automation programs.

SIMIT offers all necessary couplings for communication between the simulation and automation environment. It permits both communication with real hardware controllers through the use of a SIMIT unit (hardware-in-the-loop) and emulated controllers through the use of the integrated virtual controller or the SIMATIC S7-PLCSIM Advanced (software-in-the-loop).

In addition, SIMIT provides several libraries that contain functional components to simplify the creation of simulation models. The FLOWNET, CONTEC, and CHEM-BASIC libraries provide components for simulating pipe networks, conveyor systems, and unit operations commonly found in chemical and pharmaceutical processes, respectively. In addition, the Component Type Editor can be used to create new, application specific components.

Safe and efficient training of plant operators in a virtual environment

Use SIMIT to create a virtual training environment and ensure operators are trained on a variety of plant processes. Operations can practice the procedures for rare scenarios such as start-ups and shutdowns before the events occur in real life.

The training environment is based on the original control screens and automation programs, but can be implemented without major space and hardware requirements. All training measures take place without interfering with the plant operations or endangering people, the environment, or machines.
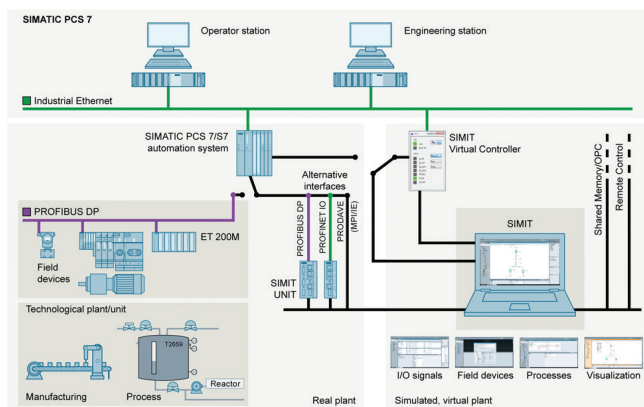
- **User-friendly**
  - Tight integration with Siemens control systems - SIMATIC PCS 7, SIMATIC PCS neo, SIMATIC STEP 7, and TIA Portal
  - Easy reuse of automation engineering data to build simulation models
  - Designed for use by automation engineers, no specific simulation experience required

- **Flexible**
  - Scalable model depending on user requirements, from I/O signal simulation up to device and process simulation
  - The same simulation model is used for hardware- and software - in the loop configurations
  - Clear separation between the automation and simulation projects

- **Open**
  - Freely configurable couplings for communication between SIMIT and 3rd party simulators
  - Interface with Siemens plant engineering software - COMOS - to support efficient development of the digital twin
  - Integration with gPROMS advanced process modeling platform from Process Systems Enterprise (PSE) for simulation supported process optimization

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