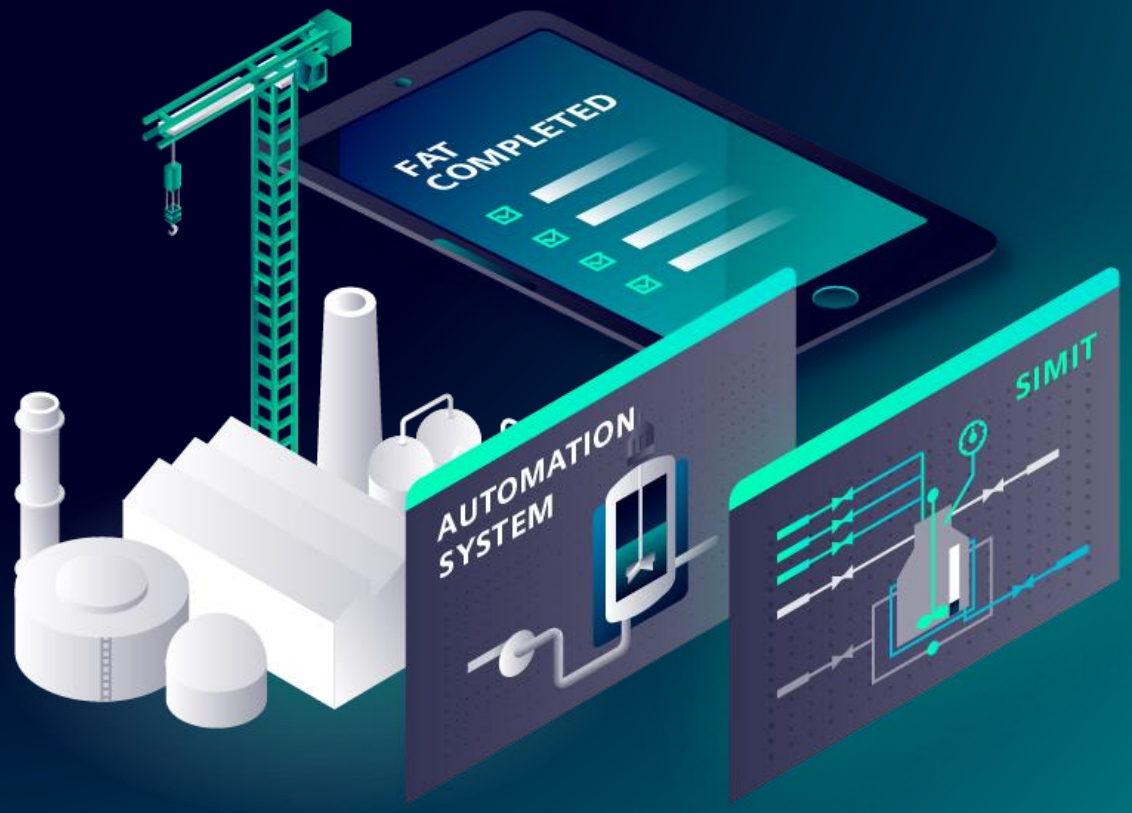

Please follow this link:

What does SIMIT do?

- Realtime simulation tool to simulate what the automation system automates
- Emulation of automation systems
- Simulation of signal, device and process level of a plant or a machine
- Provide powerful libraries to simulate your plant behavior
- Simulation of HW device failures
- Main use cases: Virtual Commissioning and Operator Training

OEM	EPC / SI	O/O
✓	✓	✓

SIEMENS

Virtual Commissioning of Automation for Process Plants
Accelerate commissioning with the use of simulation

Up to **60% time** reduction for **commissioning**

Significantly **reduced risk** for errors and accidents

Faster **time-to-market**

Optimized **production**

Increased project **quality**

Possibility to **expand the use** of your simulation model

Technical solution

- SIMIT allows repeatable automated execution and evaluation of commissioning steps (including reports)
- All systems, machines, and processes are simulated using existing design and engineering data combined with SIMIT's comprehensive libraries
- Simulation of I/O signals, sensors, actuators
- Test of control concept, sequences and recipes
- Regression tests embedded in the engineering workflow
- Both hardware-in-the-loop (HIL) and software in-in-loop (SIL) configurations enabled
- Execution of virtual FAT (Factory Acceptance Testing)
- Possibility to expand the use of the plant's simulation model throughout the entire lifecycle

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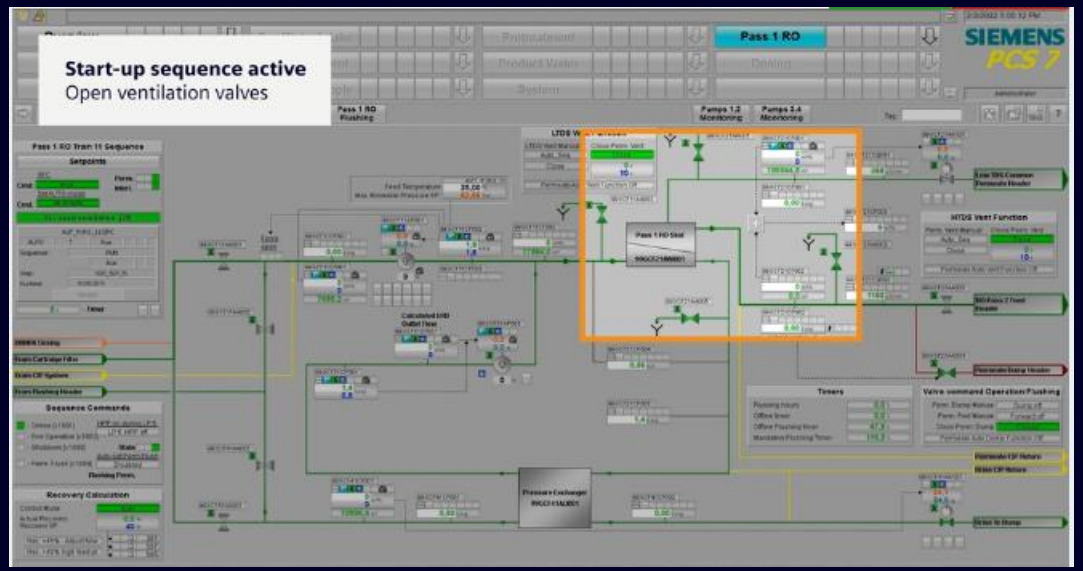
Operator Training System for Process Plants

Virtual operator training in an as-built simulation scenario



Video OTS

Technical solution

- SIMIT simulates the behavior of individual equipment (pumps, fans, etc) and automation sequences using information from engineering and automation.
- Optionally, gPROMS can also be used to provide advanced process modeling capabilities
- Optional use of original PCS 7 project
- Monitoring and evaluation of training performance
- Repeatable scenarios via snapshots
- Customizable, user-defined scripts, e.g.:
  - Start-up/shut-down of the plant
  - Process disturbances/plant failures
- Interfaces to 3rd party systems (e.g. SAP, MES)

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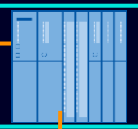
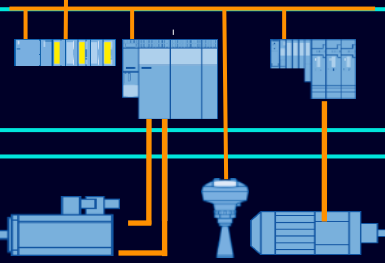
We make the virtual plant real

Real World

HMI:
PCS 7 OS Server/WinCC



Automation System (AS)



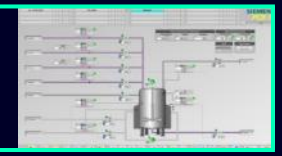
Remote IO/devices

Actuators/Sensors

Plant/ Machine

Virtual World /OTS

HMI:
PCS 7 OS Server / WinCC / et al.



Software-in- the-loop Emulation of AS

PLCSIM Advanced

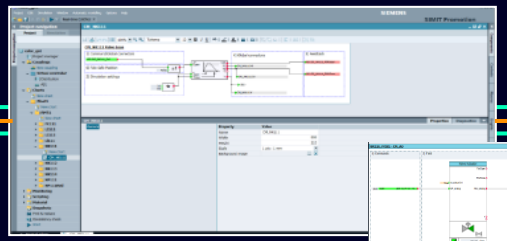
SIMIT VC – Virtual Controller

Hardware-in-the-loop via SIMIT UNIT
(Profibus or Profinet)

Real AS

I/O Simulation (Simulation of Signals)

SIMIT

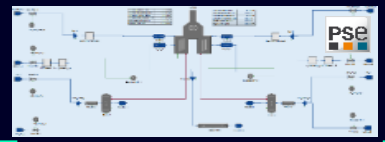


Device Simulation (Simulation of Sensors and Actuators)

Device Library

Process Simulation (Process Behavior + P&ID)
(FlowNet, ChemBasic, MC)

Connector to domain-specific simulators
gPROMS (or 3rd party simulators)



3D or discrete event driven simulators
(e.g. COMOS Walkinside, MCD)

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External Reference

Wasserwerke Westfalen, Germany

CHALLENGES

- Central plant operation management of 6 waterworks, 5 water hydro plants, 13 reservoirs and a multitude of pipe network stations
- Simulate the entire water plant to achieve quality assurance and operator training

SOLUTION

Utilize SIMIT simulation software as a digital twin for virtual commissioning, OTS and for testing

Reduced commissioning time

Minimized risks of errors and failures

Better performance with integrated solutions

Publication: Learn more here

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