

# SIPROTEC DigitalTwin

## Virtual Testing of SIPROTEC 5 protection devices in the cloud

### Description

The SIPROTEC DigitalTwin is the real time digital replica of a physical SIPROTEC 5 device including interfaces, functionality and algorithms.

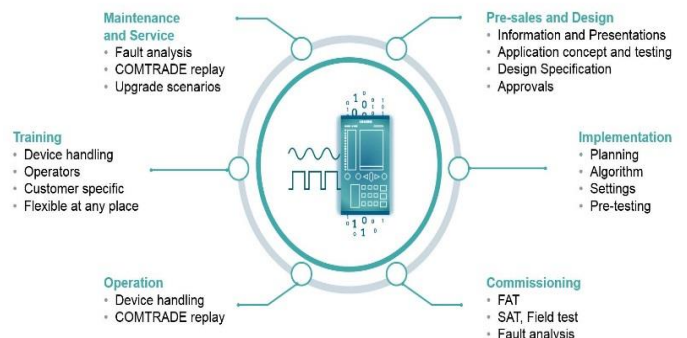
The new innovative cloud based SIPROTEC DigitalTwin offers comprehensive test of your SIPROTEC 5 devices as part of the energy automation system with high efficiency, performance, security and availability 24/7 from everywhere without any hardware.

Three steps to success:

- Upload your engineering data and your automated test cases
- Simulate and test your energy automation system in the cloud
- Get test reports of your engineered system

### Application Areas – SIPROTEC DigitalTwin:

- Training of device handling
- Process data simulation
- Test of protection functions, automation logics and customer specific applications
- Test of the SIPROTEC 5 functionality within the energy automation system
- Online Testing with the engineering tool DIGSI 5
- Integration in substation automation systems SICAM PAS, SICAM PQS, SICAM SCC
- IEC 61850 GOOSE communication between devices e.g. interlockings
- Protection Interface
- Fault analysis e.g. replay of records



### Application Areas

### Customer benefits

Testing of the energy automation system within minutes, without hardware and without additional effort.

- Simulation and validation of product properties
- Faster energization of new systems thanks to shorter project lifetimes
- Reduced OPEX with shorter outages for higher availability thanks to better pre-testing (incl. patches)
- Efficient, scalable trainings on the job
- Fast and realistic fault analysis by easily reproducing the behavior of products and systems.

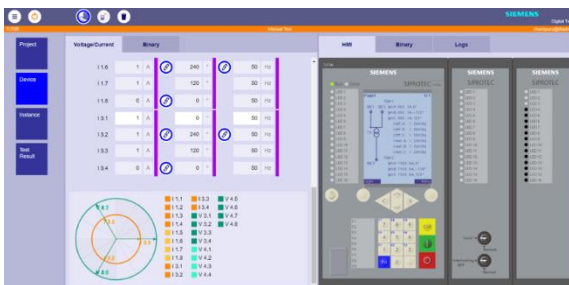
# Lower Total Cost of Ownership

## Device operation



- Device view
- Operating via SIPROTEC 5 operation panel
- Testing all protection algorithms
- Testing of automation logic (CFC)
- Interaction of several devices

## Analog values



- Injection of currents and voltages
- Setting of equal amplitudes for 3 phases
- Settings of the symmetrical phases
- Automatically calculation of  $I_4$ ,  $V_4$
- Definition of binary and analog profiles

## Binary Inputs and Outputs



- Overview of available inputs and outputs
- Display status of in-/ outputs and the life contact
- Setting of inputs
- Definition of binary and analog profiles
- Numbering according DIGSI 5 e.g. BO 3.2



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