SIMFLEX™ IEC 61850
Client Simulator

The power of Client Simulator

**System design for a
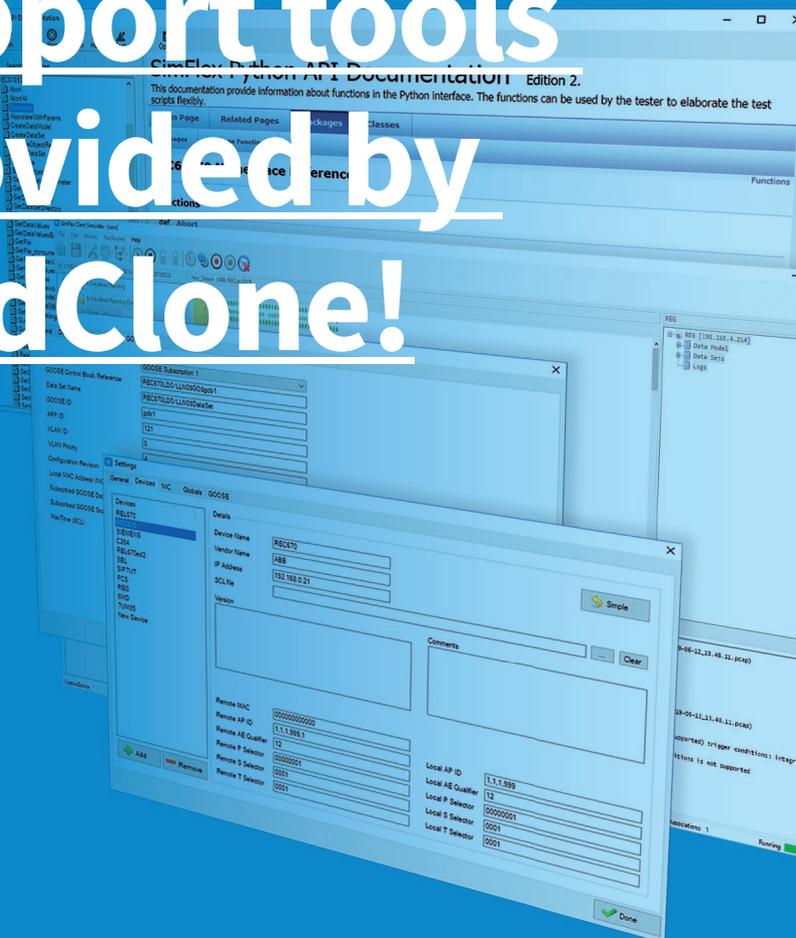fully digital substation.**

GRIDCLONE

The power of simulators

IEC 61850 standard is more than 15 years on the market. System designs based on it are paving road to a fully digital substation. Testing integrated systems of this complexity require serious considerations.

✔ **How to verify the correct implementation of a function if it uses multiple IEDs communicating over a network topology?**

✔ **How to test it in the factory and in service?**

The answer is simple

– with the simulators and support tools provided by GridClone!

The SimFlex™ family of simulators and tools

Simulation of IEC 61850 based systems and components require different simulators and tools. GridClone provides these tools for two purposes:

Detailed testing tools

Achieve excellence in conformity to the Standard, deeply understand the implementation problems, thoroughly inspect product in development phase, become fully functional testing lab:

- ✓ IEC 61850 Client Simulator (Edition 1 and 2) and
- ✓ IEC 61850 SCL checker (Edition 1 and 2)

Functional testing tools

Quickly set testing environment and perform engineering activities, analyze data flow in real-time, check existing substation configuration:

- ✓ HMI simulator,
- ✓ Protocol analyzer and
- ✓ IEC 61850 SCL checker (Edition 1 and 2)

SimFlex™ IEC 61850
Client Simulator

This Client Simulator is an easy to use yet versatile tool with advanced capabilities that enables Utilities, Manufacturers, System integrators and Conformance test laboratories to reach automation in testing process of IEC 61850 enabled devices as much as possible.

The SimFlexTM Client simulator comes with an extensive Test Suite that implements IEC 61850 test cases available for individual selection and execution. Library of well documented programing services and methods is built to enable multiple layers of interoperability with IEC 61850 device and gain insight of its behavior.

Generic tests are developed to support Conformance testing procedure. That doesn't stop user to involve its creativity, use existing building blocks and examples and create new and combine existing test cases to perform even more complex test scenarios. Learn SimFlexTM Client simulator intuitive graphical user interface in minutes and engage its capabilities to become IEC 61850 diagnostic guru.

This and much more makes the SimFlex™ Client Simulator an excellent software solution for the Power Utility industry and supporting domains.

The SimFlex™ IEC 61850 Client Simulator

Applications

- IEC 61850 conformance testing
- Functional testing of IEC 61850 IEDs and systems
- IED product development
- GOOSE publishing and subscribing
- Network traffic generation
- Preparation for UCA© International Users Group based IED certification

Benefits

- Fast and flexible automated testing of IEC 61850 System and IED behavior
- Detailed verification of IEC 61850 implementations
- Easy setup of a conformance test laboratory
- Generation and capturing of IEC 61850 specific network traffic that can be stored in files for later analysis

Values

Reduction in costs of laboratory setup, steep learning curve of testing personnel can be with ease financially reflected on the planned investment. (REWORD)
It will easily become most precious asset, just because it extends the capability and shorten the time to get the result and resolve problems. And time is money.
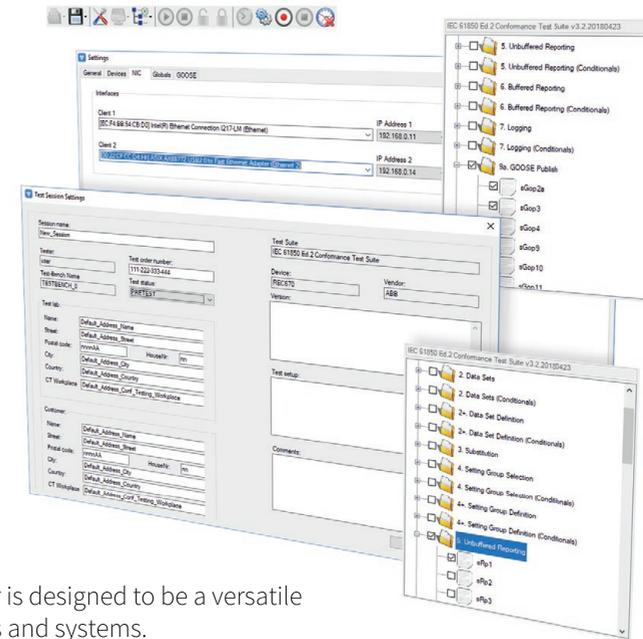
Key Features:

The Sim Flex™ Client Simulator is designed to be a versatile simulator for IEC 61850 devices and systems.
Key features of the SimFlex™ Client Simulator include:

- Supported editions of IEC 61850: Edition 1 and Edition 2
- Supported services of Basic Exchange, DataSet, Reporting, GOOSE, Logging, Tracking, Settings, Time synchronization …
- Executes the UCA International Users Group detailed test procedures based on IEC 61850-10 standard
- Tool can be incorporated in a complex testing environment (console call)
- Easy control of testing environment (ethernet switches, time servers, power supplies, secondary injection test sets etc.),

- Design and execute any test case through a flexible interface
- Logging of test progress and test results in human-readable format
- Capture network traffic on two network cards in parallel (recorded in PCAP format) that can be read by network analysis tools such as Wireshark
- Advanced GOOSE engine enables publishing of GOOSE messages, including faulty messages for negative testing
- Enhanced test case editor with syntax highlighting
- Visual representation and interaction with server's data models

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