IEC61850-ServerSim-G
Server-Simulator for IEC 61850

Data Sheet

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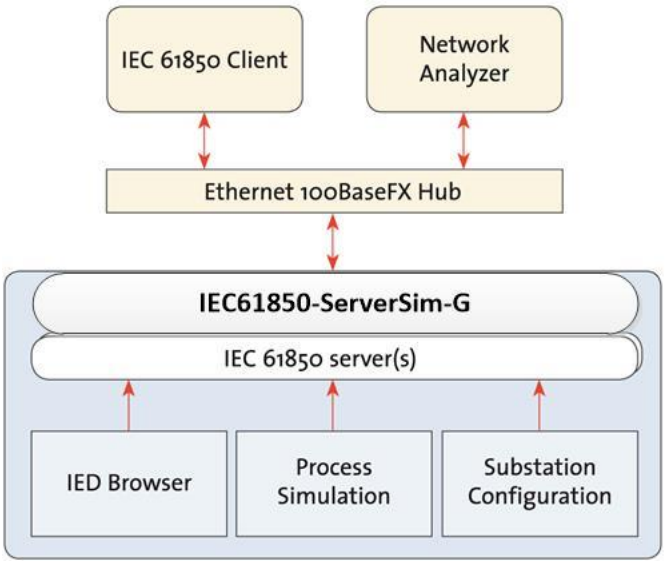
1 Introduction

The **"IEC61850-ServerSim-G"** offers you the capability to test client type systems, like RTUs, substation HMIs or SCADA systems, using IEC 61850 communication. With the IEC61850-ServerSim-G Software License, you can test clients without the need for real physical IEC 61850 intelligent electronic devices (IEDs). The IEC61850-ServerSim-G is able to simulate up to 250 server devices with one software license. The **IEC61850-ServerSim-G supports Edition 1 as well as Edition 2.** The embedded SCL parser recognizes automatically Edition 1 or Edition 2 SCL files and processes each appropriately. The simulated server device can also act as a GOOSE publisher and/or subscriber simultaneously.

The server's data model is configured by a separate configuration file for each simulated IEC 61850 server. The configuration file is in SCL format (SCD, ICD, CID or IID) acc. to IEC 61850-6. The SCL file specifies the data model of the server, including data-sets and control blocks. Reporting behaviour is configured by Report Control Blocks and the GOOSE publisher by GOOSE Control Blocks. In addition, the SCL file defines Common Data Classes and Logical Nodes acc. to IEC 61850-7-3 and IEC 61850-7-4. The data definition can be easily extended for additional Logical Nodes and Common Data Classes, as specified in companion standards like IEC 61850-7-410, or IEC 61400-25-2, or according to user-specific definitions. In this way you are able to test an IEC 61850 client system communicating with multiple simulated server devices combined with one or more real server devices.

The user may configure the Process Data Simulation for each simulated server separately using a Graphical User Interface (GUI).



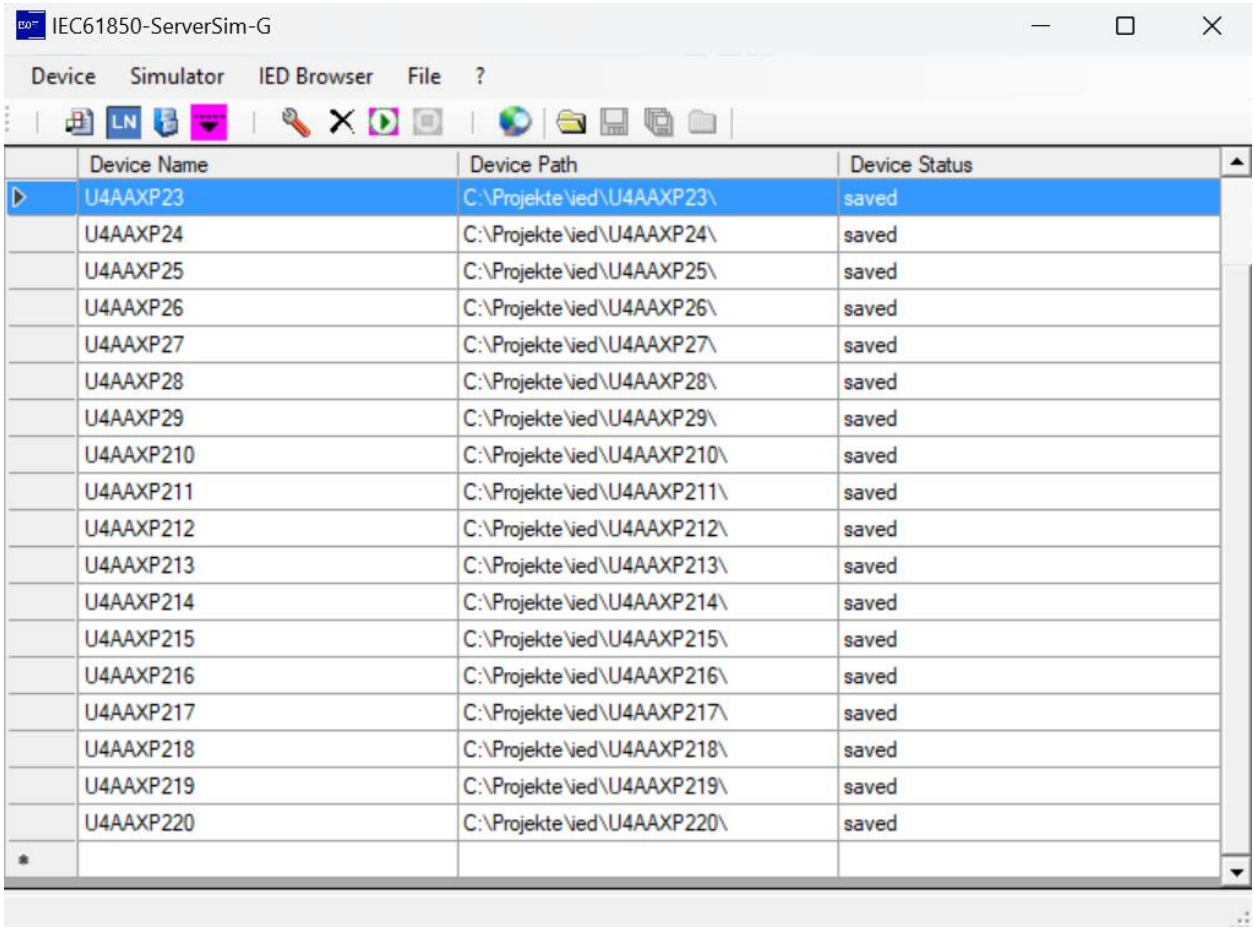
IEC61850-ServerSim-G, typical test configuration

2 Features of IEC61850-ServerSim-G

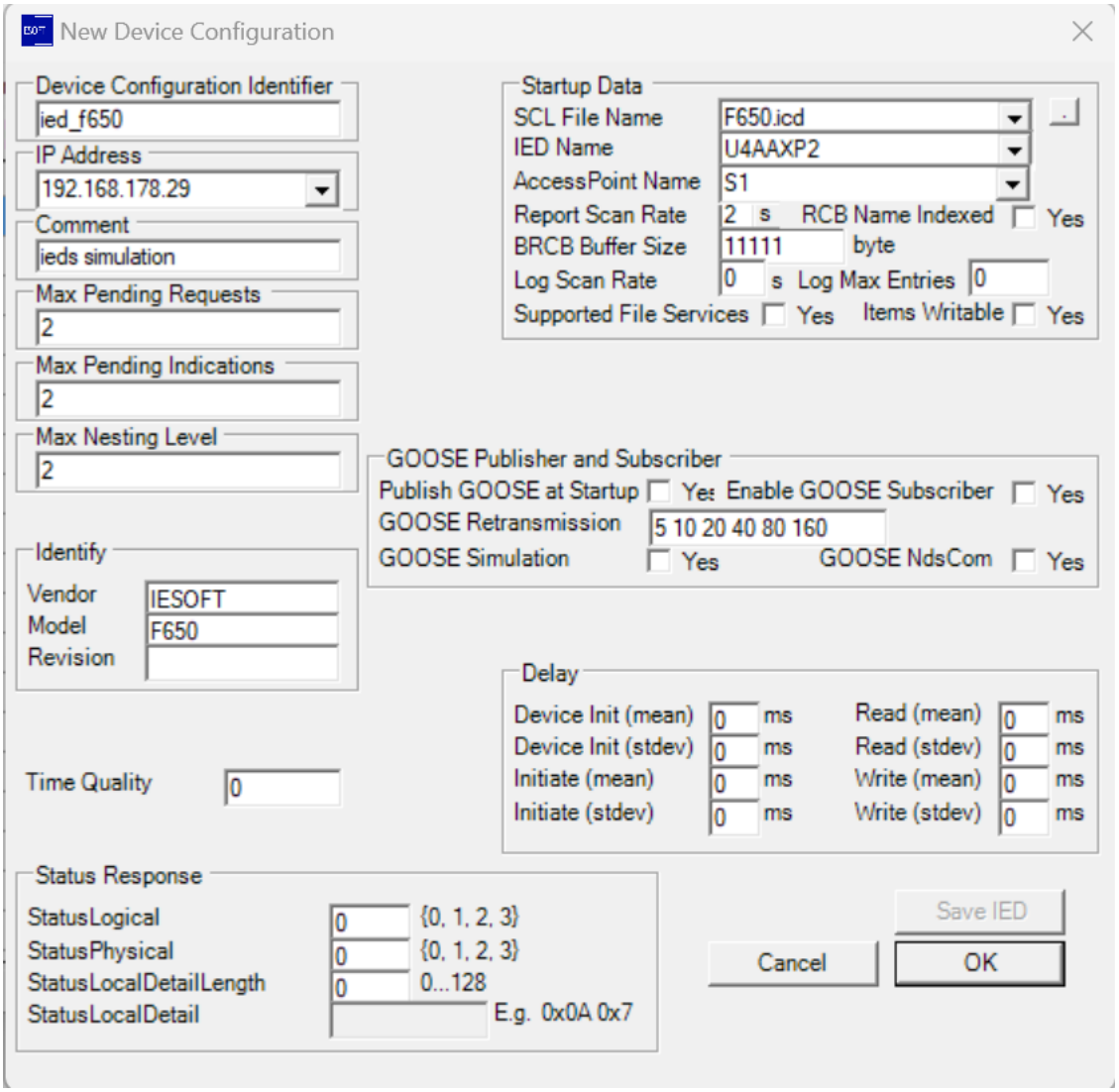
- The IESOFT Server Simulator supports the following IEC 61850-7-2 classes with their associated services – mapping as specified by IEC 61850-8-1:
  - Server
  - Application Association - TPAA
  - Logical Device
  - Logical Node
  - Data
  - Data Set
  - Reports - buffered and unbuffered
  - Log
  - Control
  - Generic Object-Oriented Substation Event (GOOSE), Publisher and Subscriber
  - File Transfer
- Easy configuration of data models via configuration file in SCL format. Separate SCL files for each simulated server possible.
- The software package contains 30 data models as SCL files of real IEDs.
- Easy extension of the data model: all Common Data Classes and Logical Nodes as defined in IEC 61850-7-3 and IEC 61850-7-4, resp, are supported as well as CDCs and LNs defined in companion standards like IEC 61400-25 and user-specific CDCs and LNs. In particular, also LNs, CDCs, and Control Blocks of IEC 61850 models not supported in the current version of the product (like Setting Group, Substitution, Service Tracking) can be displayed and accessed by remote clients.
- Easy configuration of process data simulation via file and/or via graphical user interface. Separate configuration for each simulated server possible.
- High variety of simulation models available (in total 14), including simulation models for Control Model and Quality.
- With the saving and loading functions, configured servers can be stored in projects. The user is able to set up and reuse different configurations.
- Easy configuration of complex device and process behaviour by scripting simulation events. Allows the user to implement multiple system failures, mass reports, etc...
- Fast and easy setup of systems with a large number of devices by using the integrated copying function.
- Includes Client functionality. Via a Graphical User Interface ("IED Browser") the user can display and access (read/write) the data of the simulated devices.

- Supports IPv4 and IPv6.
- Easy installation on a computer running MS Windows operating system.

3 Simulator Graphical User Interface (GUI)



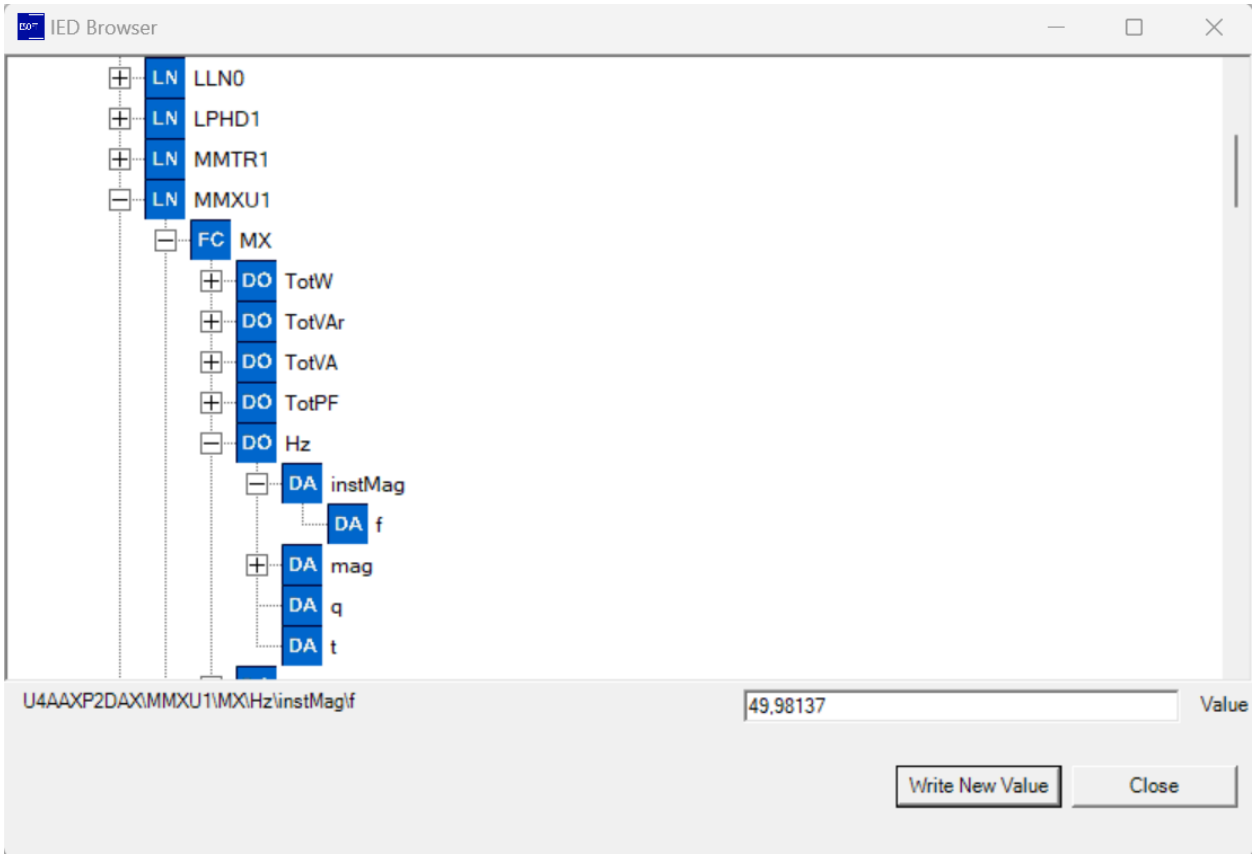
IEC61850-ServerSim-G: main window



IEC61850-ServerSim-G: window "New Device Configuration"

4 IED Browser

The IED Browser displays the IED's data model for any of the configured IEDs. In addition, the IED Browser enables the user to select a Data Attribute from the data model and to write a new value to it – e.g. to trigger the sending of an IEC 61850 report due to data changes. The IED Browser can also connect to external real IEDs.



IEC61850-ServerSim-G: window "IED Browser"

5 System Requirements and Support

5.1 System Requirements

Computer with operating system MS Windows 10, MS Windows 11, MS Windows Server 2012, or MS Windows Server 2019 with at least 4 GB RAM and one Ethernet network interface card.

The actual required hardware resources (CPU, RAM, …) depend on the number of server devices to be simulated, the volume of the data models, and on the actual configuration of the process data simulation.

5.2 Technical Support

For technical support a Maintenance & Support contract (validity period: 1, 2 resp. 3 years available) should be agreed. Software updates are also included in the M & S contract.

If the customer has no knowledge about IEC 61850 a training of at least one day is highly recommended. When taking a training the Maintenance & Support will be included in the license price within the first 12 months after purchase.

5.3 License Protection

The product uses a license protection.

6 Part Number

- **IEC61850-ServerSim-G**
- Version including support of GOOSE publisher and subscriber.

We offer specific Training and Workshops on request. With a M&S Contract also free updates are available, as upgrades for IEC61850-ServerSim-G are released continuously.

- **Contact:**

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