

61850 SCL Runner toolset

61850 SCL Runner • 61850 ICD Editor

61850 SCL Runner - a program capable of simulating a network of IEC 61850 server IEDs: an ultimate software tool for testing IEC 61850-based system configurations.

➤ Simple, intuitive GUI to begin with opening an SCL file.

➤ Enables using target or user defined IP addresses of simulated devices (when running with administrator privileges) on multiple network adapters.

➤ Supports IEC 61850 Edition 1, Edition 2 and the newest Edition 2.1.

➤ Supports secure client-server communication based on TLS and ACSE.

➤ Excellent and easy to use simulator of multiple server IEDs based on their descriptions provided in SCL files (ICD, CID, IID, SCD).

➤ Full support of control models, reporting function, GOOSE publisher, GOOSE subscriber (Inputs).

➤ Original communication addresses from SCL files can be retained for the simulated IEDs

➤ Simulation of data values and their quality can be driven manually, using formulas with interdependencies and time variable or from an external user defined program communicating with the simulator using telnet protocol.

| Variable | Value | Auto | Cycle [s] | Formula |
|---|------------------|------|-----------|-----------------|
| Measurement/I3pMHAI1\$MX\$SHA\$phsAHar[0]mag\$F | 2059.97802734375 | Yes | 0 | 2000+100*sin(T) |
| Measurement/I3pMHAI1\$MX\$SHA\$phsAHar[1]mag\$F | 0 | Yes | 0 | t mod 10 |
| Measurement/I3pMHAI1\$MX\$SHA\$phsAHar[2]mag\$F | 2 | Yes | 0 | if(T>300,1,2) |
| Measurement/I3pMHAI1\$MX\$SHA\$phsAHar[3]mag\$F | 0 | No | 0 | t mod 4 |
| Measurement/I3pMHAI1\$MX\$SHA\$phsAHar[4]mag\$F | 0 | | | |

IED: Demo1 IP: 127.0.0.1 Running

61850 ICD Editor - a tool to create and modify SCL files.

- Supports IEC 61850 Edition 1, Edition 2 and the newest Edition 2.1.
- Supports also the related standards for Wind Power, DER, Hydro.
- Supports definition of ICD file with the use of standard defined and private LNs, DOs, DAs.
- Includes ICD file content verification.
- Allows to create prototypes of IEDs to be simulated prior to development.

The screenshot displays the 61850 ICD Editor interface with several active windows:

- Control Block Editor:** Configured for 'Unbuffered Report CB' with Name 'Buffered Report CB', DataSet, Report ID, Buffering time 1000, Integrity period 0, and Config revision 1. It includes checkboxes for 'Option fields' (Sequence number, Time stamp, DataSet reference, Reason code, Data reference, Entry ID, Configuration revision, Buffer overflow) and 'Triggering options' (Data change, Quality change, Data update, Integrity scan, General interrogation).
- Dataset Editor:** Shows Logical Device 'LD0', Logical Node 'LLNO', Name 'SCADADataset', and Reference 'LD0/LLNO\$SCADADataset'.
- Add new Logical Node:** A dialog box for adding a new node, currently showing 'XCBR' as the selected class.
- Tree View:** A hierarchical tree of logical nodes including LD LD0, LN LLNO, LN LPHD1, LN CSWI1, LN PTOC1, DO Beh, DA stVal [ST], DA q [ST], DA t [ST], and DO Str.