



IEC 61850 Client Verifier Edition 2

The KEPCO 61850 Edition 2 Client Conformance Verifier is an easy-to-use testing tool that allows you to execute tests that are specified by the UCA Conformance Test Procedures for a Client System with IEC 61850-8-1 Interface specification.

Key Benefits

- Step-by-step guidance to the operator for each client test case
- Automated Testing Process to Accelerate Testing Duration
- Improves the likelihood for the final formal 61850 Edition 2 Client Certification

Key Features

- Covers UCA's Conformance Test Procedures for 61850 Edition 2 Client System
- Windows-based application supporting Wi-Fi and Ethernet based communication
- Passively Monitor and Analyze 61850 Edition 2 Traffic for Conformance

IEC 61850 Overview

The IEC 61850 has evolved into a global standard for substation automation. This standard aims to provide a utility company with a single standards-based protocol for complete substation automation. The standard aims to provide higher level of interoperability between systems from different 61850 vendors. It leverages other standards, such as the IEC 61970 CIM standard for modeling different substation equipment, a common XML based configuration language (SCL) to define models, IEC 9506 MMS standard for message communication, and TCP/IP for transport to name a few.

IEC 61850 standard states that a substation is organized into two primary groups: Intelligent Electronic Devices (IEDs) residing on the Process Bus, and command and control client devices to the IEDs residing on the Station Bus. Some examples of IEDs include relays, switches, relays and switchgear equipment. Examples of client devices include Human Machine Interface (HMI), Remote Terminal unit (RTU), Gateways, and Station Computer.

Main Features

The KEPCO 61850 Edition 2 Client Conformance Verifier (or "client verifier") testing tool addresses conformance testing of 61850 client

devices that reside on the Station Bus. The UCA International Users Group has developed the Conformance Test Procedures for Client System with IEC 61850-8-1 Interface specification, which defines the test plan for testing conformance of 61850 client devices. The KEPCO 61850 Edition 2 Client Conformance Verifier tool is an automated test tool that implements the test cases that are defined by this UCA test document. The categories of tests that are supported by this test tool include:

Conformance Block	Number of Tests
1 Basic Exchange	20
2 DataSet	12
4 Setting Group Selection	3
4+ Setting Group Definition	2
5 Unbuffered Reporting	18
6 Buffered Reporting	21
12a Direct Control	6
12b SBO Control	9
12c Enhanced Direct Control	6
12d Enhanced SBO control	7
13 Time Sync	4
14 File Transfer	8
Total Tests Supported	116

Client Testing

The KEPCO 61850 Edition 2 Client Conformance Verifier (Figure 1) is an easy-to-use testing tool that allows you to execute the tests that are specified by the

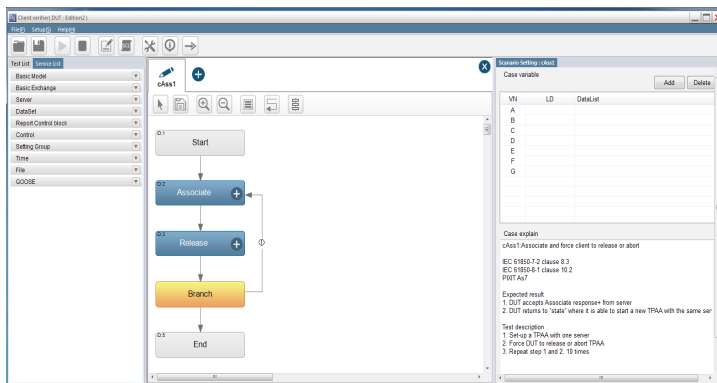


Figure 1

UCA Conformance Test Procedures for Client System with IEC 61850-8-1 Interface specification. Users can easily configure the testing tool for the specific device configurations that are required by the testing environment, including the ability to configure the testing tool with the specific SCL configurations that are being used along with the network information. The testing tool is based on a visual diagram test scripting engine, and you can create or modify tests on the fly without writing a single line of code.

Analyzer

The KEPCO 61850 Client Conformance Verifier tool (Figure 2) includes a built-in analyzer that passively collects the relevant packets on the wire. The analyzer will present the captured packets in an easy-to-understand layer, including the ability to present low-level Link-level packets to high-level ACSII level. By using the analyzer, you can analyze the network traffic that was communicated for the test session to diagnose any problems.

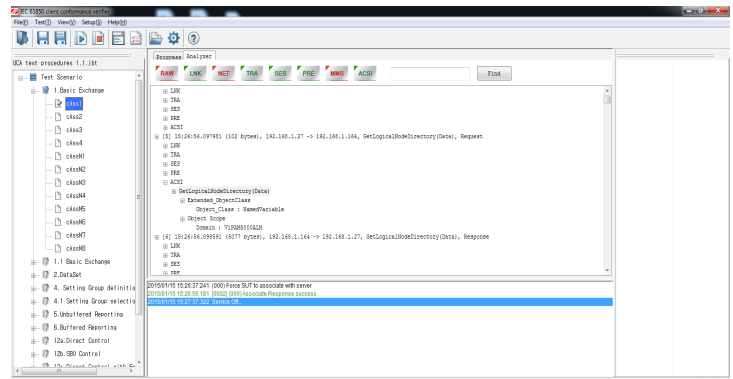


Figure 2

System Requirements

- OS: Windows 7 or Windows 10 32/64 bit
- HD space: at least 50GB free
- RAM: at least 4 GB (8 GB recommended)
- Network adapters: Ethernet or WiFi
- USB 2.0 port
- Monitor resolution: 1440 dpi/900 pixels or better
- The installation requires access to the Internet
- Network TAP or hub (not switch) or other device that will allow broadcast packets to be seen by all network adapters that are connected for client, server(s), and verifier.

