

DOBLE PROTECTION TESTING

# 61850Test

Protection Testing Software

## FOR TESTING IEC 61850-BASED PROTECTION AND AUTOMATION SYSTEMS

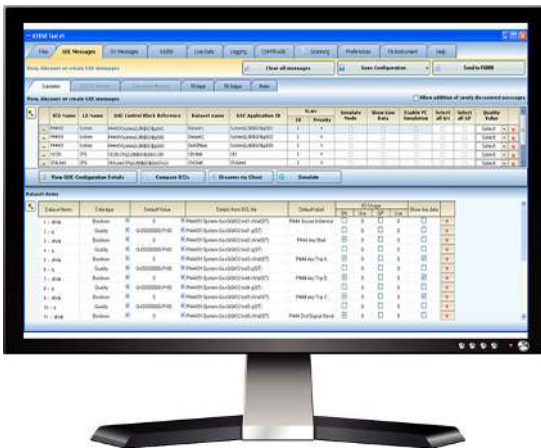
Simulate, monitor and test IEDs on your digital substation network with Doble's 61850Test Software. Use with Doble's F6150sv and Protection Suite software to apply sampled values (SV) and generic substation event (GSE) simulations to functionally test, receive status messages and get more data from substation devices. Create fault conditions to verify control scheme coordination to ensure proper design of IED logic. Use 61850Test to identify and map logical nodes and objects to virtual inputs on the F6150sv. Then use Doble's Protection Suite testing software to verify correct operation and performance of your IEC 61850-based protection, automation and control schemes.

### FEATURES

- Loads multiple IEC 61850 substation configurations or various types of SCL files (ICD, IID, CID, SED, and SCD)
- Discovers the IED's data model and configuration and generates SCL files
- Built-in Client Simulator browses the IED's data model and allows read/write actions on their values; displays and updates selected data in watch windows
- Client controls switching devices and simulation and testing modes of IEDs
- GSE support includes GSSE, GOOSE, and Routable Goose
- Scans and captures substation network traffic for GSE and SV messages
- Logs GSE messages and reports from IEDs. Log files can be saved, and a time-aligned display of events facilitates analysis
- PC-based simulation of IEDs for publishing and subscription of GOOSE and R-GOOSE messages manually or automatically using scripts
- Displays live data in various display formats - tabular, annunciator and graphs. Oscillographs of GSE and SV signals are saved and can be viewed and analyzed further with the COMTRADE viewer.

### BENEFITS

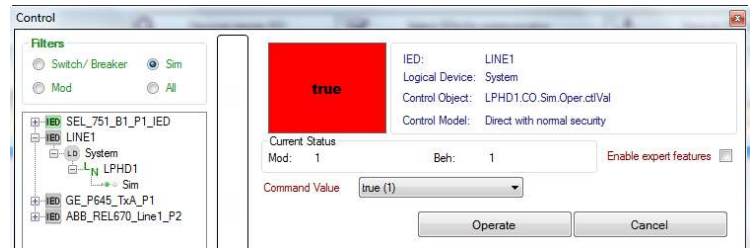
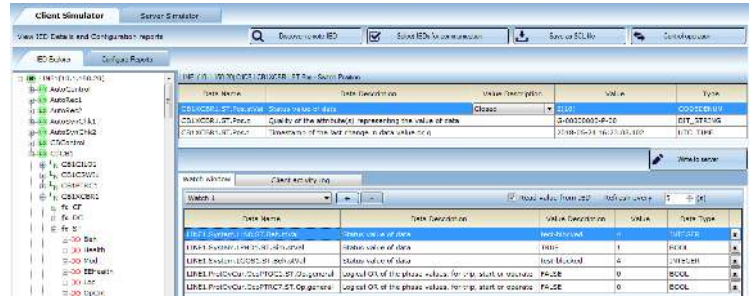
- Provides a well-organized approach in selecting and defining GSE messages and signals for use in testing and visualizing
- Easy-to-use interface for viewing messages and their datasets
- Plan your testing scenarios in a laboratory or offline and use the saved configuration files in the field for efficient testing and commissioning
- Easy modifications in the field can be made for troubleshooting
- Provides better awareness and confidence in the test and test results
- Provides complete functionality with enhanced visualization required for efficient and secure testing IEC 61850-based protection and control schemes



## 61850Test: A CLOSER LOOK

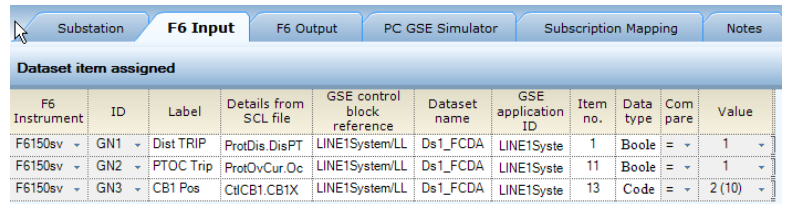
### CLIENT/SERVER AND SIMULATION

Browse the data model of IEDs and select data items. The Client simulator allows you to read current values and you can write or change the values of certain items. Create watch lists of selected items for automatic updating of display values. Control and set IED modes for simulation and behavior, such as test-blocked. Control circuit breakers based on their control model such as select-before-operate and verify the interlocking and synch-check logic. The Server simulator allows you simulate multiple IEDs to automatically publish GOOSE messages. Change the values of selected items manually or semi-automatically with a table of selected items with their prescribed values for quick simulation. Scripts allow simulation of more complex testing scenarios including simulation of IEDs to simultaneously subscribe and publish GOOSE messages conditionally based on implemented logic.



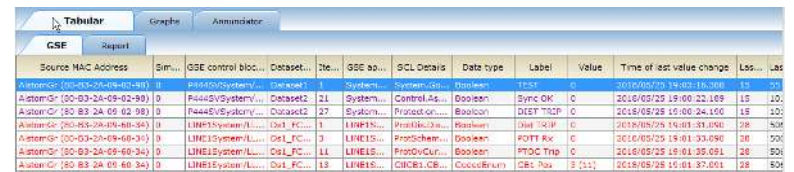
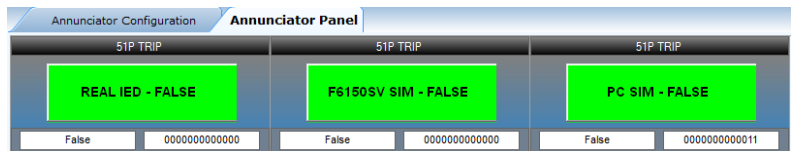
### CONFIGURATION OF F6150SV FOR GSE TESTING

Select signals from the Substation section for GSE subscription and simulation. Map these signals to the F6150sv virtual inputs and outputs for easy testing of your IEC 61850 design.



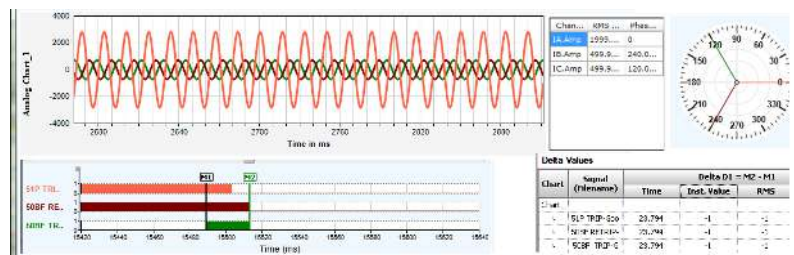
### ANNUNCIATOR PANEL AND TABULAR VIEWS OF LIVE DATA

The annunciator panel and signal table provide a clear, real-time visualization of monitored signals and analog data using custom widget-based displays. Identical signals from real IEDs and signals from the test set and other simulators can also be viewed simultaneously.



### GRAPHICAL VIEW OF EVENTS AND WAVEFORMS

Use the graphical oscilloscope to view SV and GSE signals, and client/server report data. Triggers based on GOOSE and specified SV thresholds or value changes initiate automatic recording and saving in COMTRADE file format. The saved file can be reviewed for more detailed analysis using the COMTRADE Viewer, including phasor views and derived data tables.



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