



TRIANGLE MICROWORKS, INC.

61850 Test Harness Quick Start Guide

Version 2.5

September, 2010

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1. Introduction

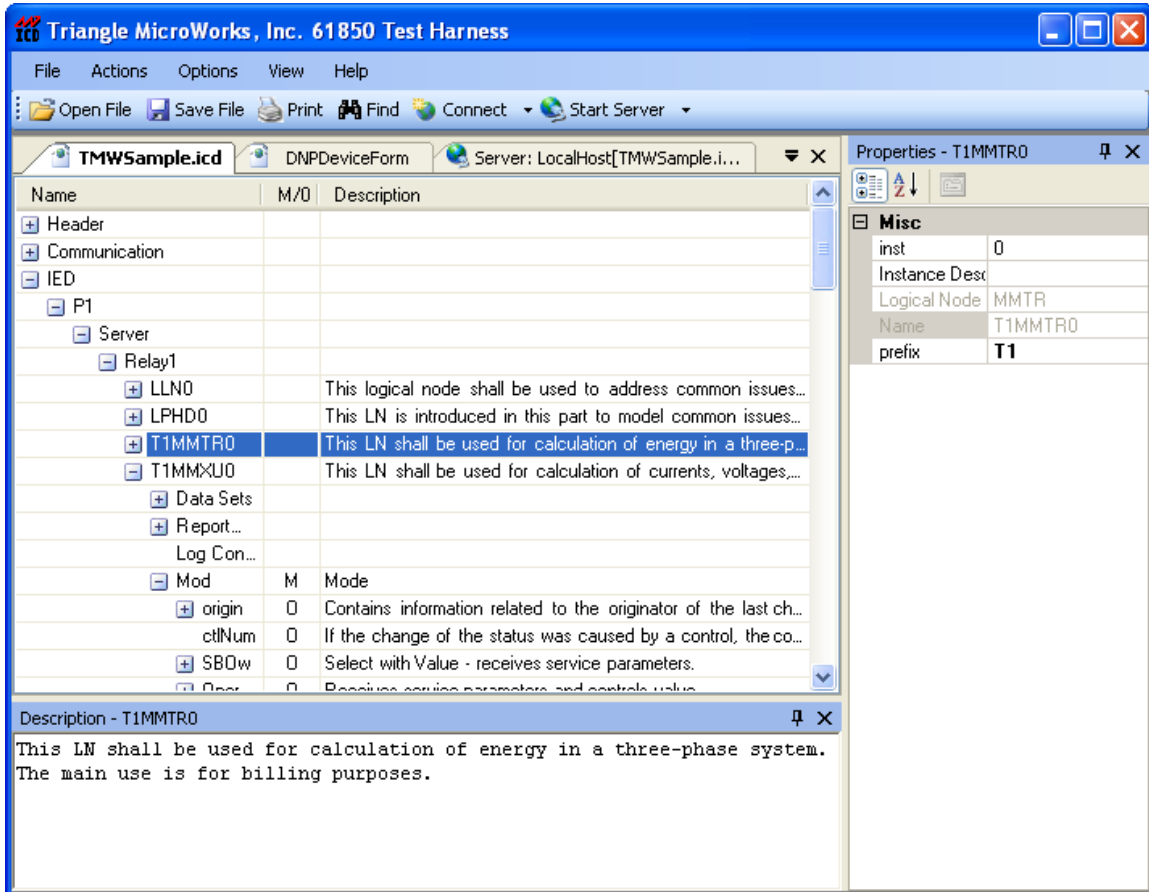
The *61850 Test Harness* is a Windows application that supports four distinct areas of functionality.

1. The creation and editing of Substation Configuration Language (SCL) files defined by the IEC 61850-6 specification.
2. IEC 61850 Test Client
3. IEC 61850 Test Server
4. The creation and editing of DNP3 XML Device Profile Documents.

The primary focus of the Quick Start Guide is to give a simple overview of the each of these areas of functionality.

2. Opening a SCL File

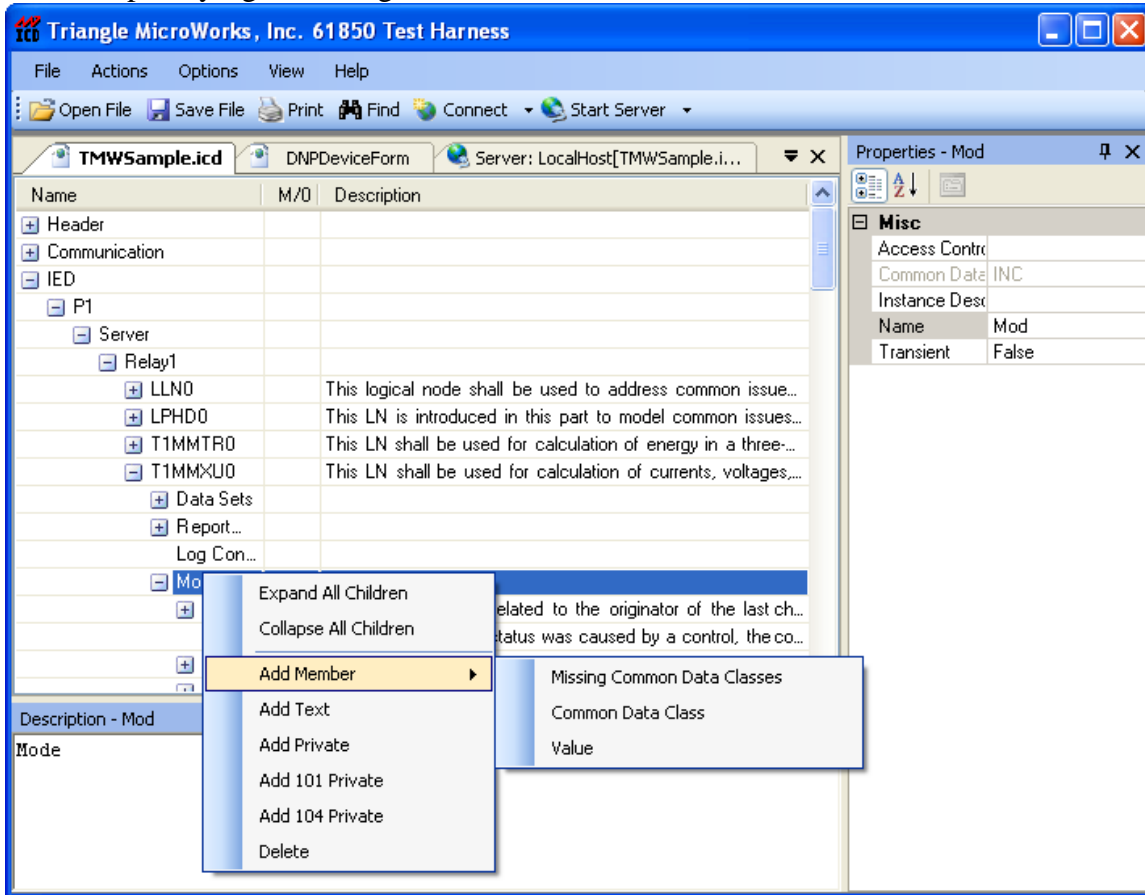
The *61850 Test Harness* ships with a sample SCL file, *TMWSample.icd*. This can be opened using the File->Open menu option.



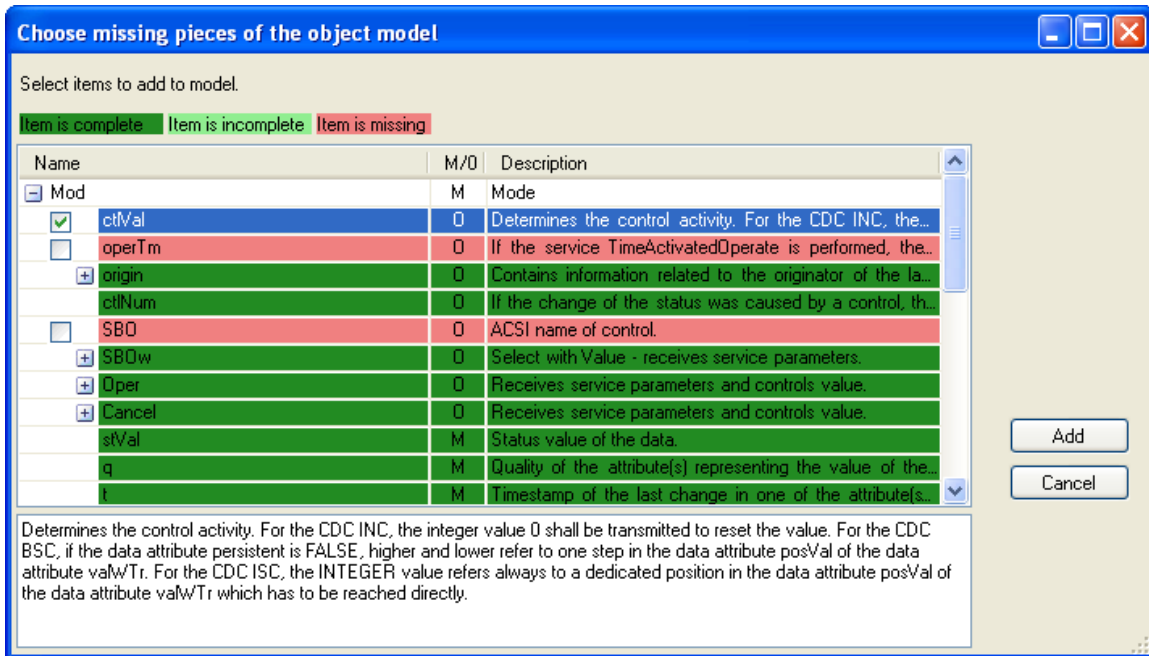
Upon selecting an item in *TMWSample.icd* the *Description* and *Properties* Pane change content to show the currently selected items content. The *Description* Pane shows the same description shown in the main view in a more readable format. This description is taken directly from the specification. The *Properties* Pane shows the selected items properties. The properties of a specific item vary depending on the property.

SCL editing makes extensive use of context menus. Right clicking on any item in the tree will bring up a context menu with the appropriate options for that item.

For example, by right clicking on *Mod*:



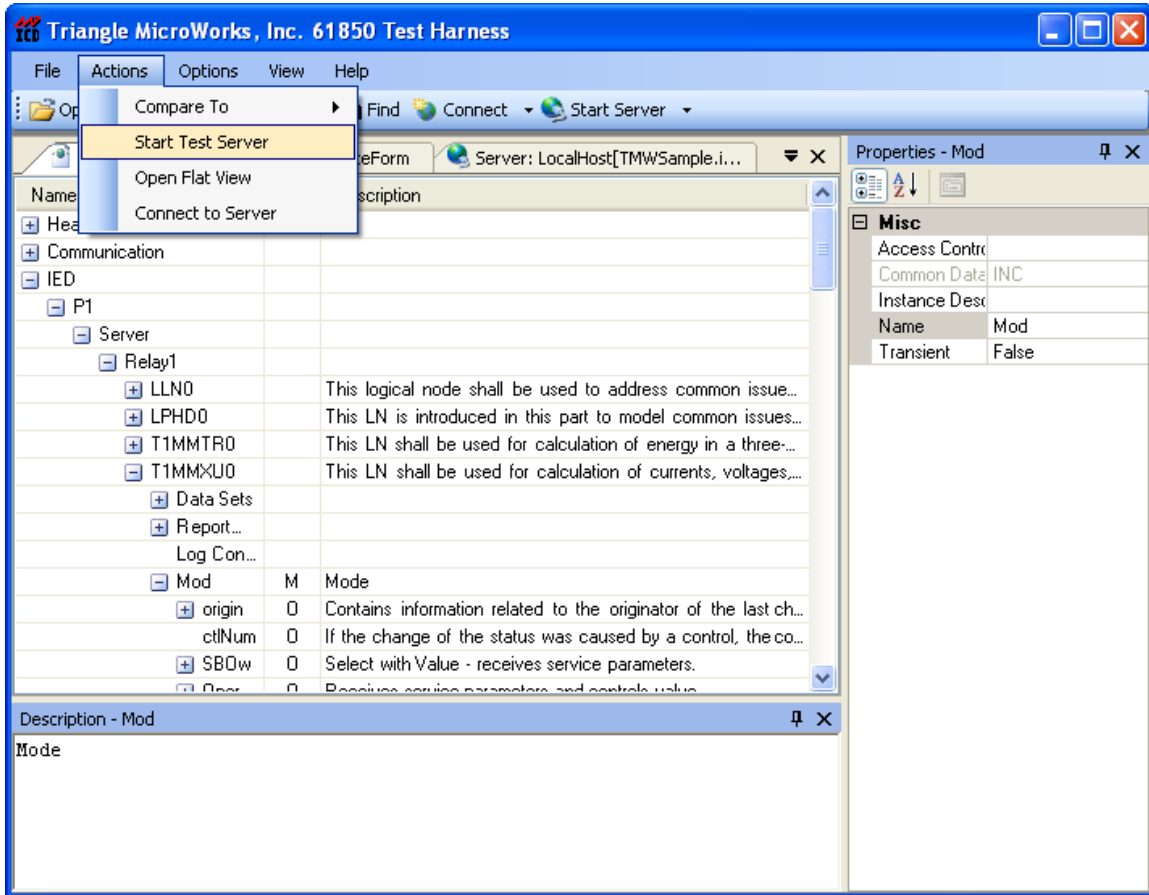
The available options are displayed. Choose *Missing Common Data Class* to add missing members of the *Mod* item.



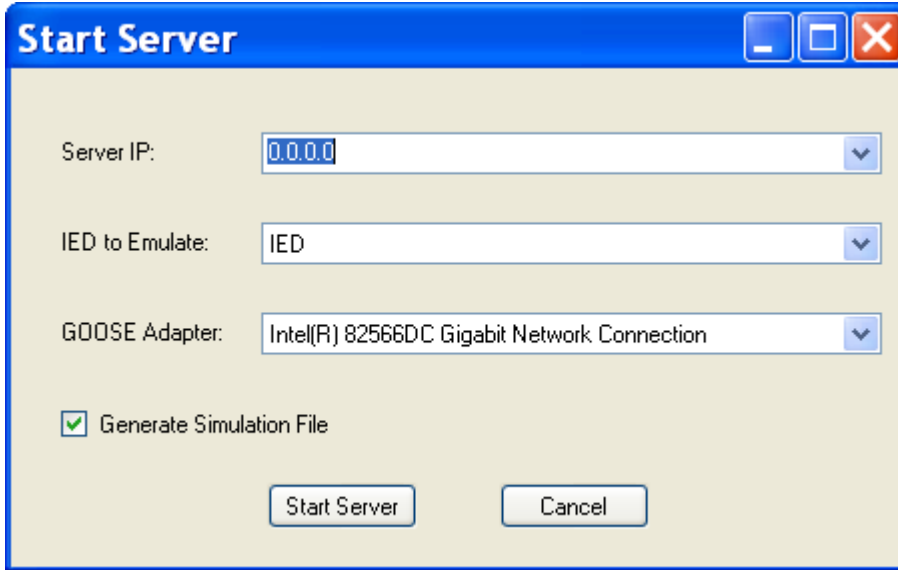
Click the check box *ctlVal* and press *Add* to add the *ctlVal* to *Mod*.

3. Starting an IEC 61850 Test Server

The IEC 61850 Test Server configures itself from any ICD file. To start a Test Server open an ICD file and choose *Actions->Start Test Server* from the *Actions* menu item.



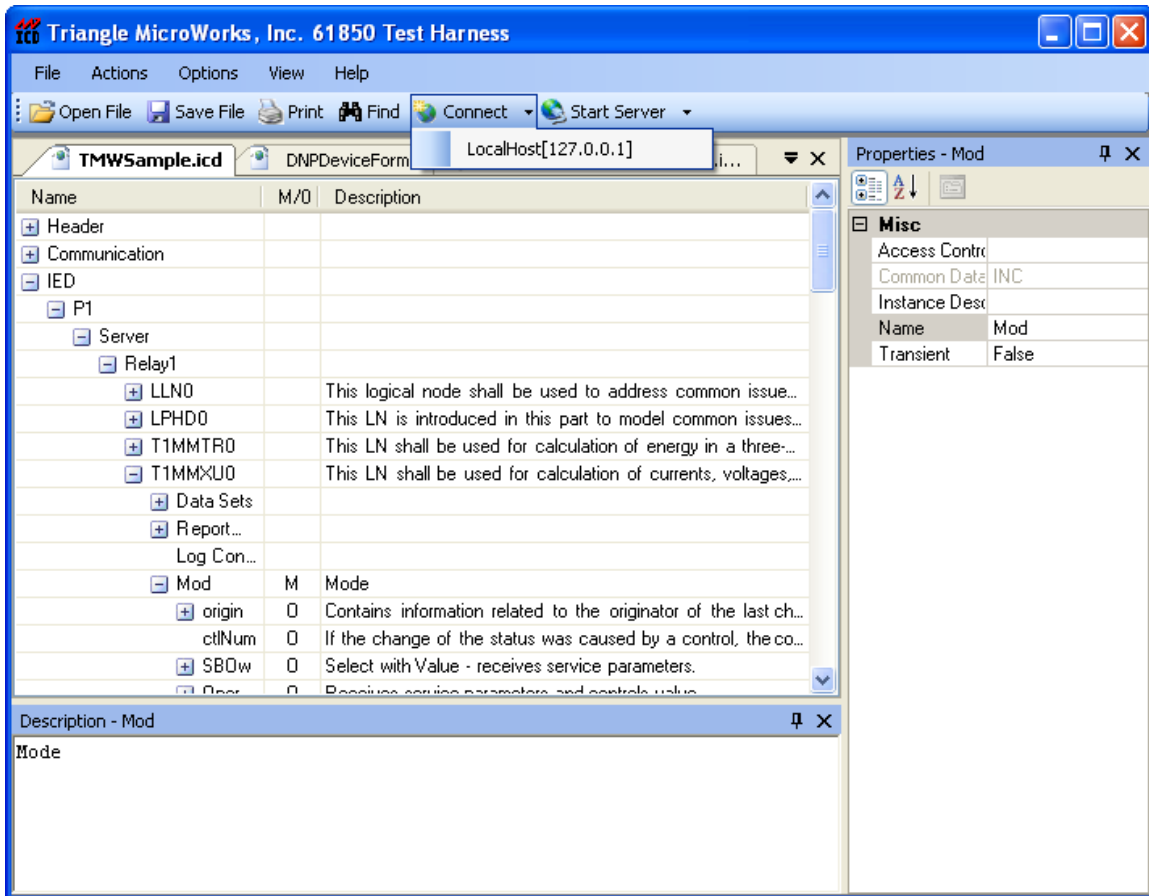
Which brings up the following dialog:



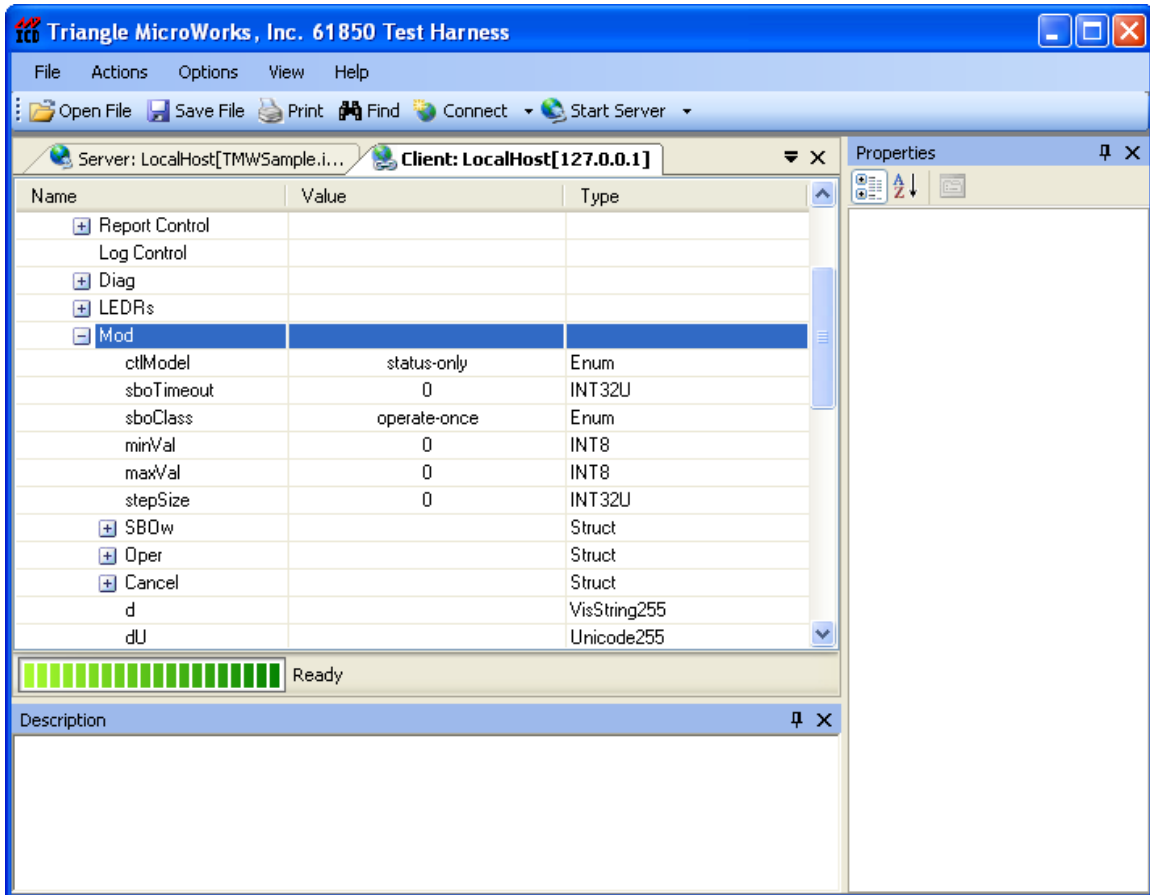
With the exception of the GOOSE Adapter all of the defaults are fine. Choose a GOOSE adapter from the list and press Start Server. The server will start in a console window and begin accepting connections.

4. Connecting to a IEC 61850 Test Server

The *61850 Test Harness* comes preconfigured to connect to localhost (127.0.0.1). Simply press the arrow on the *Connect Toolbar Button* and select *LocalHost[127.0.0.1]*. This start the connection process, to see the status messages from the connection API sequence activate the *Output Pane* by selecting the pane named *Output*.

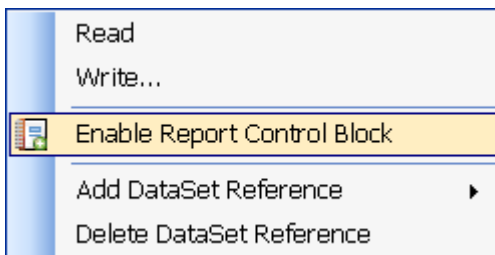


After the connection is made the status bar at the bottom of the *LocalHost[127.0.0.1]* workspace pane is shown in green indicating an active connection. The functionality available in the Server Connection pane is available via context menus.



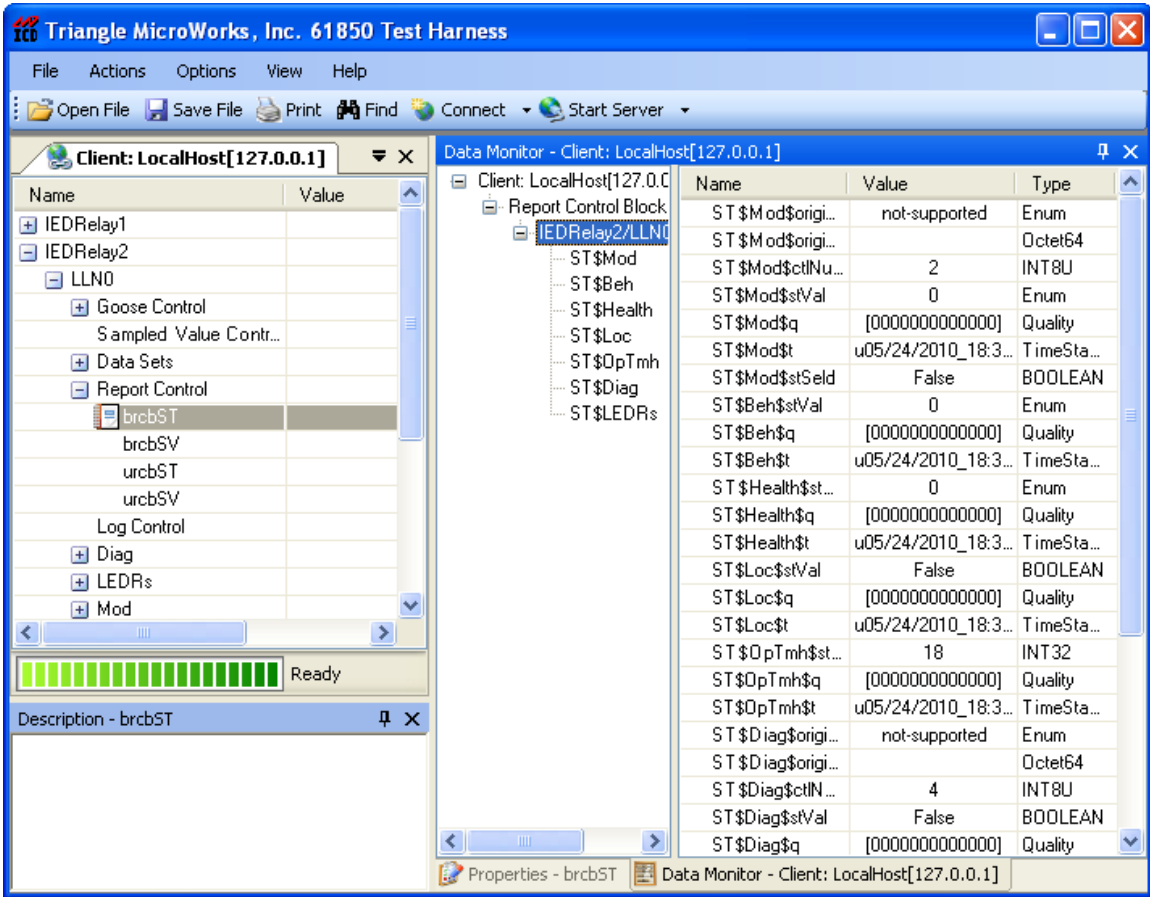
4.1 Enable a Report Control Block in the IEC 61850 Test Server

Right click on item *IEDRelay1/TIMMXU0/Report Control/brcbMX*. Choose *Enable Report Control Block* from the context menu.



This will enable the Report Control Block on the server. The status message from the server is displayed in the *Output Pane*.

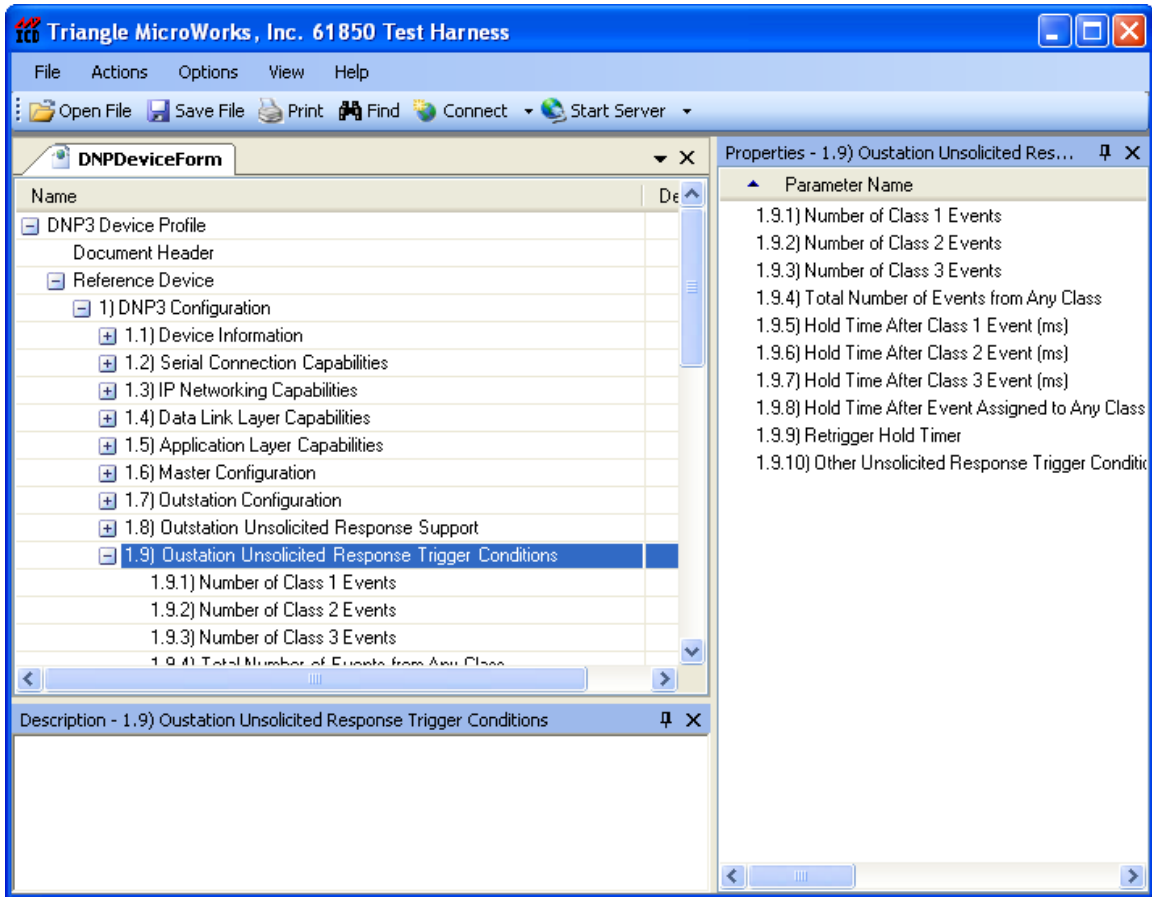
The *Data Monitor Pane* displays a consolidated points list of just the data within the Data Set that the Report Control Block is monitoring. Choose *Actions->Show Data Monitor*.



The *Data Monitor* has an entry for each Server Connection at top level then each enabled Report Control Block followed by the Data Set contained within the Report Control Block. The right side of the *Data Monitor* shows the points list of the selected item.

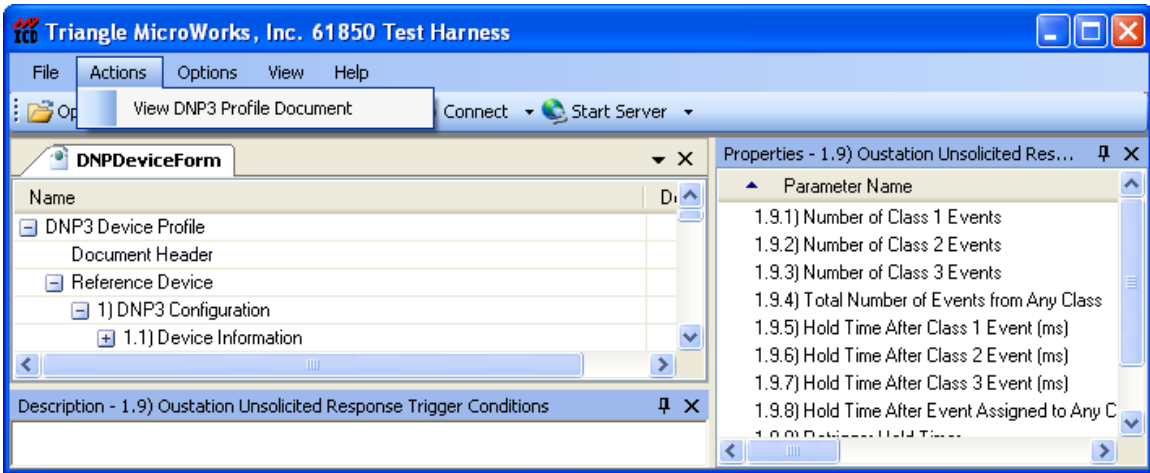
5. Opening a DNP3 XML Device Profile Document

The *61850 Test Harness* ships with a sample DNP3 XML Device Profile Document file, *TMWDNPSample.xml*. This can be opened using the File->Open menu option.



5.1 Viewing the Device Profile Document

A device profile document can be generated by selecting *Actions->View DNP2 Profile Document*



The document is shown as an HTML page and can be saved using the *File->Save* option or printed using the *File->Print* option.

