



ERL 61850 IED Configurator

User Manual

Version 2.0 Rev 1

Preface

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Using This Guide

This user manual describes the installation and operation of the ERL 61850 IED Configuration Tool user interface software. It is intended to support the first time user and clarify the details of the equipment.

The manual uses a number of conventions to denote special information:

Example	Describes
<i>Start>Settings>Control Panel</i>	Choose the Control Panel submenu in the Settings submenu on the Start menu.
Right-click	Click the right mouse button.
<i>Recordings</i>	Menu items and tabs are shown in italics.
service	User input or keystrokes are shown in bold.
Text boxes similar to this one	Relates important notes and information.
..	Indicates more screens.
	Indicates further drop-down menu, click to display list.
	Indicates a warning.

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Version Compatibility

IED Configuration Tool Compatibility Guide		
Configurator Version	Compatible ICD File Versions	Added Feature
v2.0	00, 1.0	Generic GOOSE Subscription
	2.0	Control Blocks/ dataset editing
	2.1	VLAN Handling
	3.0	Sample Value with Generic Subscription
v1.0	00, 1.0	Generic GOOSE Subscription
	2.0	GOCB/RCB/Dataset Editing
	2.1	VLAN Support

Products Supported

Product	Firmware Version
B-PRO 4000	v2.0a or greater
B-PRO Multibus	v1.0 or greater
F-PRO 2000	v1.0 or greater
F-PRO 4000	v1.0 or greater
I/O Expansion	v1.0 or greater
L-PRO 4000	v2.1a or greater
S-PRO 4001	v2.0 or greater
TESLA 4000	v1.3 or greater
T-PRO 4000	v1.0 or greater

Note: refer to the version compatibility table in the product user manuals for ICD file version by each Firmware version.

Please contact ERLPhase Customer Service for complete Revision History.

PC System Requirements and Software Installation

Hardware

The minimum hardware requirements are:

- 1 GHz processor
- 2 GB RAM
- 20 GB available hard disk space

Operating System

The following software must be installed and functional prior to installing the applications:

- Microsoft Windows XP Professional Service Pack 3 or
- Microsoft Windows 7 Professional Service Pack 1

To Install Software on your Computer

To install the software on the computer, go to <http://www.erlphase.com/support.php?ID=software> and select ERL 61850 IED Configurator.

To view the Configurator User Manual the user must have Adobe Acrobat on the computer. If a copy is needed, download a copy by clicking on Download Adobe Acrobat.

Anti-virus/Anti-spyware Software

If an anti-virus/anti-spyware software on your local system identifies any of the ERLPhase applications as a “potential threat”, it will be necessary to configure your anti-virus/anti-software to classify it as “safe” for its proper operation. Please consult the appropriate anti-virus/anti-spyware software documentation to determine the relevant procedure.

1 Chapter System Overview

1.1 Introduction

The ERL 61850 IED Configurator is used to configure ERLPhase IEC 61850 based devices for substation automation. This tool helps the user to map data from remote GOOSE into ERLPhase IED data.

SCL is used for the configuration of electrical substation IEDs (61850-6 and IEC 61850-7-x).

It does the interoperable exchange of communication system configuration data between an IED configuration tool and a system configuration tool. The configuration language is based on the Extensible Markup Language (XML) version 1.0.

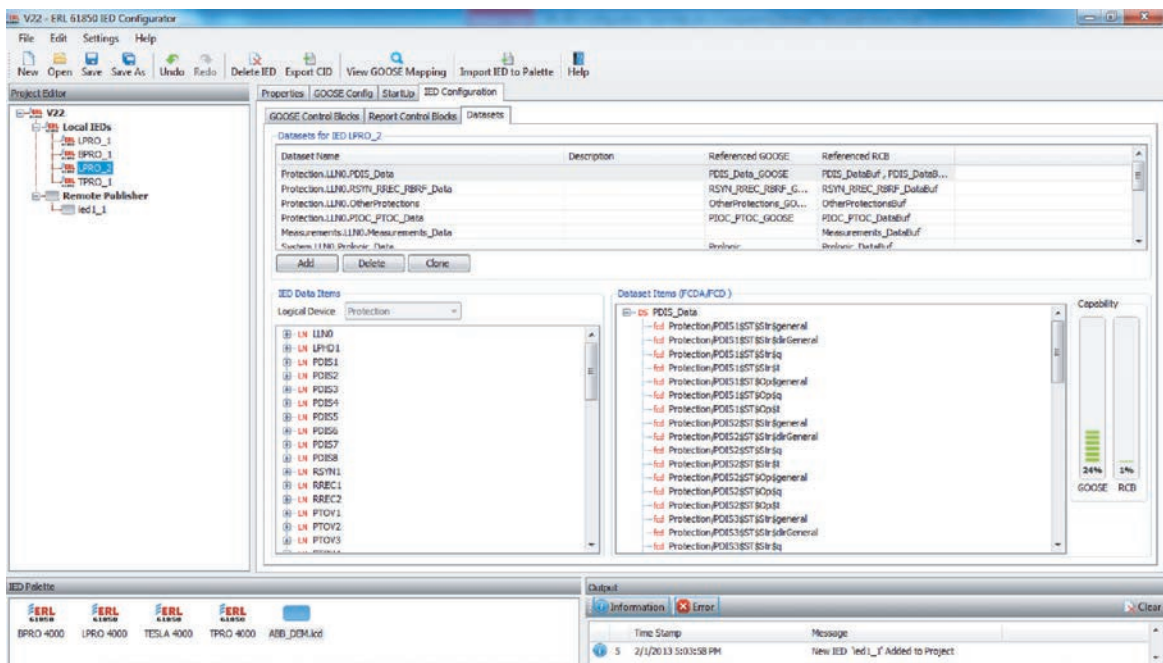


Figure 1.1: ERL 61850 IED Configurator

1.2 Definitions

Definitions of substation terminology:

1. IED – a substation automation device performing functions by means of logical nodes (LNs)
2. Server – a communication entity within an IED
3. LDevice – Logical Device, contained in a server of an IED
4. LNode – Logical Node, contained in a logical device of an IED
5. DO – the DATA contained in the LNs

SCL File Types:

ICD – IED Capability Description

Data exchange from the IED configuration tool to the system configuration tool

SSD – Substation Specification Description

Data exchange from a system specification tool to the system configuration tool

SCD – Substation Configuration Description

Data exchange from the system configuration tool to IED configuration tools

CID – Configured IED Description

Data exchange from the IED configuration tool to the IED

1.3 Features

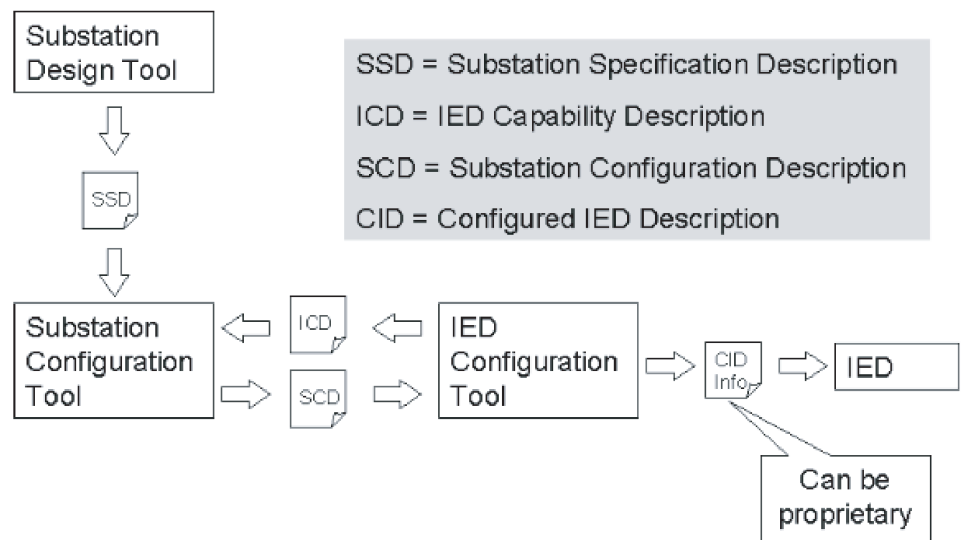


Figure 1.2: SCL File Types and Relations

ERL 61850 IED Configurator GUI has a split based window layout. The Configurator can create, edit and save projects. The project can be opened and edited in the Configurator and is saved as a binary file with a unique extension. Files with this extension can be opened and edited in the Configurator. Windows can be resized for convenience.

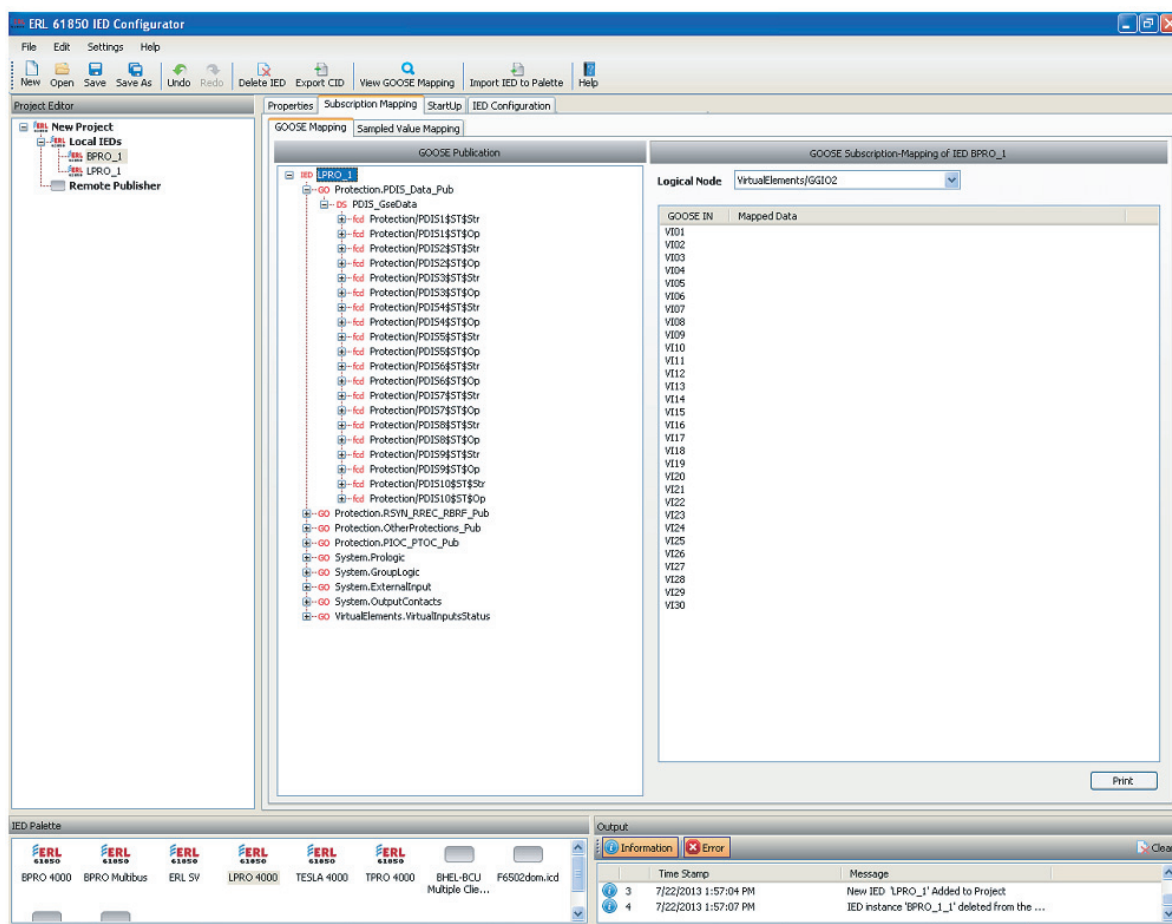


Figure 1.3: Configurator Screen

The Configurator screen is divided into four parts.

Table 1.1: Configurator Screen	
Project Editor	Project Editor lists all the local and remote IEDs
Configurations Editor	It contains IED Properties editor, GOOSE config, IED Configuration, Startup properties editor
IED Palette	IED Palette stores and displays ERL Phase IED templates and other imported templates
OutPut Window	It displays history of events and error for the present project

2 Project Editor

Project Editor lists all the local and remote IEDs added for a project created in the Configurator. A new project in Configurator opens an empty project editor.

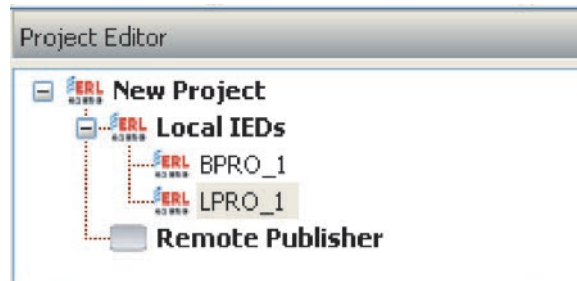


Figure 2.1: Project Editor

IEDs can be added to the project by dragging and dropping an IED from the IED Palette.

After you add a new IED, the configuration tool displays an icon representing the new IED in the Project Editor.

2.1 Create a Project

You can start a new project using the menu *File>New Project*, key board short cut Ctrl+N or from the tool bar.

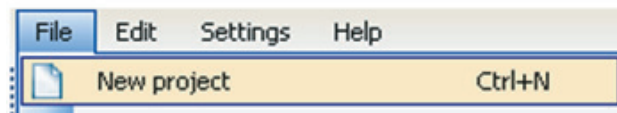


Figure 2.2: Create a New Project

2.2 Adding IEDs

You can add IEDs to the project by dragging IED product from the IED palette and dropping it into the project editor. After dropping into project editor the user is asked to select the IED as shown below.

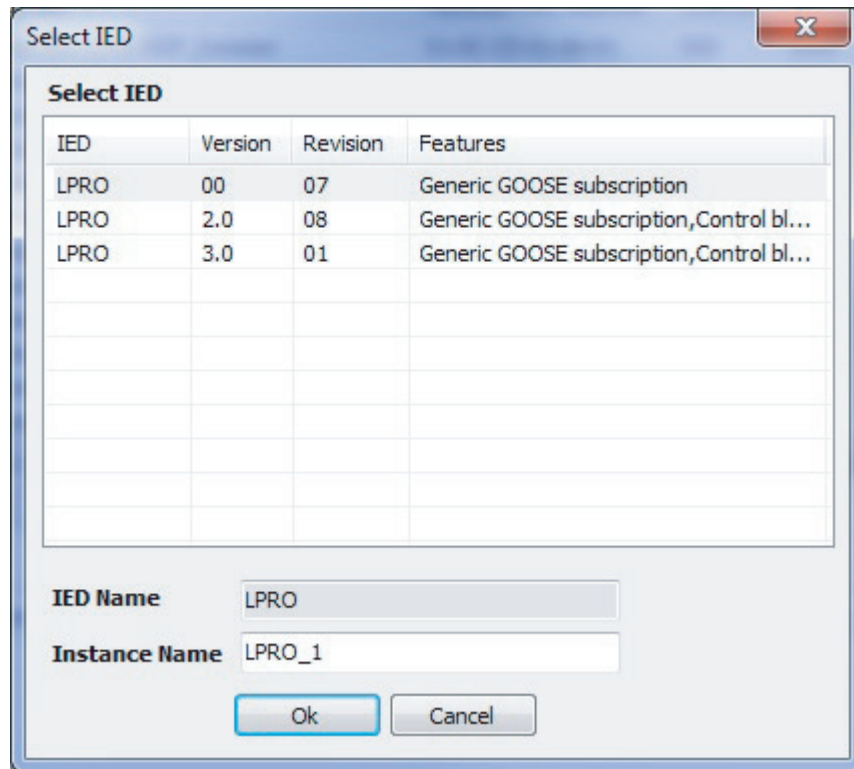


Figure 2.3: Add IED to Project

The user can select the desired IED version and enter the instance name and click *OK* to finish the process. Now the newly added IED is shown in the project editor. If the manufacturer of the IED is ERLPhase, it is added under the node Local IEDs, otherwise it is added under the node Remote Publisher. The user can distinguish between Local IEDs and Remote Publisher by the different icons.

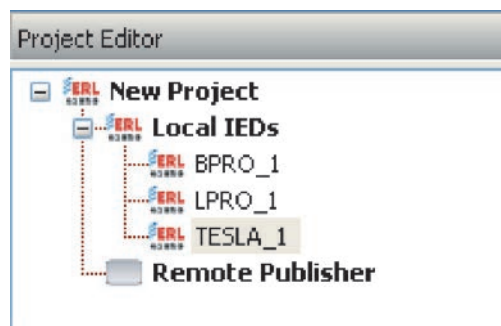


Figure 2.4: Project Editor

2.3 Other IED Functions

The user can delete an IED from the project (note that if any GOOSE elements are used for GOOSE subscription mapping delete request will be rejected), renaming an IED in the project, sending the CID file to the ERL device, downloading CID file from the ERL device, downloading ICD file from the ERL device, viewing the log file of IEC61850 application in the ERL device. (All operations of sending or downloading to/from the device will be using the IP Address configured in the IED Properties window).

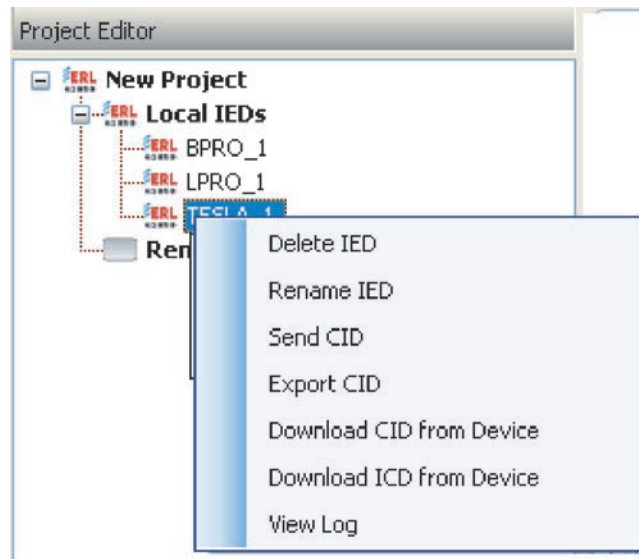


Figure 2.5: Functions Available

The functionalities other than Delete IED and Rename IED are not available for Remote Publishers (Non ERL) and ERL IEDs of unrecognized file versions.

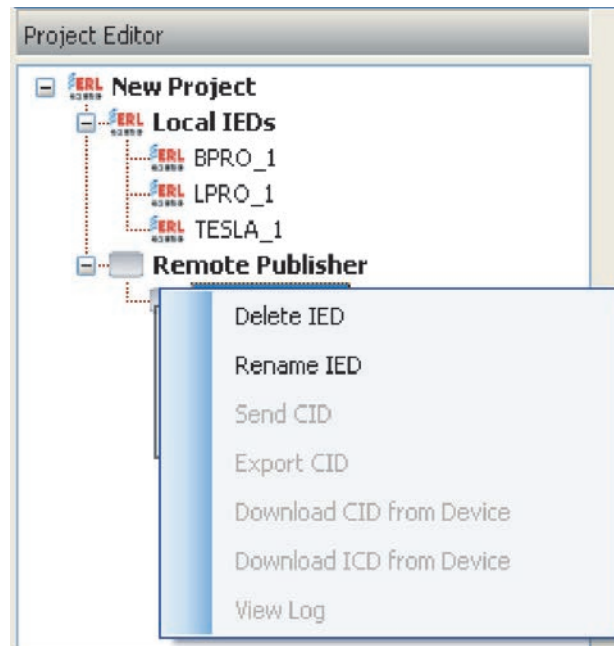


Figure 2.6: Functions are not available for the remote non ERLPhase IEDs

3 Configurations Editor

3.1 Properties

Each IED added to a project has a set of properties. These include Name, Type, Manufacturer, Description, etc.

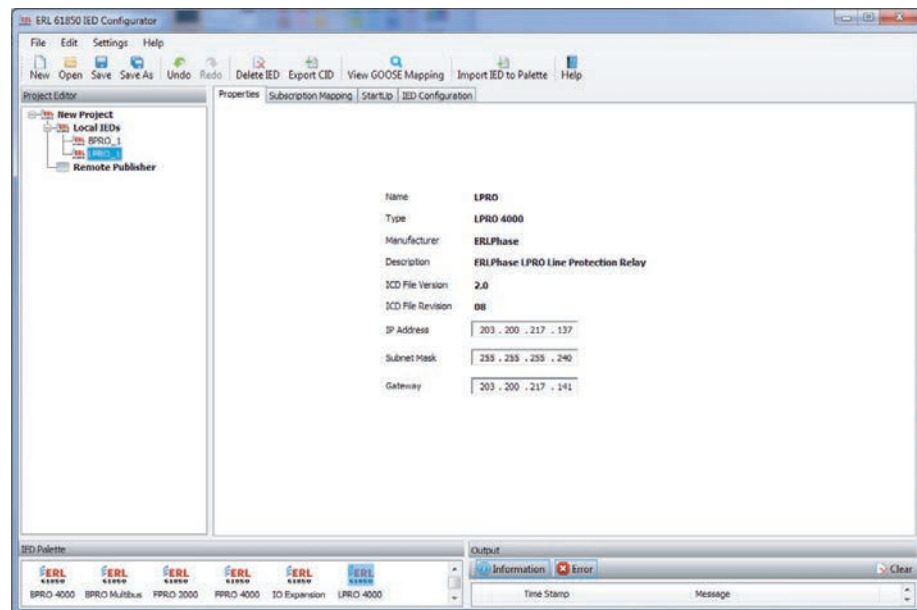


Figure 3.1: IED Properties setup screen

The IP Address indicates the IP Address of ERL IED. All ftp related operations of an IED will be refer to this address.

3.2 Goose Mapping

This configuration screen allows the user to map the desired data from the GOOSE publication to 61850 inputs of the selected IED in the project editor.

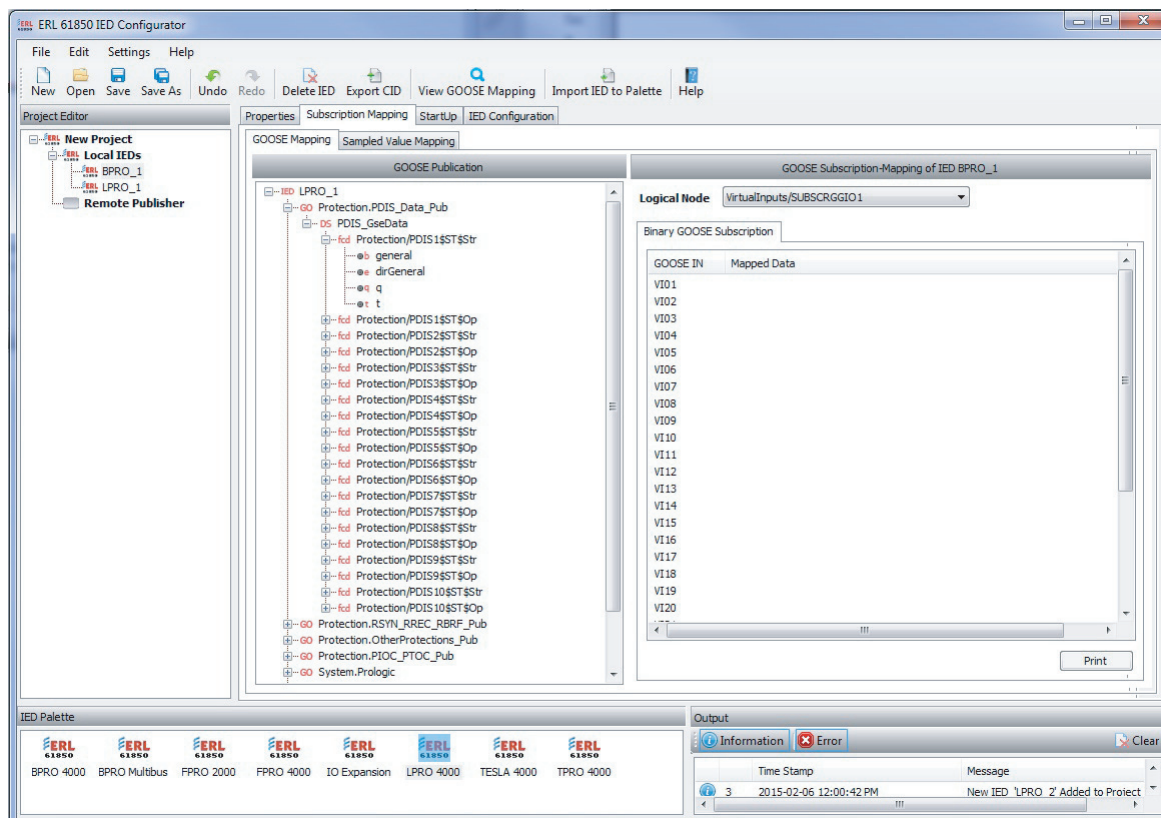


Figure 3.2: GOOSE Config

In the GOOSE Publication section the display is in the following format

Level1 – <IEDName>

Level2 – <LogicalDeviceName>.<GOOSE Name>

Level3 – <Dataset>

Level4 – <LogicalDeviceName>/<FCDA>

FCDA: Functionally Constraint Data Attribute

In the GOOSE Subscription-Mapping section the list view displays data items from the logicaldevice VirtualElements (*GGIO2->ST->Ind1->stVal* to

GGIO2->ST->Ind30->stVal) for Non-TESLA IEDs and data items from logicaldevices PhasorExtRcdTriggers(*GGIO1->ST->Ind1->stVal* to *GGIO1->ST->Ind64->stVal*) and SVExtRcdTriggers(*GGIO1->ST->Ind1->stVal* to *GGIO1->ST->Ind64->stVal*) for TESLA IEDs

Note: In addition to the above subscription points all BOOLEAN elements in any logical node of InClass = "GGIO" and prefix = "SUB-SCR" will also be listed as subscription points.

3.3 Data Mapping

The user can browse through the GOOSE publication to identify the desired data item then drag it and drop on the desired 61850 input on the GOOSE Subscription Mapping section.

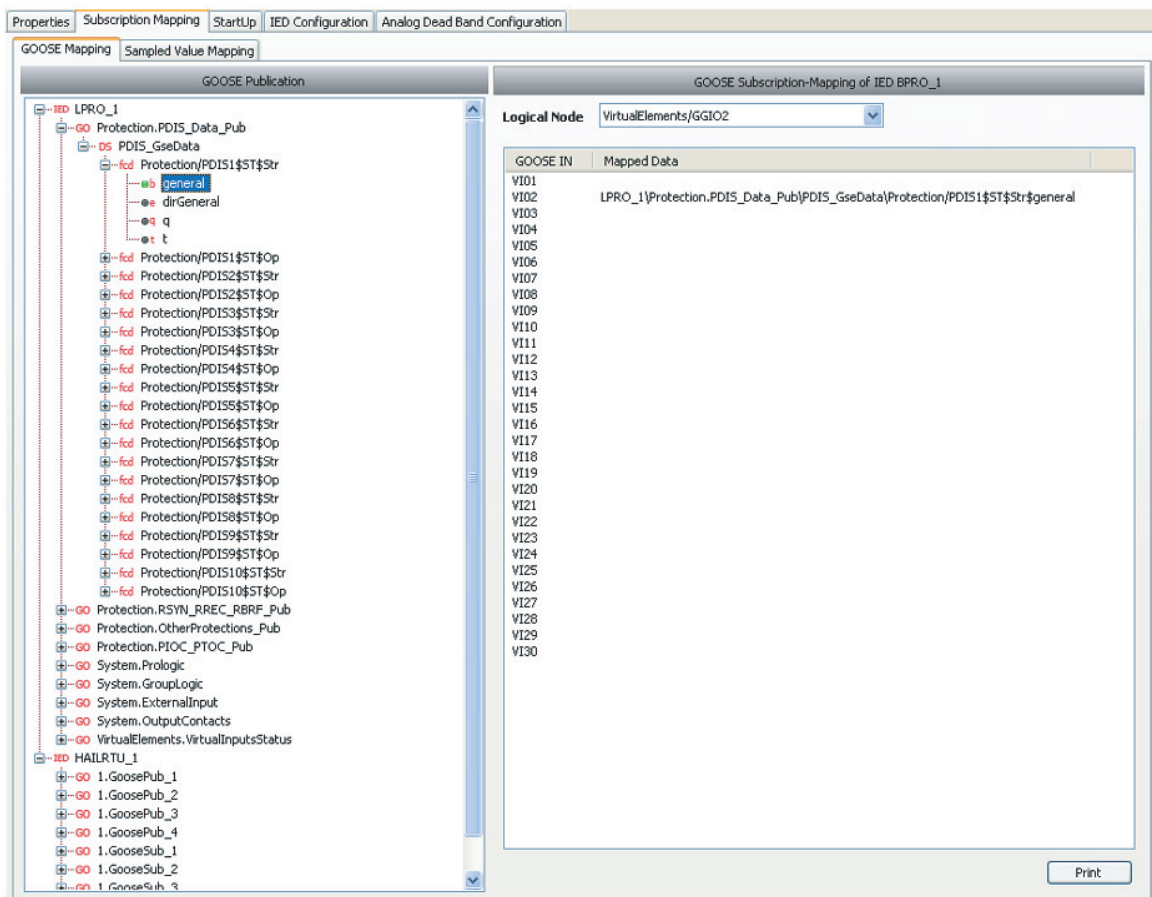


Figure 3.3: Data Mapping

The user can remove the mapping of a data item by right clicking the mapped data item and using the function Remove Mapping.

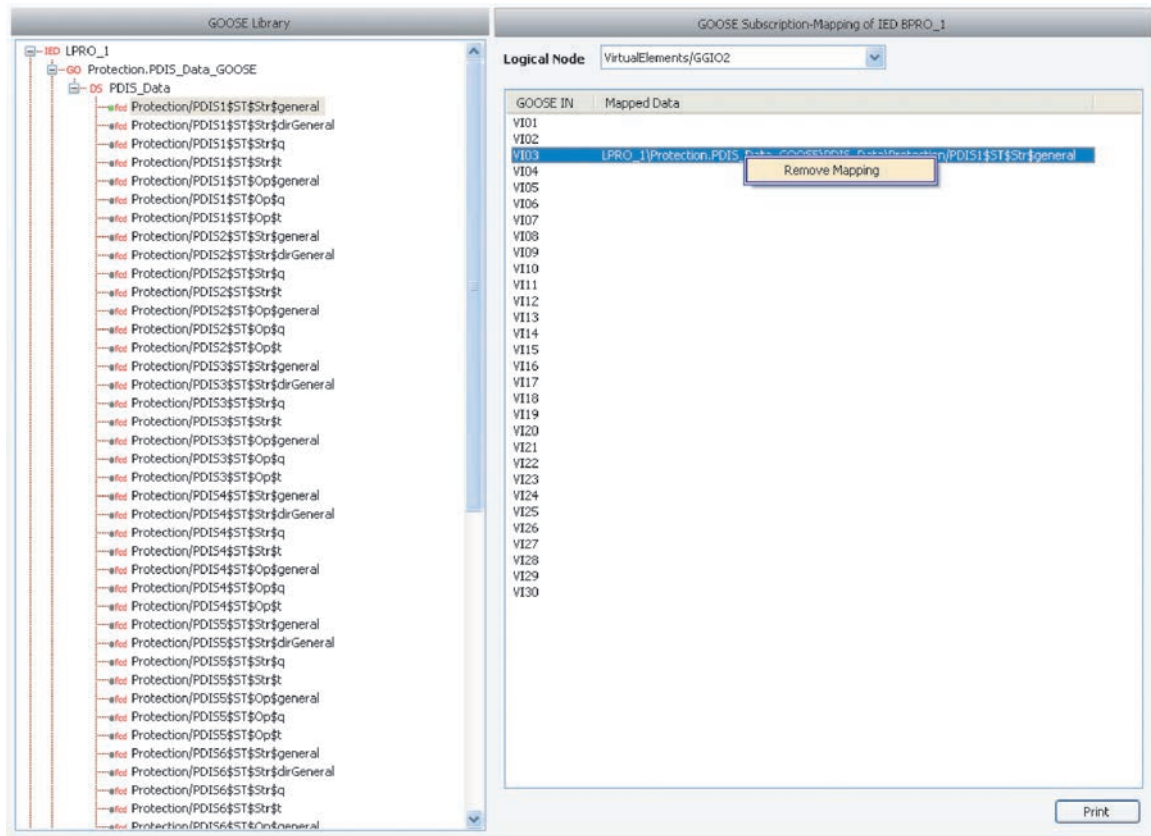


Figure 3.4: Remove a Mapping from the list by right clicking on selected items

3.4 Subscriber Display

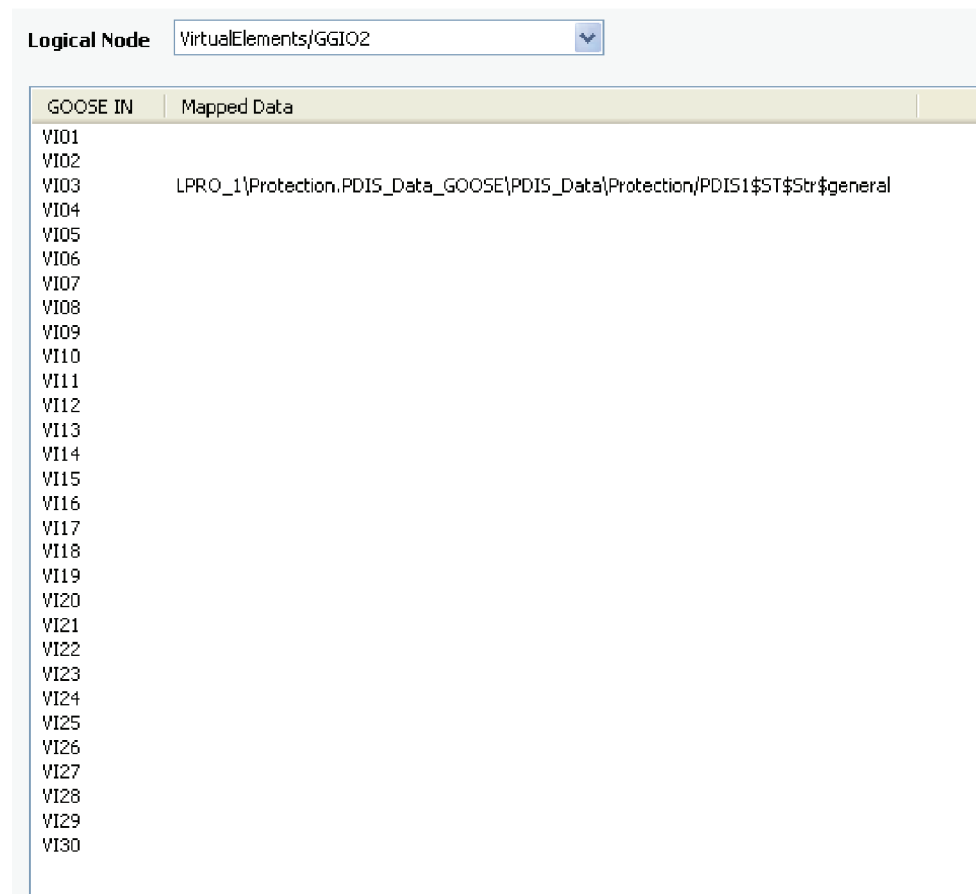


Figure 3.5: Subscriber Display

In Subscriber section Logical Node drop down lists the logical nodes pre-defined for subscription in the selected IED in project editor. According to the selection of logical node available BOOLEAN data items (in fc ST) will be listed in GOOSE subscription section .

The user can see the data path of a VI (e.g. VI03 in below shown screen) in tool tip by clicking on the GOOSE IN item.

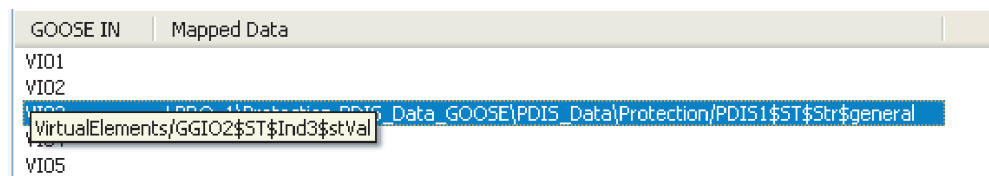


Figure 3.6: Tool tip will be shown when clicking on the GOOSE IN item

3.5 Sampled Value Control Blocks Configuration

This displays the Sampled Value control blocks' details. The publisher part shows the Sampled Value control blocks details in the selected IED in project editor.

The Subscriber part shows the incoming Sampled Value (Mapped Sampled Value) details for the selected IED.

Figure 3.7: Sampled Value control block screen

Note: Disabled Sampled Value control blocks will be grayed out in the list.

Using the check box in the list the user shall disable or enable the Sampled Value control block

Adding a Sampled Value Control Block

Click on the *Add* button in the Sampled Value Control Blocks Configuration screen which will display the screen shown below from which the user has to select the logical device to which Sampled Value control block has to be added.

Figure 3.8: Select Logical Device

After selecting the logical device click Ok button which will display the below shown screen.

New Sampled Value Control Block

SMV Details

Control Block Name:

Dataset:

SMV ID:

Description:

Sampling Rate:

No. of ASDU:

☒ Multicast

Sampling Mod:

Configuration Revision:

Address

Multicast MAC Address:

App ID (0x):

VLAN ID (0x):

VLAN Priority:

SMV Options

☒ Refresh Time ☒ Sample Rate

☒ Dataset ☐ Security

Figure 3.9: New Sampled Value Control Block

The user can enter the Sampled Value details in this screen and click *OK* button. (Note that duplicate Sampled Value name is not allowed in the same logical device and the dataset drop down list contains datasets in the selected logical device).

Editing a Sampled Value Control Block

Select the Sampled Value Control Block from Sampled Value Control Block Configuration screen. Now either double clicking on the selected Sampled Value or clicking Edit button will display the Edit Sampled Value screen where the user can edit the Sampled Value details.

Deleting a Sampled Value Control Block

Select the Sampled Value Control Block from Sampled Value Control Block Configuration screen and click on delete button.

Note: If the selected Sampled Value Control Block is used for mapping purpose in other IEDs the delete request will be rejected .

Editing Subscriber SMV

The subscriber section of Sampled Value Control Block Configuration screen contains all the Sampled Value mapped to the selected IED. The user can edit the MAC-Address of the selected Subscriber Sampled Value by either double clicking on the subscriber goose or using Edit button

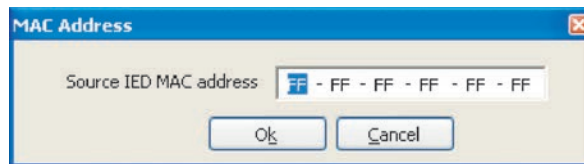


Figure 3.10: Edit MAC address

3.6 GOOSE Control Blocks Configuration

This displays the GOOSE control blocks's details. The publisher part shows the GOOSE control blocks details in the selected IED in project editor.

The Subscriber part shows the incoming GOOSE (Mapped GOOSE) details for the selected IED.

GOOSE Control Blocks | Sampled Value Control Blocks | Report Control Blocks | Datasets

GOOSE Control Blocks for IED BPRO_1

GOOSE Control Block Name	Data Set	Multicast MAC Address	VLAN ID	APP ID	GOOSE ID	VLAN Prio...	Descri...	Config...	Min
☒ Protection.LLN0.PTOV_GOCB	Protection.LLN0.PTOV_DataSet	01-0C-CD-01-00-01	000	0000	PTOV_G...	4		1	10
☒ Protection.LLN0.PTUV_GOCB	Protection.LLN0.PTUV_DataSet	01-0C-CD-01-00-01	000	0000	PTUV_G...	4		1	10
☒ Protection.LLN0.PTUF_GOCB	Protection.LLN0.PTUF_DataSet	01-0C-CD-01-00-01	000	0000	PTUF_G...	4		1	10
☒ Protection.LLN0.PTOF_GOCB	Protection.LLN0.PTOF_DataSet	01-0C-CD-01-00-01	000	0000	PTOF_G...	4		1	10
☒ Protection.LLN0.PIOC_GOCB	Protection.LLN0.PIOC_DataSet	01-0C-CD-01-00-01	000	0000	PIOC_G...	4		1	10
☒ Protection.LLN0.RBRF_GOCB	Protection.LLN0.RBRF_DataSet	01-0C-CD-01-00-01	000	0000	RBRF_G...	4		1	10
☒ Protection.LLN0.PTOC_GOCB	Protection.LLN0.PTOC_DataSet	01-0C-CD-01-00-01	000	0000	PTOC_G...	4		1	10
☒ Protection.LLN0.PDIF_GOCB	Protection.LLN0.PDIF_DataSet	01-0C-CD-01-00-01	000	0000	PDIF_G...	4		1	10
☒ System.LLN0.ExternalInput_GOCB	System.LLN0.ExternalInput_Data	01-0C-CD-01-00-01	000	0000	External...	4		1	10
☒ System.LLN0.OutputContact_GOCB	System.LLN0.OutputContact_Data	01-0C-CD-01-00-01	000	0000	OutputC...	4		1	10
☒ System.LLN0.Prologic_GOCB	System.LLN0.Prologic_Data	01-0C-CD-01-00-01	000	0000	Prologic...	4		1	10
☒ VirtualElements.LLN0.VirtualInputsSt...	VirtualElements.LLN0.VirtualInputs_Status	01-0C-CD-01-00-01	000	0000	VirtualIn...	4		1	10
☒ VirtualElements.LLN0.VirtualOutputs...	VirtualElements.LLN0.VirtualOutputs_Con...	01-0C-CD-01-00-01	000	0000	VirtualO...	4		1	10

Add Edit Delete Edit Dataset Print

IEDs mapped to BPRO_1

Incoming IED	Logical Device	GOOSE Control Block Name	Data Set	Source IED MAC Address	Multicast MAC Address	VLAN ID	APP ID	VLAN ...
LPRO_1	Protection	PDIS_Data_Pub	PDIS_GseData	FF-FF-FF-FF-FF-FF	01-0C-CD-01-00-01	000	0000	4

Edit Print

Figure 3.11: GOOSE Control Block configuration summary screen

Note: Disabled GOOSE control blocks will be grayed out in the list.

Using the check box in the list the user shall disable or enable the GOOSE control block.

Adding a GOOSE Control Block

Click on the *Add* button in the GOOSE Control Blocks Configuration screen which displays the screen shown below from which the user has to select the logical device to which GOOSE control block has to be added.

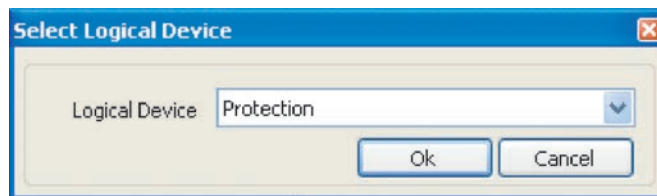


Figure 3.12: Add GOOSE Control Blocks

After selecting the logical device click *OK* button which will display the below shown screen

Figure 3.13: Enter GOOSE Details

The user can enter the GOOSE details in this screen and click *OK* button. (Note that duplicate GOOSE name is not allowed in the same logical device and the dataset drop down list contains datasets in the selected logical device).

Note : If the IED version supports VLAN management and Min/Max Time config VLAN ID, VLAN Priority, Min Time and Max Time will be enabled.

Please find the min, max limits for the parameters below.

Table 3.1: Parameters		
Parameters	Min	Max
Config Revision	1	1000
MinTime	2 ms	10000 ms
Max Time	1000 ms	600000 ms
App ID	0000x	3FFFx
VLAN ID	000x	FFFx

Editing a GOOSE Control Block

Select the GOOSE Control Block from GOOSE Control Block Configuration screen. Now either double clicking on the selected GOOSE or clicking *Edit* button will display the Edit GOOSE screen where the user can edit the GOOSE details.

Deleting a GOOSE Control Block

Select the GOOSE Control Block from GOOSE Control Block Configuration screen and click on *Delete* button

Note: If the selected GOOSE Control Block is used for mapping purpose in other IEDs the delete request will be rejected as shown below.

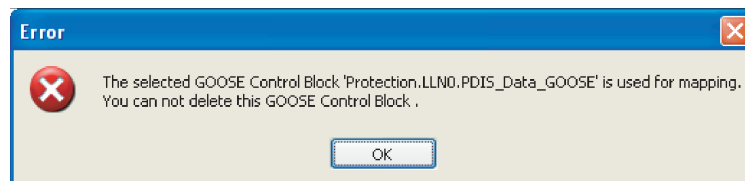


Figure 3.14: Deleting GOOSE Control Block

Editing Subscriber GOOSE

The subscriber section of GOOSE Control Block Configuration screen contains all the GOOSE mapped to the selected IED. The user can edit the MAC-Address of the selected Subscriber GOOSE by either double-clicking on the subscriber goose or using *Edit* button



Figure 3.15: Editing GOOSE Control Block

3.7 Sampled Value Mapping

This configuration screen allows the user to map the desired data from Sampled value publication to 61850 inputs of the selected IED in the project editor.

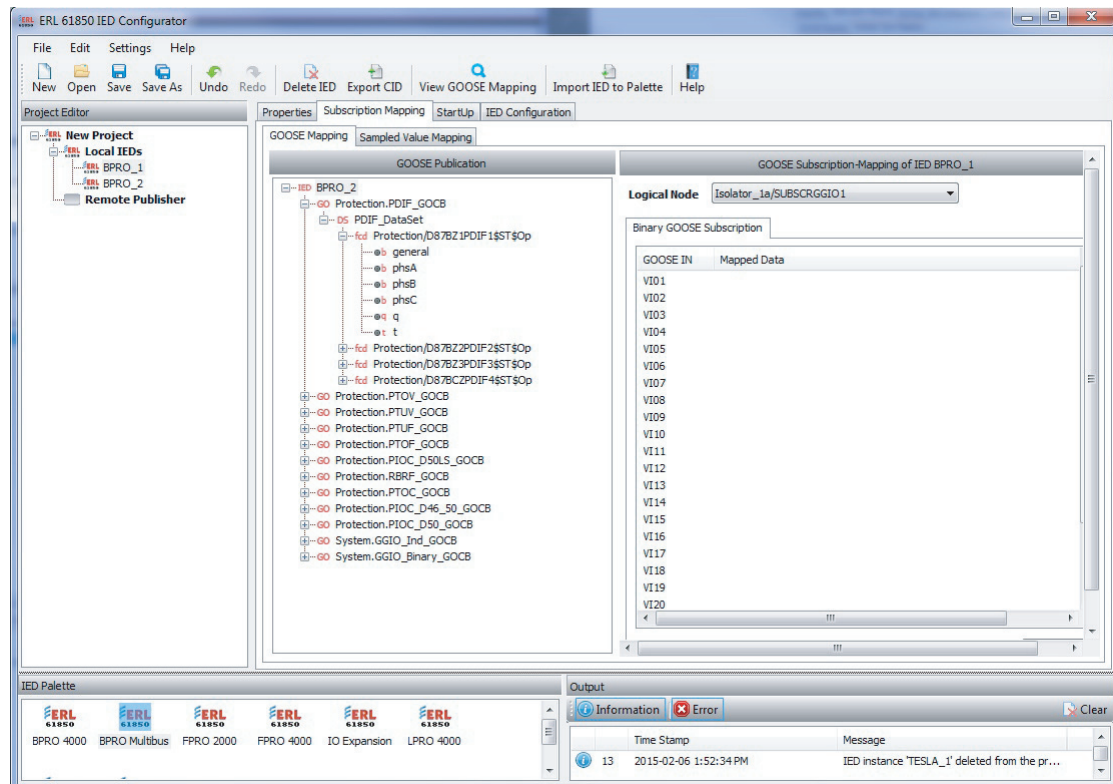


Figure 3.16: Sample value mapping screen

In the Sampled Value Publication section the display is in the following format.

Level1 - <IEDName>

Level2-<LogicalDeviceName>.<GOOSE Name>

Level3 -<DataSet>

Level4 -<LogicalDeviceName>/<FCDA>

FCDA: Functionally Constraint Data Attribute

In the SMV Subscription-Mapping section the listview displays FLOAT32 data items from logical node of InClass="GGIO" and prefix="SUBSVA" will also be listed as subscription points.

Data Mapping

The user can browse through the SMV publication to identify the desired data item then drag it and drop on the desired 61850 input on the SMV Subscription Mapping section.

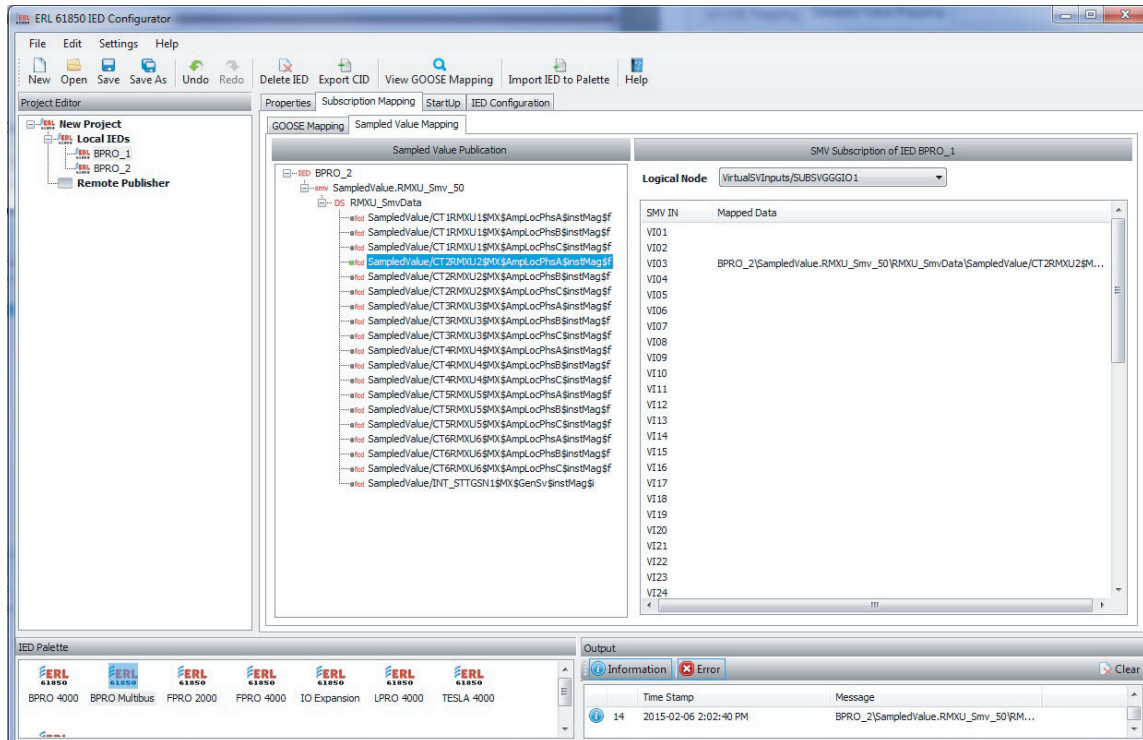


Figure 3.17: Sample value mapping

The user can remove the mapping of a dataitem by right clicking the mapped data item and using the function Remove Mapping

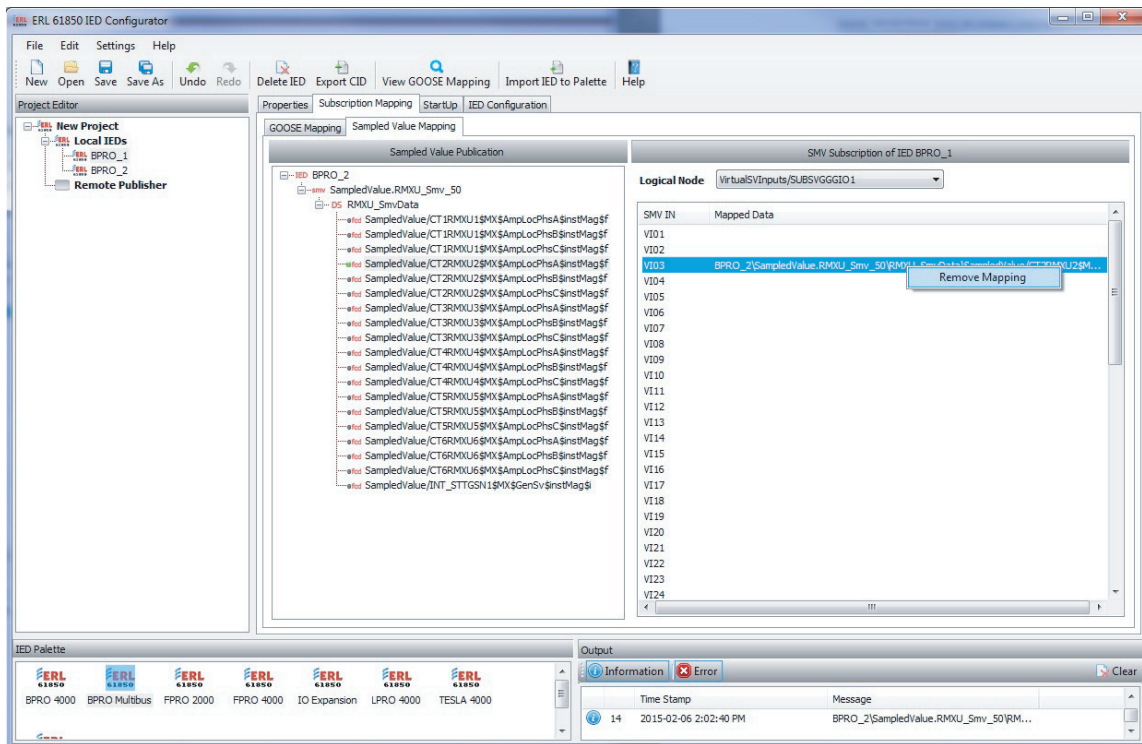


Figure 3.18: Removing Sample Value Mapping

Adding a Report Control Block

To add a Report Control Block click on *Add* button. It will display the below shown screen.

New Report Control Block

RCB Details

RCB Name

RCB ID

Logical Device

Logical Node

Dataset

Buffered ☐

Buffer Time (ms)

Integrity Periods(ms)

Number of Instances

Description

RCB Options Fields

☐ Sequence Number ☐ Report Timestamp

☐ Reason for inclusion ☐ Dataset Name

☐ Data Reference ☐ Buffer Overflow

☐ Entry ID ☐ Config Revision

RCB Trigger Options

☐ Data Change ☐ Quality Change

☐ Data Update ☐ Integrity

☐ General Interrogation(GI)

Ok Cancel

Figure 3.20: Adding a Report Control Block

The user can enter the Report Control Block details in this screen. The user can select to which logical device report control block has to be added. Datasets from the LLN0 of selected the logical device will be listed in the dataset drop down. After entering the details the user has to click *OK* button. Please note that the Report Control Block is created in LLN0 of logical device.

Please find the min, max limits for the parameters below.

Table 3.2: Setting Parameters and Corresponding Setting Ranges		
Parameters	Min	Max
Buffer Time	0 ms	3600000 ms
Integrity Period	0 ms	1800000 ms
Number of Instances	1	16

Editing a Report Control Block

Select the Report Control Block from Report Control Block Configuration screen. Now either double-clicking on the selected Report Control Block or clicking *Edit* button displays the Edit RCB screen where the user can edit the Report control block details.

Deleting a Report Control Block

Select the Report Control Block from Report Control Block Configuration screen and click on *Delete* button. The user will be asked to confirm the action.

Printing Report Control Blocks information

The user can print report control blocks information using the *Print* button.

Bitstring Format for Displaying RCB Options Fields and Trigger Options

In IED Configurator the RCB Options fields are displayed in bitstring format as shown below

Options Fields	Trigger Options
0111110110	010010

Figure 3.21: RCB Options Fields

RCB Options Fields are displayed in the following order of bits.

Table 3.3: Options Fields Bits Description	
ACSI Value of BRC State	MMS Bit Position
reserved	0
sequence-number	1
report-time-stamp	2
reason-for-inclusion	3

Table 3.3: Options Fields Bits Description

ACSI Value of BRC State	MMS Bit Position
data-set-name	4
data-reference	5
buffer-overflow	6
entryID	7
conf-revision	8
segmentation	9

RCB Trigger options are displayed in the following order of bits:

Table 3.4: Trigger Options

Bit 0	reserved (reserved to provide backward compatibility with UCA 2.0)
Bit 1	data-change
Bit 2	quality-change
Bit 3	data-update
Bit 4	integrity
Bit 5	general-interrogation

3.9 Datasets Configuration

This configuration screen displays all the datasets in a list, IED Data Items of the selected IED and the dataset items of the selected dataset.

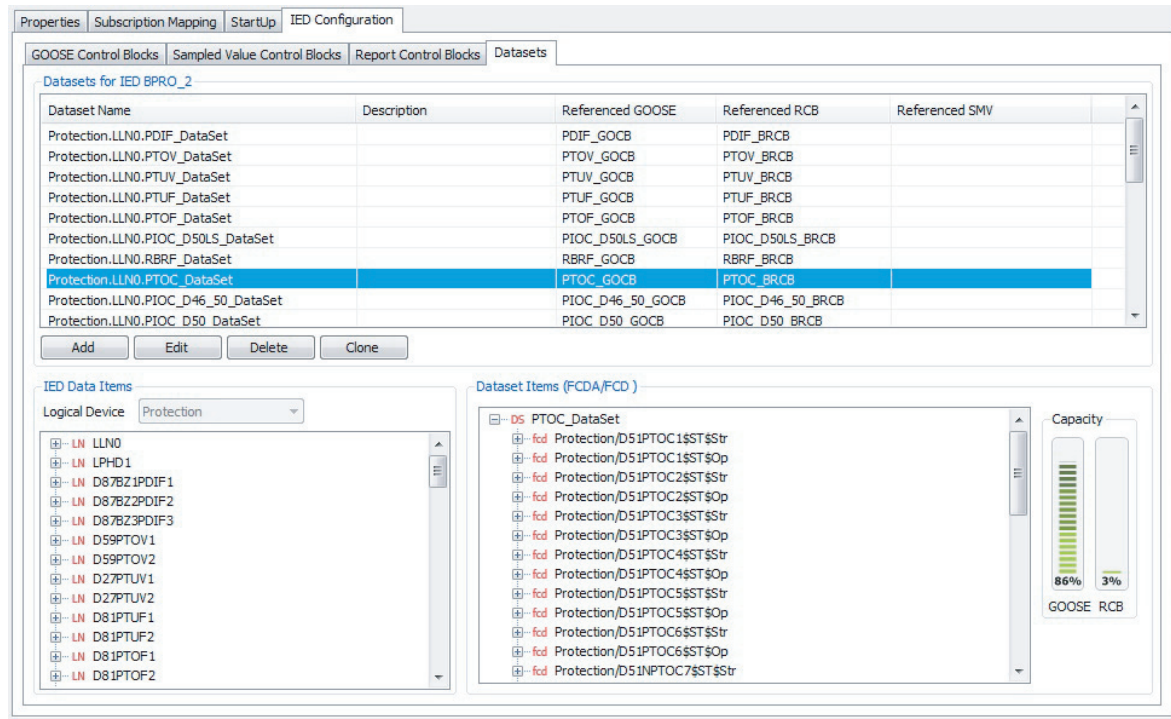


Figure 3.22: Datasets Configuration

The capacity meter for GOOSE and RCB display the capacity of the dataset for GOOSE and RCB.

Adding a Dataset

The user can add a new dataset by clicking on *Add* button. It will display a screen as shown below.

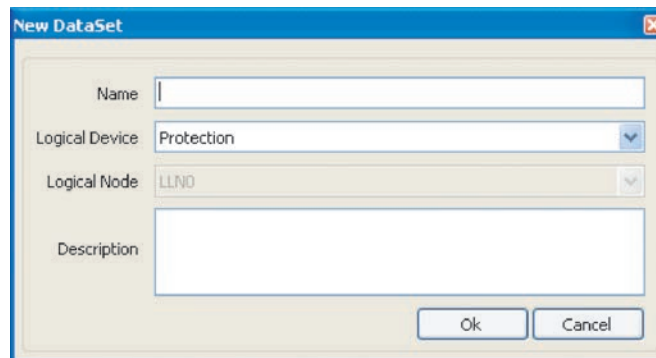


Figure 3.23: Adding a Dataset

The user can enter the dataset details and click the *OK* button, then the data set is added to the selected logical node (logical node is fixed as LLN0) in selected logical device. (Note that while adding the dataset user is not selecting the data items (FCDA/FCD) for the dataset. This can be later configured from the Datasets Configuration screen).

Editing/ Configuring a Dataset

The user can select the dataset to be edited from the list.

Dataset Items (FCDA/FCD) section shows the data items present in the selected dataset. IED Data Items shows the Logical devices and logical nodes in the logical device. The user can select the desired data object or data attribute from the logical node and drag it and drop in the Dataset Items (FCDA/FCD) section.

Deleting a Dataset

The user can select the desired dataset from the list and click on *Delete* button. The user will be asked to confirm the action.

If the dataset is referenced by a GOOSE control block or Report Control Block it can not be deleted. dataset.

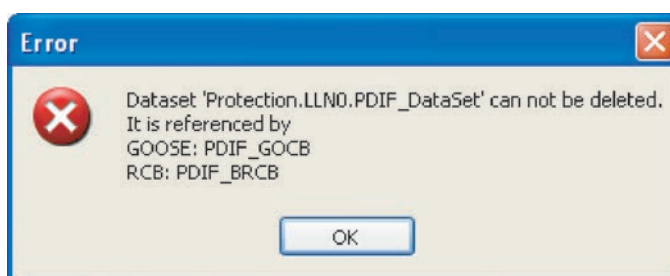


Figure 3.24: Deleting a Dataset

Cloning a Dataset

This functionality is for creating a dataset from an existing dataset. The user can select the desired dataset from the drop down list to be cloned and click on *Clone* button. The user can see the below shown screen in which the user can enter the dataset name and description.

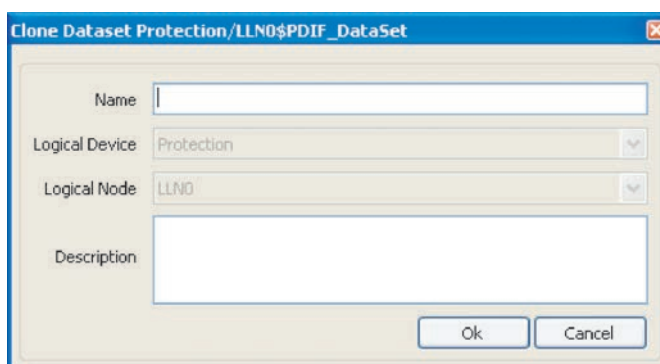


Figure 3.25: Cloning a Dataset

3.10 StartUp cfg File Details

This screen displays all the Startup Configuration details of the selected IED.

StartUp cfg File properties	
SCLFileName	../config/ERLPhaseLPRO4000v3.icd
IEDName	LPRO_1
AccessPointName	AccPoint1
ReportLog Scan Rate (milliseconds)	1000
Report BufferSize (bytes)	10000
NetworkCardID	/dev/lo-net/en0
IPAddress	192.168.100.37
MAX_CALLED_CONNECTIONS	4
MAX_DYNAMIC_TYPES	8000
MAX_LN_VARS	4000
MAX_NUM_DATASETS	100
MAX_PDU_SIZE (bytes)	32000
MAX LOG FILE SIZE (KBs)	60
LogLevel	ERROR
MAX_NUM_DS_VARS (Maximum dataset variables in a subscribed GOOSE)	128
MAX_SUB_GOOSE (Maximum number of subscribed GOOSE)	32
MAX_NUM_SMV_DS_VARS (Maximum dataset variables in a subscribed SMV)	128
MAX_SUB_SMV (Maximum number of subscribed SMV)	32
System Frequency (Hz)	50

Figure 3.26: StartUp cfg File Details

Table 3.5: StartUp Parameters Description

Parameter	Description
SCLFileName	Name of SCL(CID) File to be parsed by IEC61850 application
IEDName	Name of IED to be parsed by IEC61850 application from SCL(CID) File
AccessPointName	Access point information to IEC61850 application
ReportLog Scan Rate (milliseconds)	Internal Data Scan Rate for the generation of Reports based on data changes
Report BufferSize (bytes)	Circular Buffer allocated for storing buffered reports in IEC61850 application
NetworkCardID	NetworkCardID
IPAddress	IPAddress
MAX_CALLED_CONNECTIONS	Maximum number of client connections that can be accepted by IED
MAX_DYNAMIC_TYPES	Buffer allocated for storing data types. Configuration file parsing will fail if maximum limit is reached
MAX_LN_VARS	Buffer allocated for storing variables inside a logical Node. Configuration file parsing will fail if maximum limit is reached
MAX_NUM_DATASETS	Buffer allocated for storing datasets. Configuration file parsing will fail if maximum limit is reached

Table 3.5: StartUp Parameters Description

MAX_PDU_SIZE (bytes)	Maximum Size of MMS Packets; Data exchange with IEC61850 Client will use this parameter
MAX LOG FILE SIZE (KBs)	Maximum Size of the Circular Log file
LogLevel	Logging mode of IEC61850 application while running
MAX_NUM_DS_VARS	Buffer allocated for storing dataset variables of a subscribed GOOSE. Configuration file parsing will fail if maximum limit is reached
MAX_SUB_GOOSE	Buffer allocated for storing subscribed GOOSE information, Configuration file parsing will fail if maximum limit is reached

4 IED Palette

IED Palette stores and displays ERL Phase IED templates as well as other remote IEDs. ICD files are allowed to import as templates. ERL IED files are categorized by their product name.



Figure 4.1: IED Palette

IED product contains different versions of IED files.

e.g. B-PRO 4000 product contains IED files of version 1.0 and 2.0.

The user can import new IED template to IED Palette using the functionality Import IED. The user gets the below shown menu when right-clicking on the IED Palette.



Figure 4.2: Import IED

The user can browse the desired ICD, CID or SCD file to be added to the IED Palette.

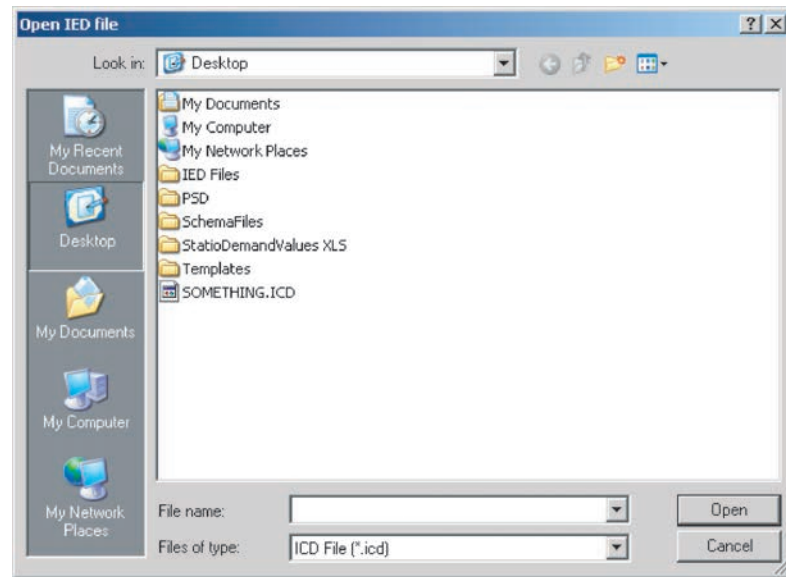


Figure 4.3: Browse Files

If the user is trying to add a ERL IED file the below shown screen appears to display the Product Type and ICD File Version of the selected file.

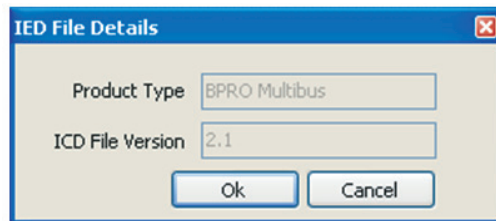


Figure 4.4: IED File Details

Please note that this information is read from the selected IED file.

Once the user clicks *OK* this IED file is added to product B-PRO 4000. Please note that if any IED file with ICD file version exists in the product, the user has to confirm the action.

5 Output Window

This window shows the different Informations and errors related to IED Configurator.

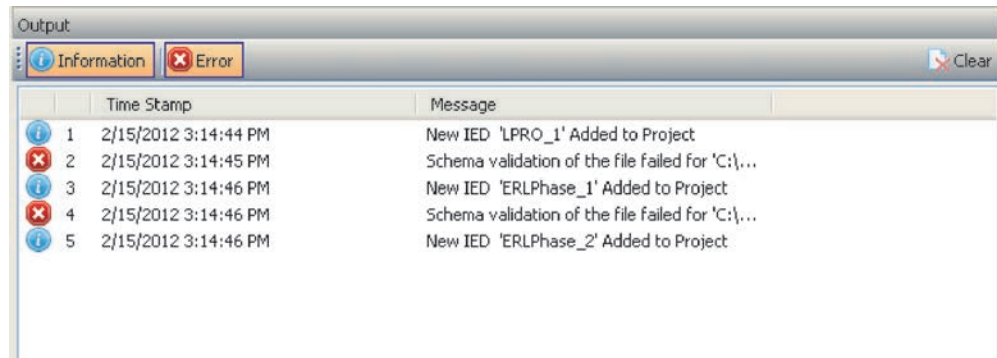


Figure 5.1: Output Window

6 File Menu

6.1 Overview

Select File from the Menu Bar to obtain a drop-down listing similar to the following.

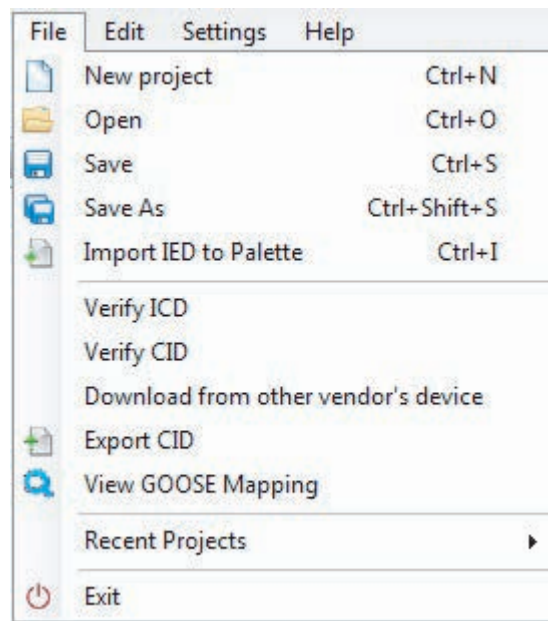


Figure 6.1: File Menu

Table 6.1: File Menu	
New	Creates a New Project.
Open	Opens a project.
Save	Saves the project.
Save As	Save as the project.
Import IED into Palette:	Imports a ICD/CID file to IED Palette.
Verify ICD	This option is for validating the original file of IED in the project editor against the SCL schema.
Verify CID	This option is for validating an IED file with all configurations done using IED Configurator against the SCL schema. If the validation is successful user gets a message Scheme Validation Successful. Otherwise user will get a window where all errors are listed as show below.

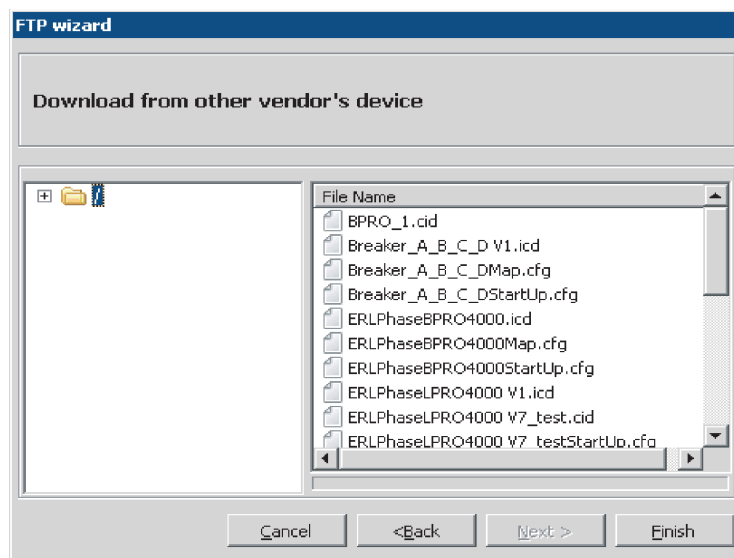


Figure 6.4: Example: Files shown in the remote IED through ftp tool provided by the configurator

From the listview of files the user can select the file and download to a local system using the *Download from Device* (right click menu) functionality. The user will be asked for the path where the downloaded file to be saved.

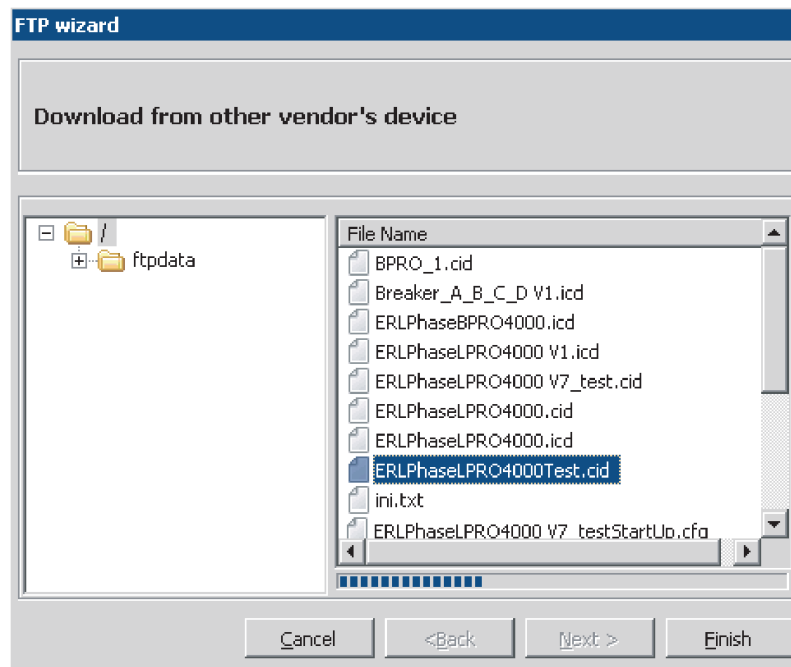


Figure 6.5: Downloading the selected file

The user can see the downloading progress just below the listview of files.

6.3 Export CID

This option is for exporting the selected IED in project editor to CID file with GOOSE Subscription (mapping) information and IED configuration information.

6.4 View GOOSE Mapping

This functionality allows the user to connect to an IED selected in the project editor. By default this will connect to the IP Address present in the IED properties

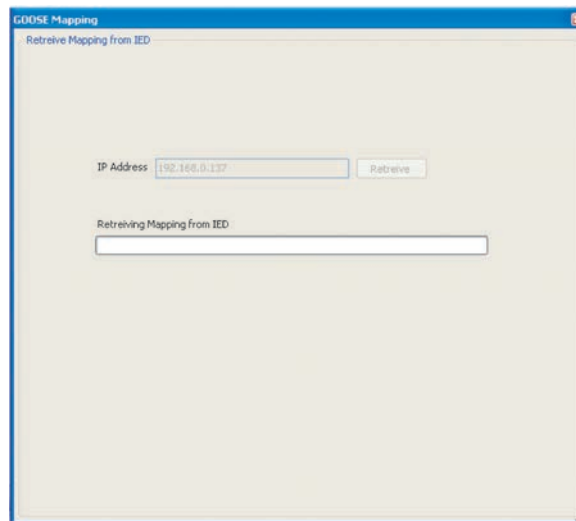


Figure 6.6: Configurator retrieves the mapping information from the ERLPhase IED

Once the cid file is retrieved from the IED, the mapping present in the cid file will be shown as below

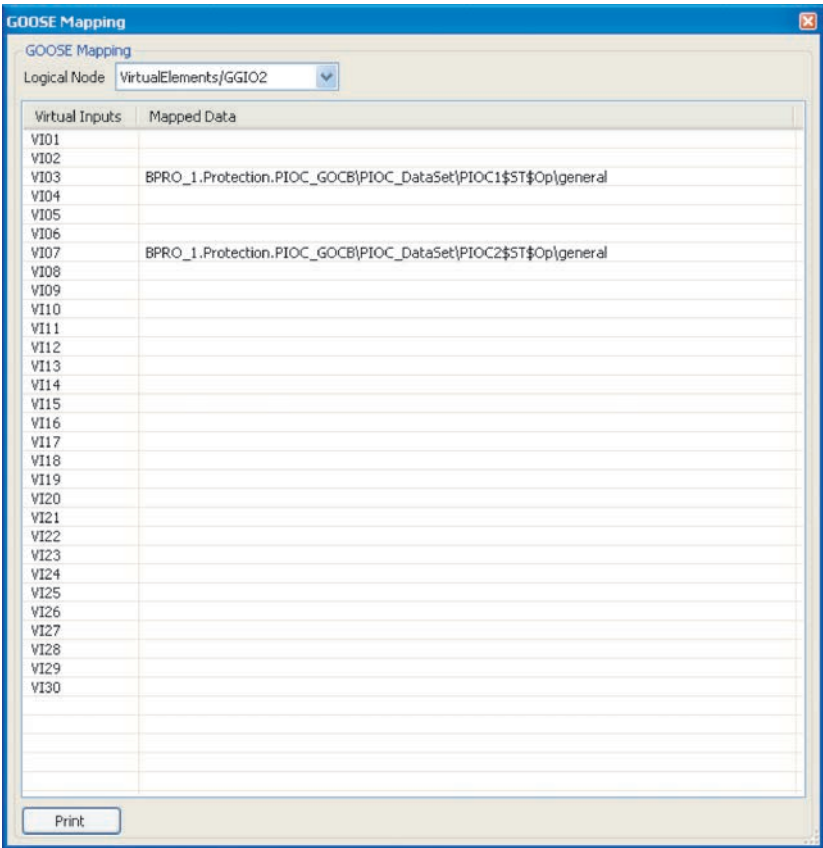


Figure 6.7: View GOOSE Mapping screen

6.5 Recent Projects

This shows the recently opened IED Configurator project files.

Edit:

Edit contains undo and redo functions.

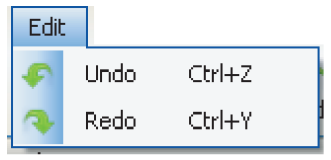


Figure 6.8: Undo and Redo function for error correction

Undo/Redo is available for following operations of IED Configurator:

- Adding a IED to project
- Deleting a IED from project
- IED instance renaming in project editor.
- GOOSE subscription mapping
- GOOSE subscription mapping removal
- GOOSE control block Add, Edit, Delete
- Report control block Add, Edit, Delete
- Dataset Add, Edit/Configure, Delete

7 Settings

Change Password

This functionality allows the user to change the login password for ERLPhase IED Configurator. The default password is **ERLConfigTool**.



Figure 7.1: Change password under Settings

