

# INSTRUCTION BOOKLET

AQtivate 300 IEC61850 configuration

TABLE OF CONTENTS

1 INTRODUCTION..... 4

2 WEB SERVER ..... 5

    2.1 Downloading CID-file ..... 5

    2.2 Enabling IEC61850 ..... 6

3 AQTIVATE300-SOFTWARE ..... 7

    3.1 Communication configurator ..... 7

        3.1.1 IED name..... 8

        3.1.2 Adding a dataset..... 8

        3.1.3 Adding a report control block ..... 9

    3.2 GOOSE publisher ..... 10

    3.3 GOOSE subscriber ..... 12

4 REFERENCE INFORMATION ..... 15

<b>Revision</b>	<b>1.0</b>
Date	12.2. 2015
Changes	N/A

# 1 INTRODUCTION

This guide will show the basic steps on how to configure AQ300 series devices when it comes to IEC61850 communication. This document is applicable for all models in the AQ300 product family. AQtivate 300 software is needed to setup IEC61850 configuration. Some relay functions require the user to connect through “web server interface” which can be done with most web browsers (Internet Explorer, Firefox, Chrome, Opera). Contact Arcteq Relays to get the latest AQtivate 300 software.

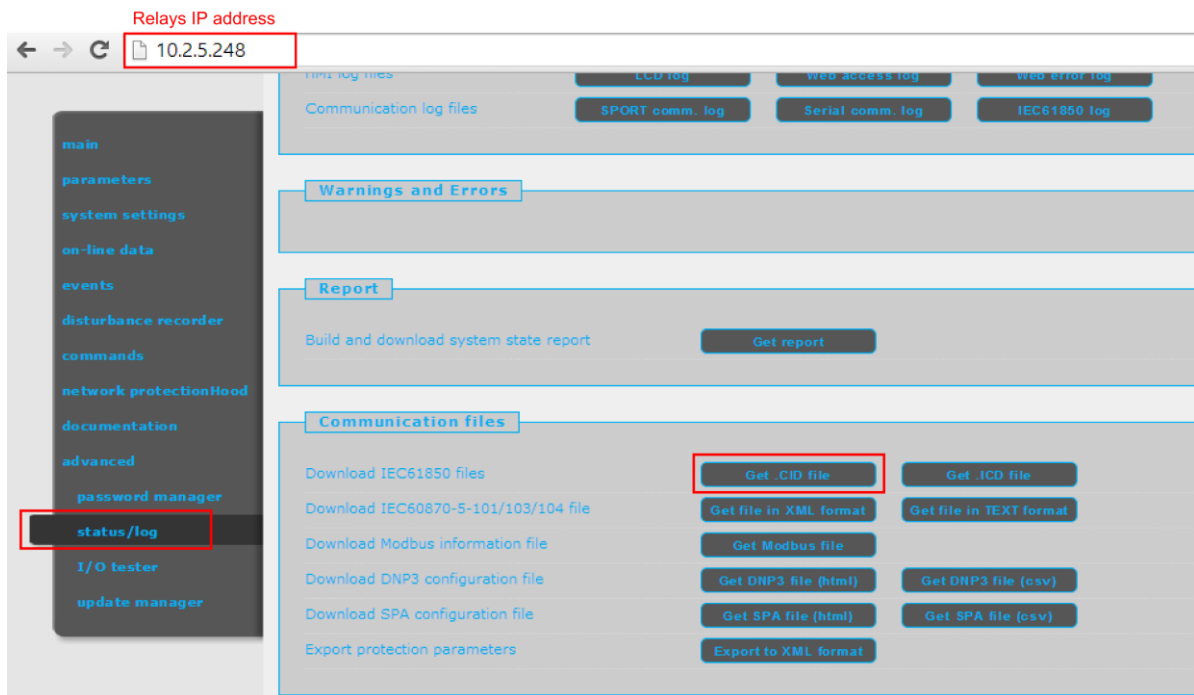
More detailed instructions of web server interface and AQtivate300 setting tool can be downloaded from Arcteq Relays website [www.arcteq.fi](http://www.arcteq.fi).

## 2 WEB SERVER

AQ300 series relays have a web server interface which can be accessed via web browser. Open your web browser (Mozilla Firefox, Google Chrome, Internet Explorer etc.) and enter the IP address of the relay into the URL bar.

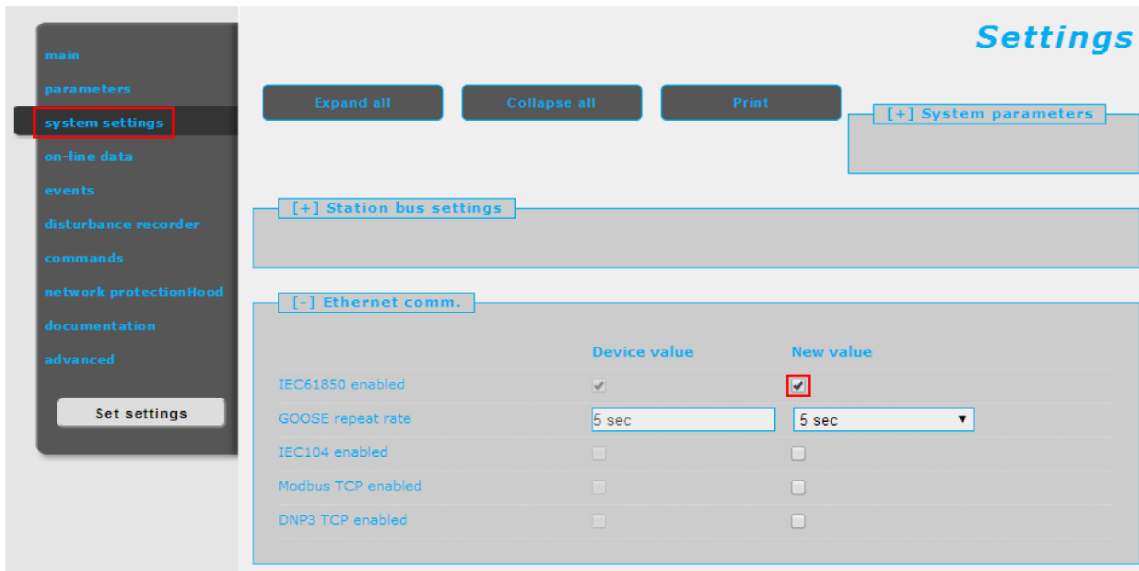
### 2.1 DOWNLOADING CID-FILE

CID-file can be downloaded under **Advanced** → **Status/log** menu by clicking **Get .CID-file**.



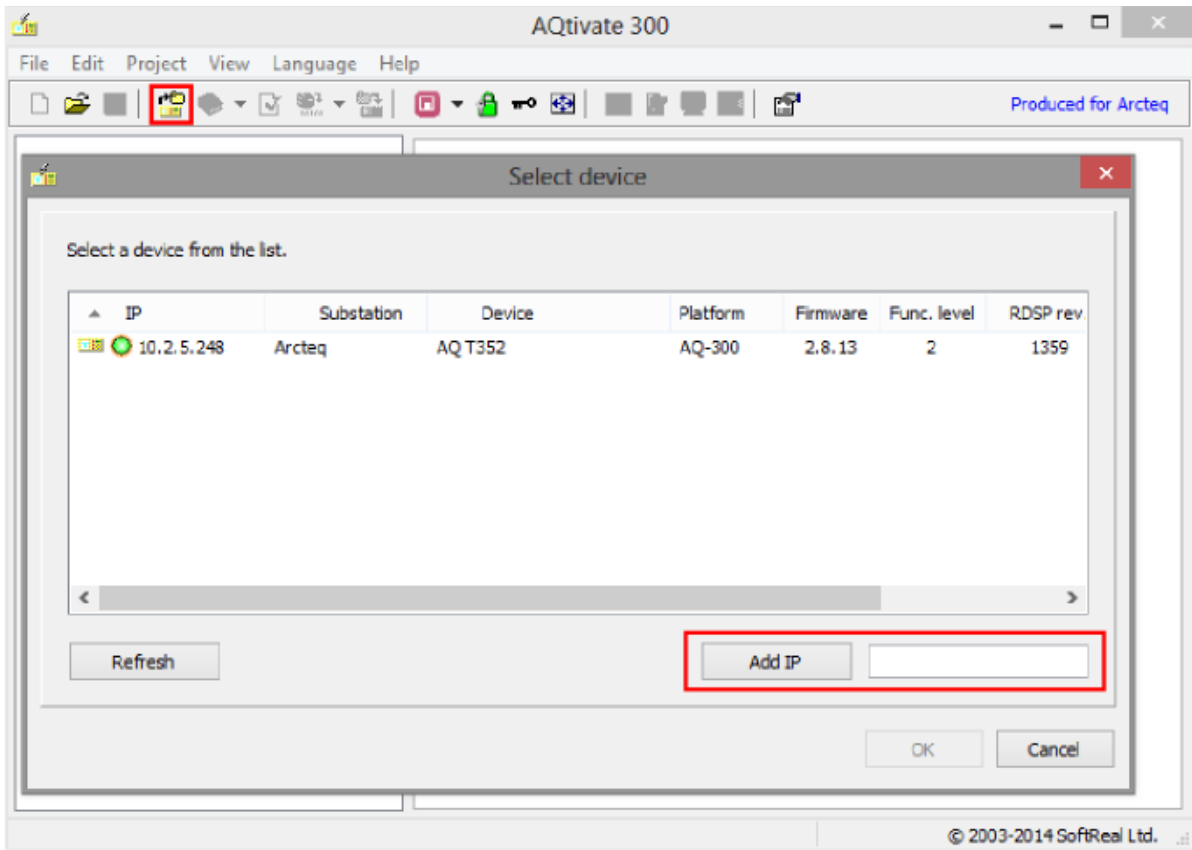
## 2.2 ENABLING IEC61850

For IEC61850 to be functioning in the AQ3xx series relay you must enable it. See picture below. This is the only step needed to get IEC61850 started in the device. After this it is possible to connect to the device using an IEC61850 client. (As long as IP address information is setup).



### 3 AQTIVATE300-SOFTWARE

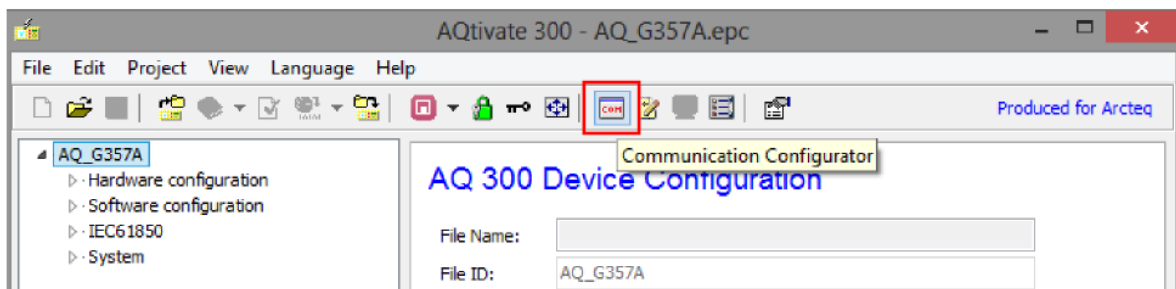
To get the configuration from an AQ300 device open the AQtivate300 software and press **Upload** button. A list of devices in the network will appear. Sometimes your computer may not find the relays in the network. In these cases insert the IP address manually.



It is advised to always log into **Master view** as it is required to do any sort of changes to configurations. Press the green lock to open and a view selection will appear.

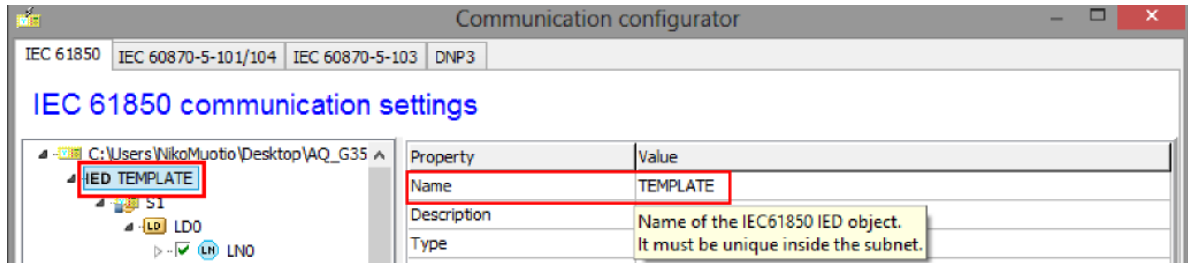
#### 3.1 COMMUNICATION CONFIGURATOR

IEC61850 configuration can be opened with the **Communication Configurator**.



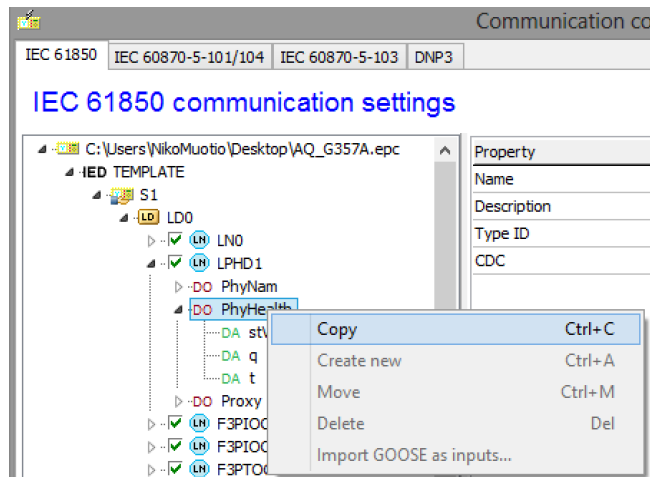
### 3.1.1 IED NAME

Relays IEDNAME must be set as a unique name in the system.

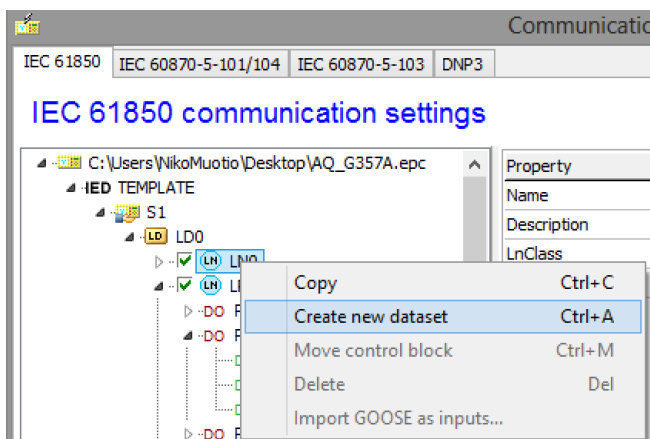


### 3.1.2 ADDING A DATASET

To make a new dataset copy a data object you want to include in the new dataset.

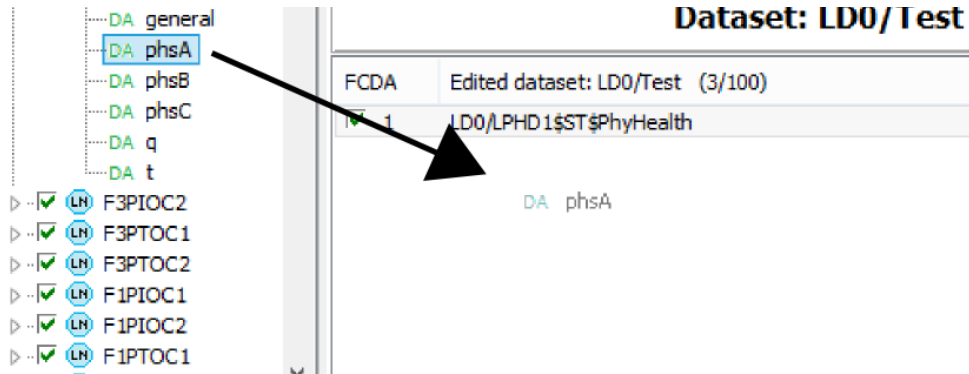


Then right click on LNO and choose **Create new dataset**.



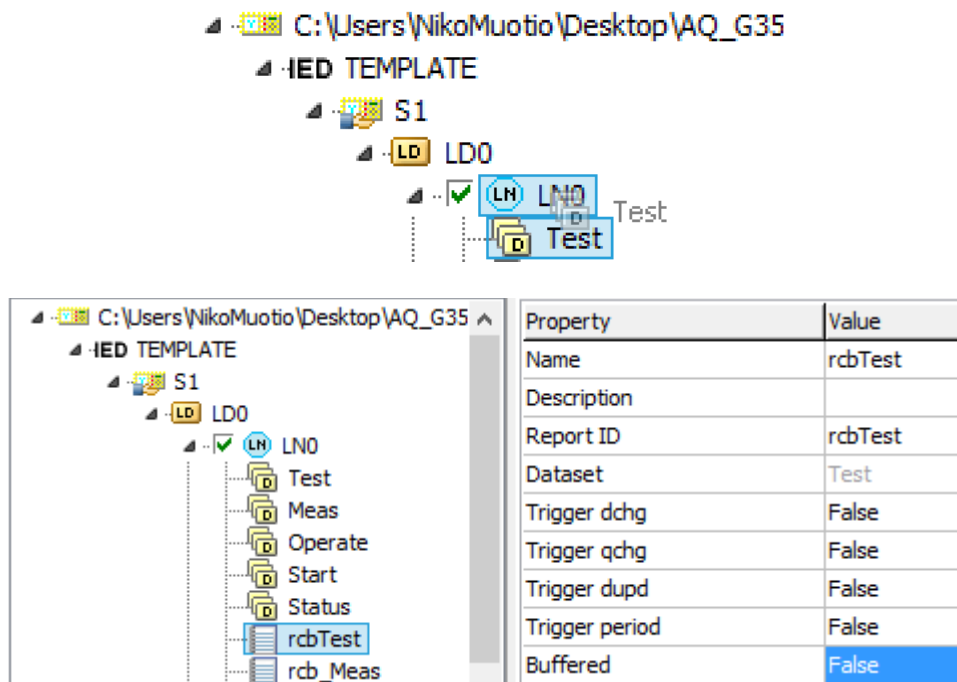


After that it is possible to rename the dataset and start including other objects in it with drag-and-drop. When you want to add objects to a dataset click the dataset and then drag and drop the wanted objects into the box in bottom right corner.



### 3.1.3 ADDING A REPORT CONTROL BLOCK

To link the just added dataset to a report control block, drag the dataset onto LN0. After this you can rename the RCB and make choice if it is going to be buffered or un-buffered.



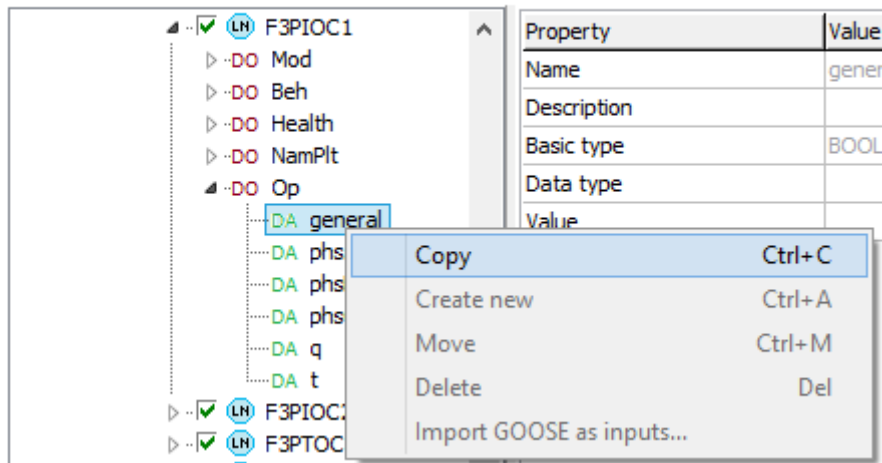
Server collects, buffers and reports buffered control blocks information even if there is no subscription from the client. Unbuffered report control block reports only when there is a subscription from the client.

### 3.2 GOOSE PUBLISHER

To make a GOOSE control block for publishing with linked dataset follow the same steps as for making a new dataset. Just remember to add items to the dataset on Data Attribute level and include **GOOSE** in the dataset name.

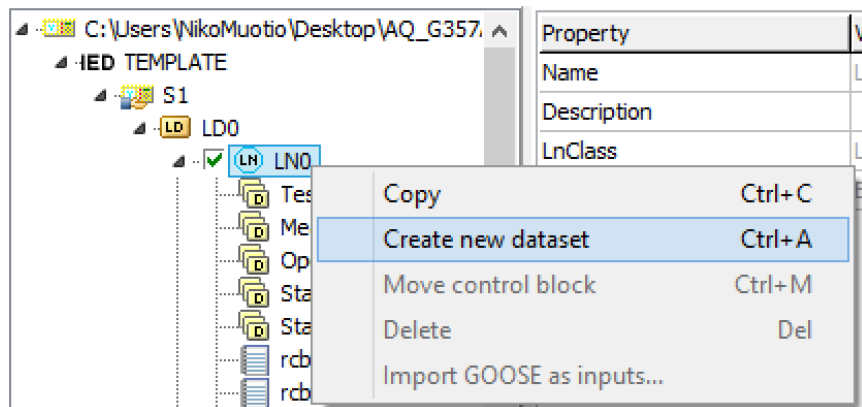
Copy the first signal on **Data Attribute level**.

#### IEC 61850 communication settings



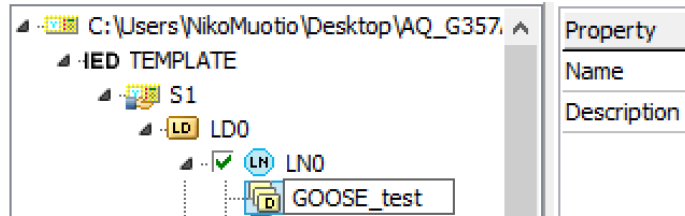
Create new dataset by right clicking on LN0 and **Create new dataset**.

#### IEC 61850 communication settings



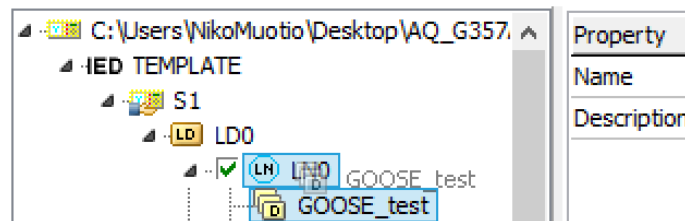
Give a name for the new dataset (include “GOOSE” in the name).

### IEC 61850 communication settings



Drag the GOOSE dataset to LN0.

### IEC 61850 communication settings

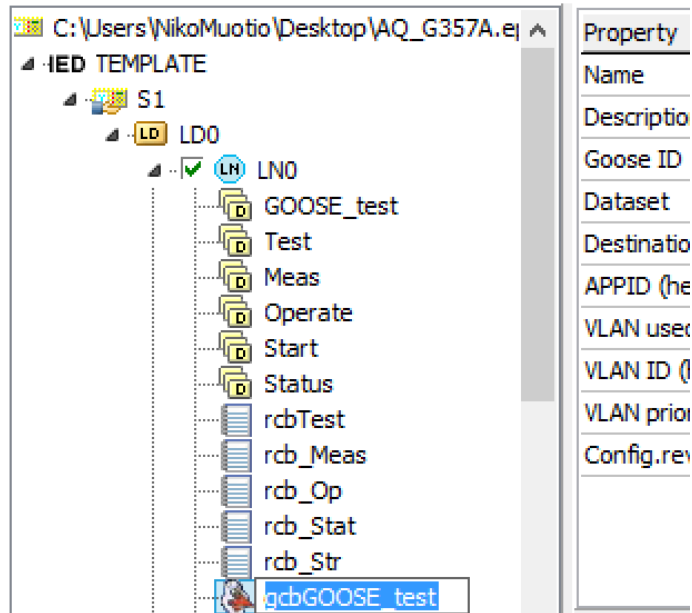


Accept the request.

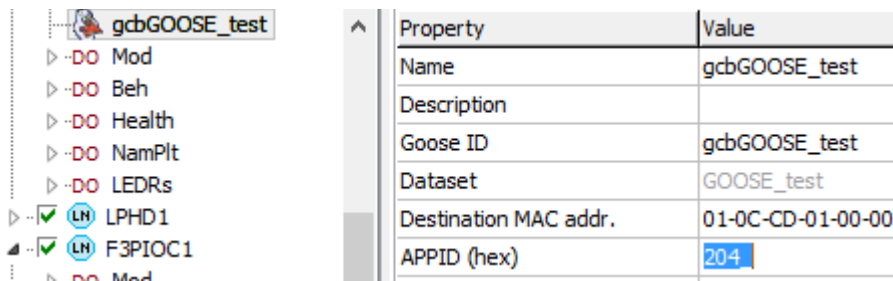


Give the GOOSE publisher a name.

### IEC 61850 communication settings

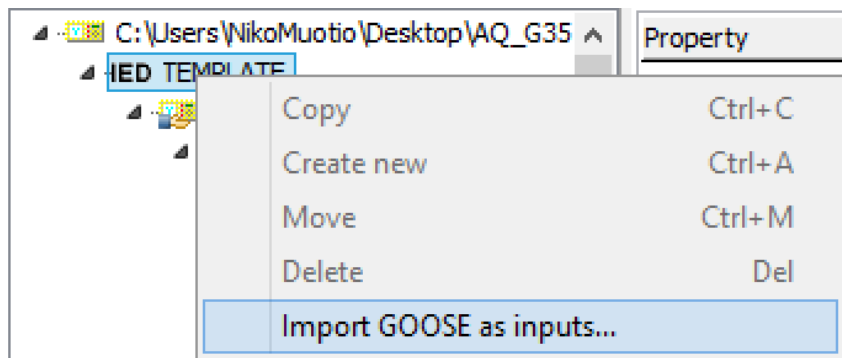


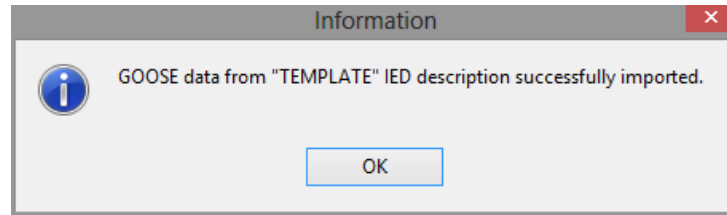
In the control APPID needs to be set as a unique number. Please note that the number will be hexadecimal.



### 3.3 GOOSE SUBSCRIBER

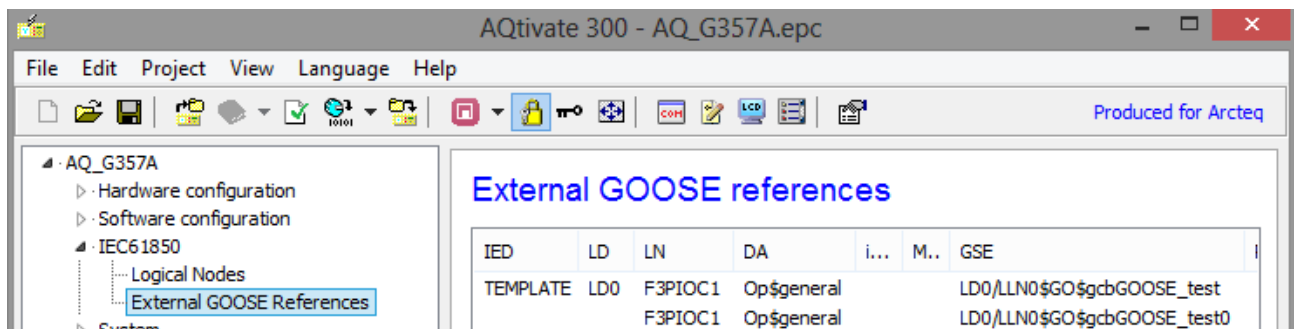
To configure GOOSE subscriber you have to import a .cid file from device with GOOSE publisher. This is done by right clicking on the IED level in the tree.



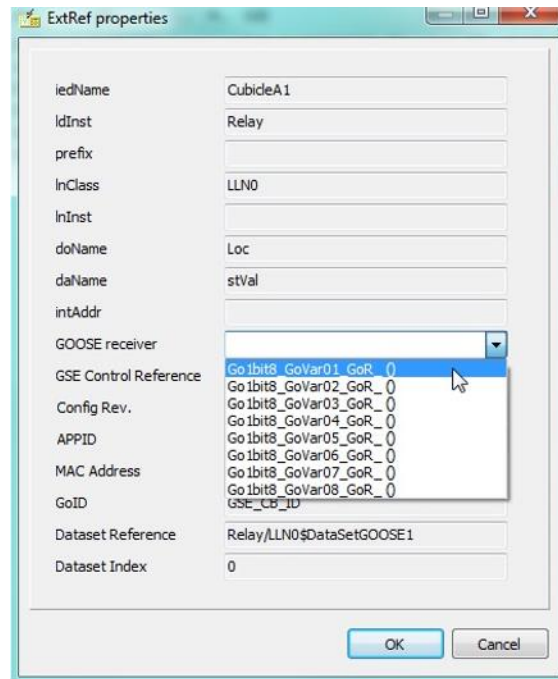


After this you can close the Communication Configurator and continue in the setting tool.

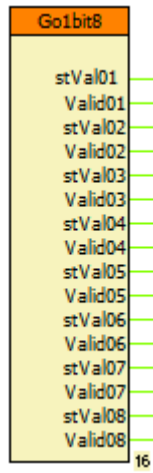
The subscribed data must be linked in the relay configuration. This is done by opening the IEC61850 and the External GOOSE References in the tree on the left side and double-clicking on the data you wish to link.



In the ExtRef properties you select to which of the 8 1-bit GOOSE inputs of the GOOSE input function block you like to link the data. Later the outputs from this function block can be used in the relay configuration.



GOOSE subscriber function block in the logic editor.



## 4 REFERENCE INFORMATION

**Manufacturer information:**

Arcteq Relays Ltd. Finland

**Visiting and postal address:**

Wolffintie 36 F 11

65200 Vaasa, Finland

**Contacts:**

Phone: +358 10 3221 370

Fax: +358 10 3221 389

url: [www.arcteq.fi](http://www.arcteq.fi)

email sales: [sales@arcteq.fi](mailto:sales@arcteq.fi)

email technical support: [support@arcteq.fi](mailto:support@arcteq.fi)