Platform MX6
Software option S106
CODESYS OPCuA Server

1   Identification

Identification	
Option ID	S106
Order number	S-05000308-0000
Short name	CODESYS OPCuA Server
Brief description	With this software option, it is possible to exchange variables and data via the OPCuA interface with other systems that have an OPCuA capable client
Revision ID document	V3.0

2   System requirements and restrictions

System requirements and restrictions	
Supported platforms and devices	Berghof PLC devices of the MX6 platform (e.g.: MCs, CCs, DCs). Additional information regarding availability and compatibility can be found in options section of the product catalog.
Firmware	MX6-PLC from Version 1.16.0, CODESYS from 3.5 SP10 Patch 1
Additional requirements	— IP network port network access
Restrictions	— No support for X.509 certificates

3 Product description

This software option activates the license for the in CODESYS integrated OPCuA server for the device.

OPCuA is a communication protocol to enable a direct communication between devices (M2M). It plays a key role in the sector of communication and networking for the Industrial Internet of Things. OPCuA compatible devices can directly communicate with each other through OPCuA. In contrast to simpler protocols, which support a binary exchange of data based on a simple memory map, OPCuA provides access on data through the symbolic level.

Especially to be emphasized is that the new OPCuA standard is platform-independent and is therefore available on devices with various operating systems. So OPCuA is the first choice for a standardized data exchange between devices with most diverse specifications. Beside the pure data exchange between OPCuA compatible devices, OPCuA often used for the connection of visualization or higher-level control units.

The configuration of the variables to be exported through OPCuA provides CODESYS through the system configuration. The to be exported data of the available symbols of the PLC program is compiled by mouse click and is enabled for access through OPCuA. It is possible to give every exported element the access right "read-only" or "read and write".

OPCuA clients are able to identify data points of a server and can read and write those according to the access rights.

For full documentation of the OPCuA Server configuration menus please check the CODESYS Online help under:
https://help.codesys.com/webapp/_cds_runtime_opc_ua_server;product=codesys;version=3.5.15.0

4 Technical data

| Technical data	
Supported profile	Micro Embedded Device Server

5 Quick Start Guide

5.1 Control configuration

To export variables from the PLC application through OPCuA, first create a symbol configuration for your application.
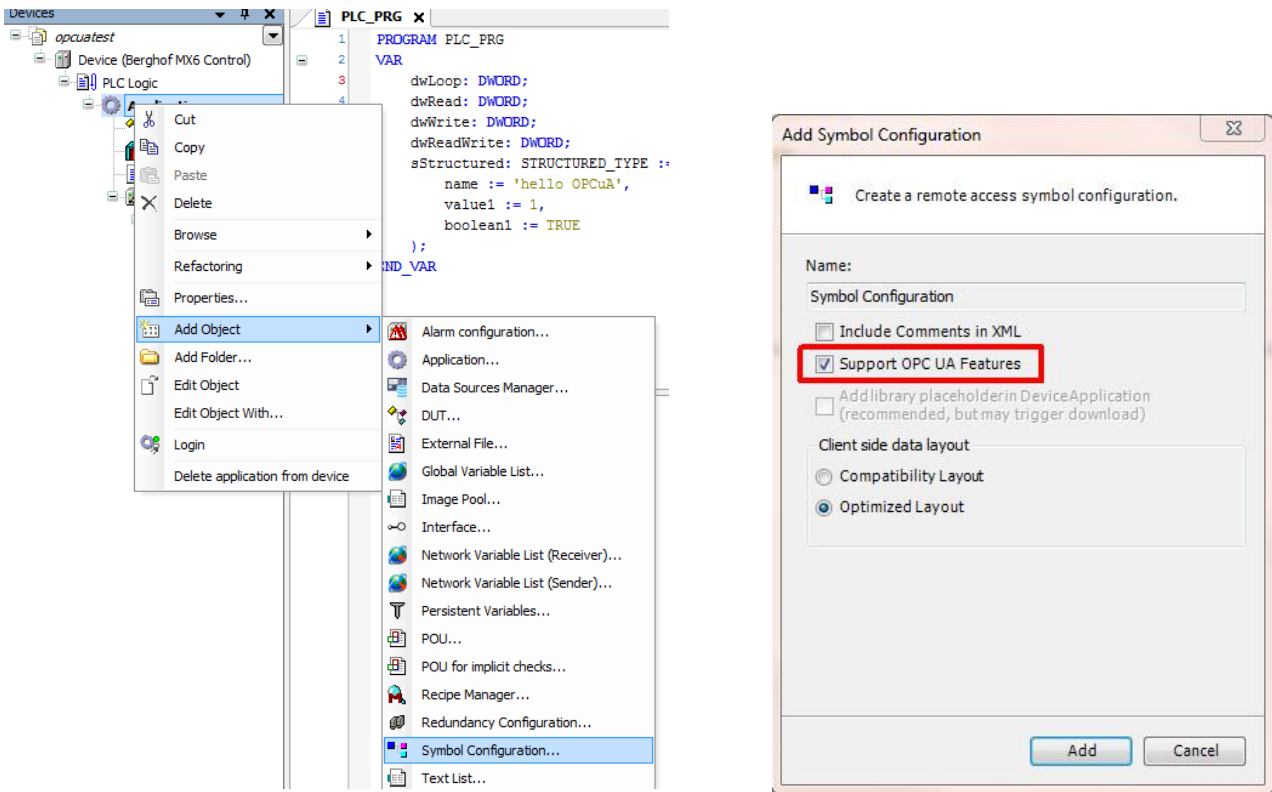
The information that OPCuA should be supported, is important during the symbol configuration.

In a further step the to be exported variables are chosen and the authorized access mode configurated.
A correct Build of the PLC application is required.
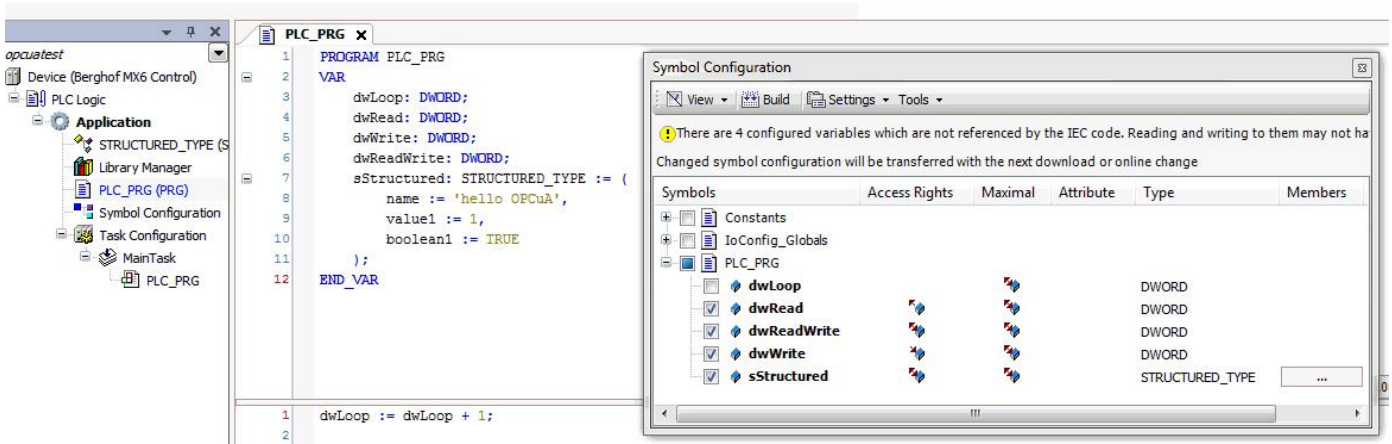
The application is downloaded on a control and is started. With this the variables for OPCuA clients are available.

5.2 Access through OPCuA Client

For access on the OPCuA server on the control the PC programm 'UaExpert' from Unified Automation is used as an example.
This tool is free to download from the producer`s website and is appropriate for first tests.
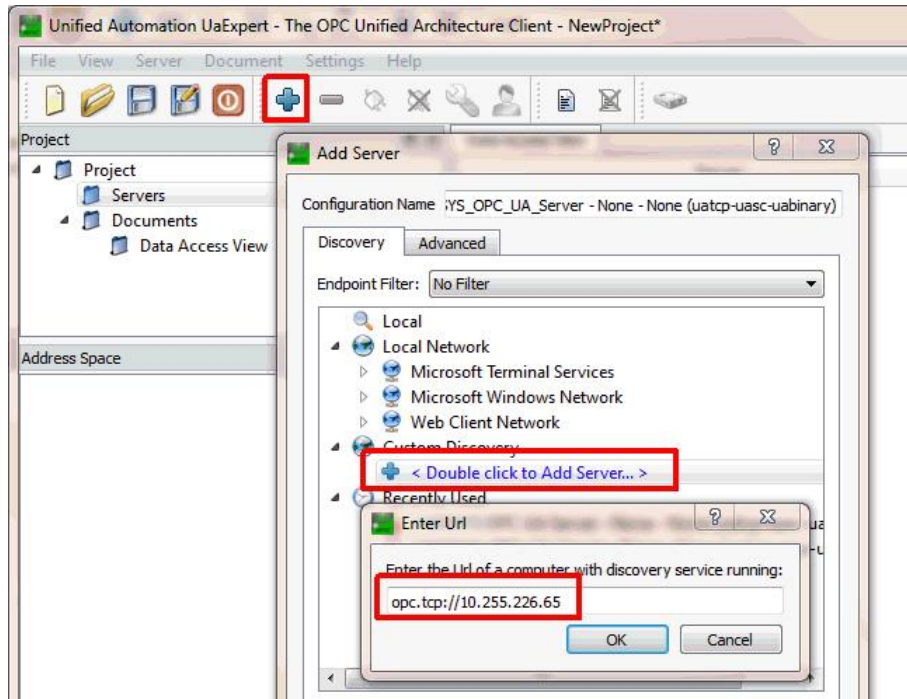
After starting the UaExpert programm the control has to be added. Through the plus symbol of the icon bar a OPCuA server can be adopted to the configuration. For this you have to register the IP adress of your control as URL and confirm with OK.
The OPCuA server is now added.

The server now appears in the main window under 'Servers'.
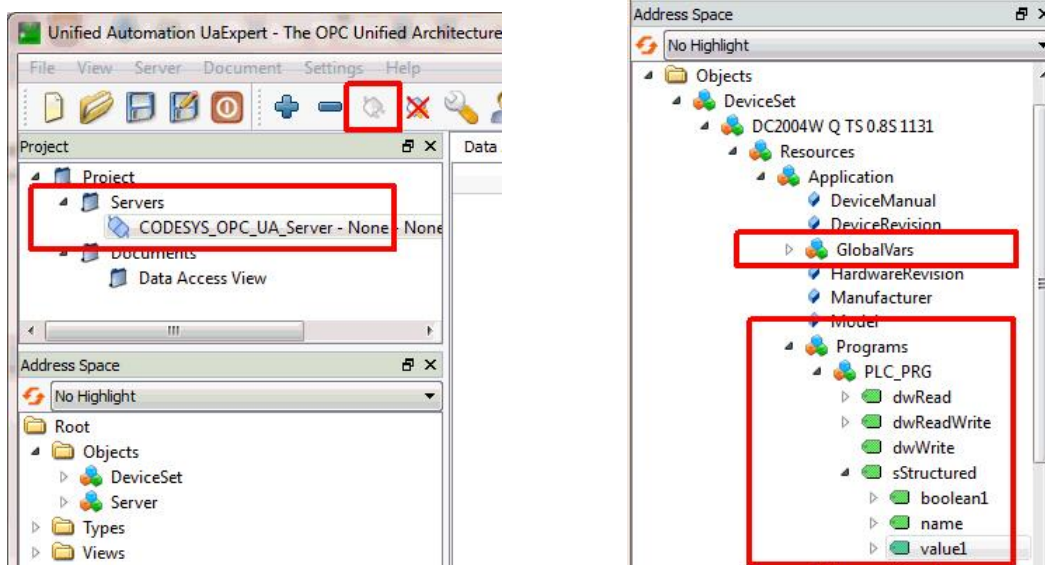
To establish a connection with the OPCuA server, the 'Connect-Icon' has to be chosen.
The exported information from the OPCuA server are available in the window 'Address Space'.

The exported variables can be dragged via drag&drop into the window 'Data Access View'. The data exchange with the control is now activated. Changes in value and status of value are apparent here. Through double click on the column 'Value' values for the particular exported variables can be written.

A cyclic data exchange between OPCuA client on the PC and the OPCuA server on the control is now provided.