

OPC UA

Wago + Beijer

Wago e!COCKPIT

WAGO

elC_WagoBeijer_OPCUA_Test_1.ecp - elCOCKPIT

FILE START VIEW PROGRAM DEBUG

Connect Simulate application Stop Program download Multiple download Boot application download Source code download Online change Edit offline Changes download Rebuild Generate code Build Clean Cross reference list CODESYS 3 PLCOpen XML Search Mark declaration Import Export Import/Export

Program structure

Project library (POUs)
Applications
Application (Controller)
GVL
Library Manager
PLC_PRG
Symbol Configuration
Task Configuration
PLC_Task (1)

PLC_PRG X

```
1 PROGRAM PLC_PRG
2 VAR
3   rSineAngleTest: REAL;
4   wLocalVar1: INT;
5 END_VAR
```

GVL X

```
1 {attribute 'qualified_only'}
2 VAR_GLOBAL
3   wGlobalVar1: WORD;
4   rGlobalVar2: REAL;
5 END_VAR
```

Symbol Configuration X

View Build Settings Tools

Changed symbol configuration will be transferred with the next download or online change

Symbols	Access Rights	Maximal	Attribute	Type	Members	Comment
Constants						
GVL						
rGlobalVar2				REAL		
wGlobalVar1				WORD		
IoConfig_Globals						
PLC_PRG						
rSineAngleTest				REAL		
wLocalVar1				INT		

100 %

100 %

Name

- elC_WagoBeijer_OPCUA_Test_1.ecp.~u
- elC_WagoBeijer_OPCUA_Test_1-AllUsers.opt
- elC_WagoBeijer_OPCUA_Test_1-WagoTorgeir-WagoTorgeir-PC.opt
- elC_WagoBeijer_OPCUA_Test_1.ecp
- elC_WagoBeijer_OPCUA_Test_1.Controller.Application.xml

Connect

Simulate application

Start

Stop

Reset

Program download

Multiple download

Boot application download

Source code download

Edit offline

Changes download

Online change

Rebuild

Generate code

Clean

Clean All

Cross reference list

CODESYS 3

PLCOpen XML

Mark declaration

Import

Export

Import/Export

Program structure

Project library (POUs)

Applications

Application (Controller)

GVL

Library Manager

PLC_PRG

Symbol Configuration

Task Configuration

PLC_Task (1)

PLC_PRG

1 PROGRAM PLC_PRG

2 VAR

3 rSineAngleTest: REAL;

4 wLocalVar1: INT;

5 END_VAR

100 %

GVL

1 {attribute 'qualified_only'}

2 VAR_GLOBAL

3 wGlobalVar1: WORD;

4 rGlobalVar2: REAL;

5 END_VAR

100 %

Symbol Configuration

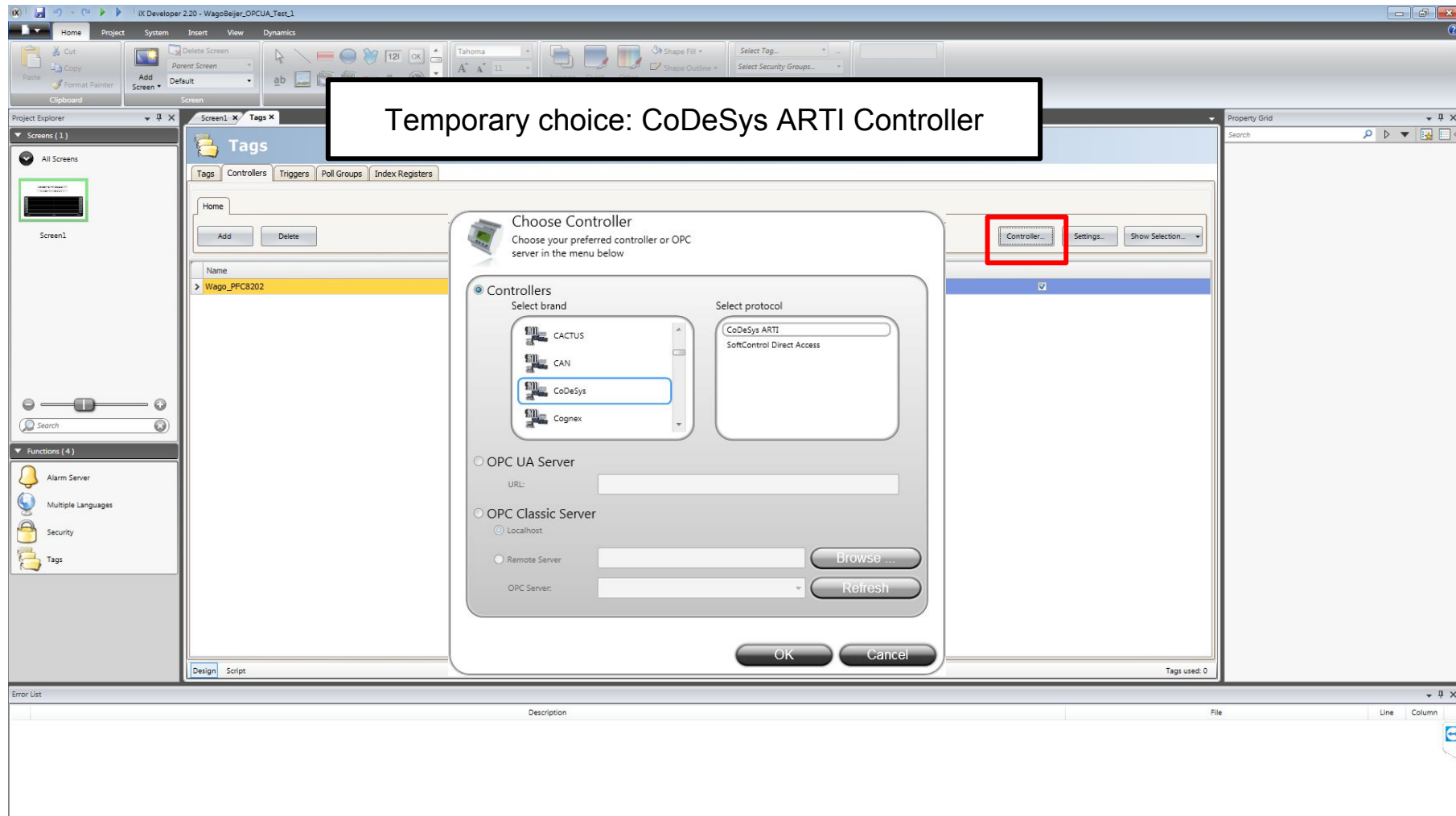
View Build Settings Tools

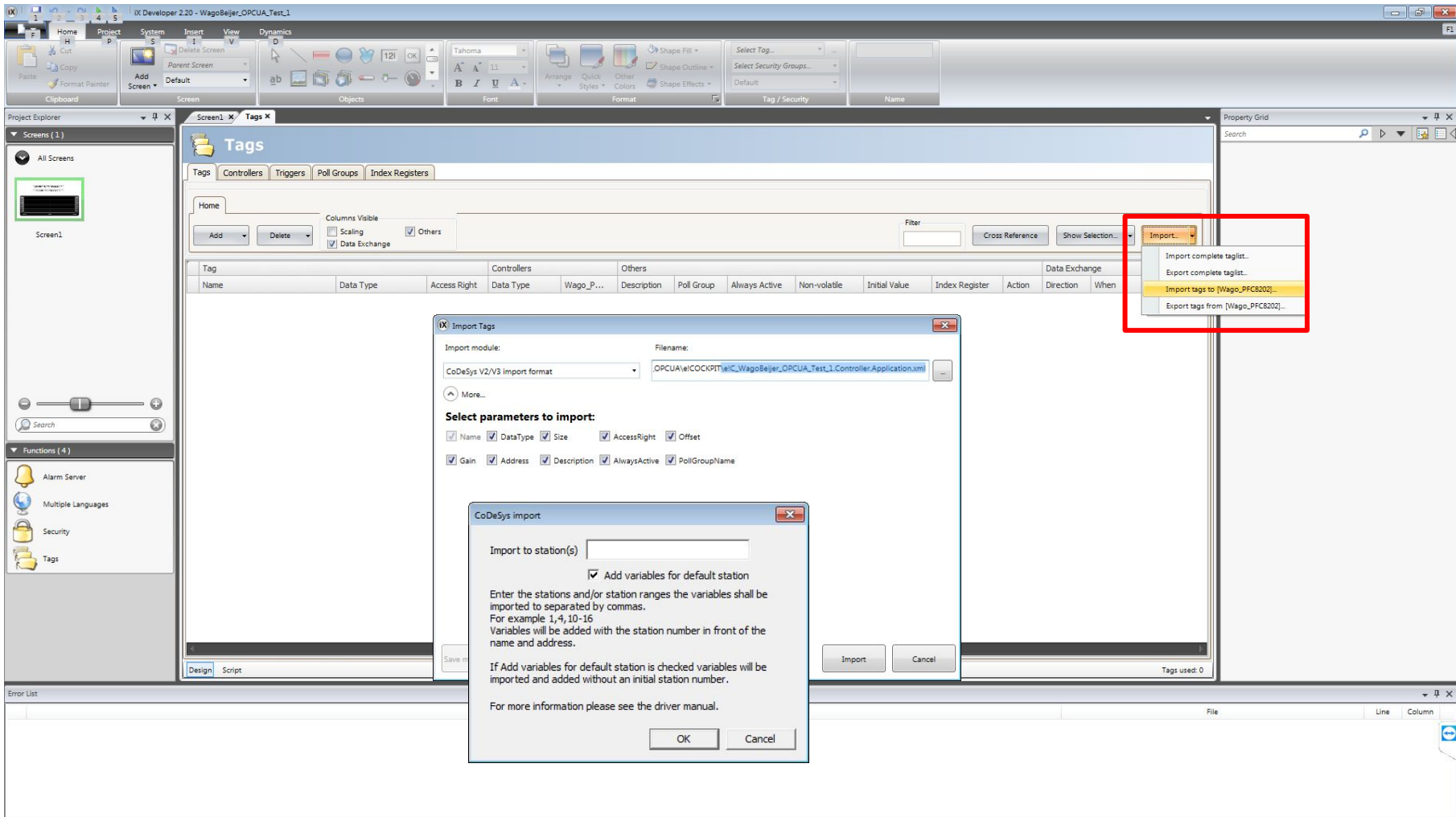
Changed symbol configuration will be transferred with the next download or online change

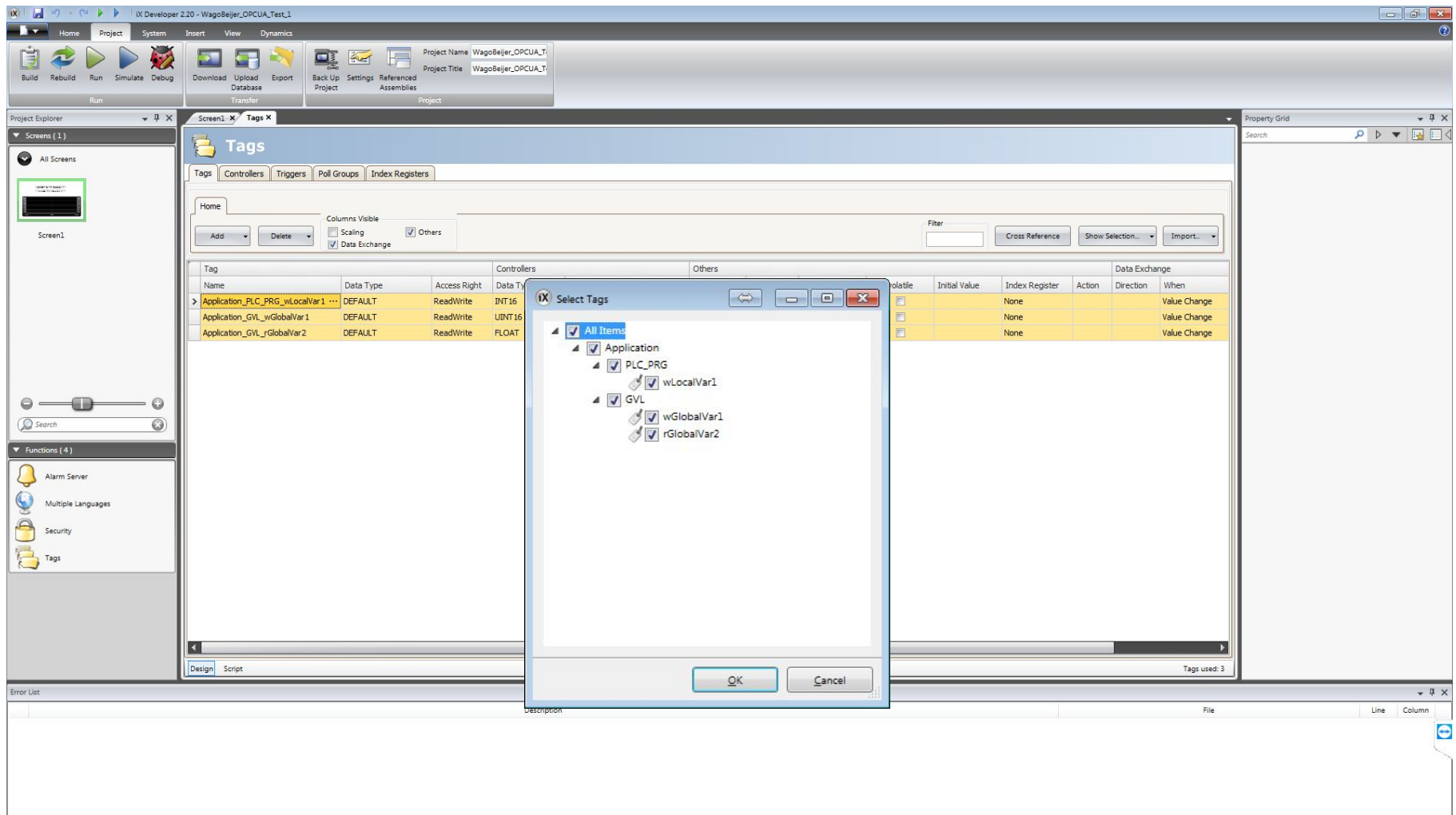
Symbols	Access Rights	Maximal	Attribute	Type	Members	Comment
Constants						
GVL						
rGlobalVar2				REAL		
wGlobalVar1				WORD		
toConfig_Globals						
PLC_PRG						
rSineAngleTest				REAL		
wLocalVar1				INT		

Beijer iX Developer

Temporary choice: CoDeSys ARTI Controller







Permanent choice: OPC UA Server

Choose Controller
Choose your preferred controller or OPC server in the menu below

☐ Controllers

Select brand

- CACTUS
- CAN
- CoDeSys
- Cognex

Select protocol

- CoDeSys ARTI
- SoftControl Direct Access

☒ OPC UA Server

URL:

☐ OPC Classic Server

☐ Localhost

☐ Remote Server

OPC Server:

Controller... Settings... Show Selection...

IX Properties

OPC UA Client

URL:

Authentication settings

☒ Anonymous login

☐ User name

Password:

Namespace settings

Prefix	URI
NS0	http://opcfoundation.org/UA/
NS1	urn:localhost:OPCFoundation:Server/TestTool
NS2	http://opcfoundation.org/UA/DI/
NS3	http://PLCopen.org/OPCUa/EC61131-3/
NS4	CODESYS3/3S/secVarAccess
NS5	
NS6	

Tag View settings

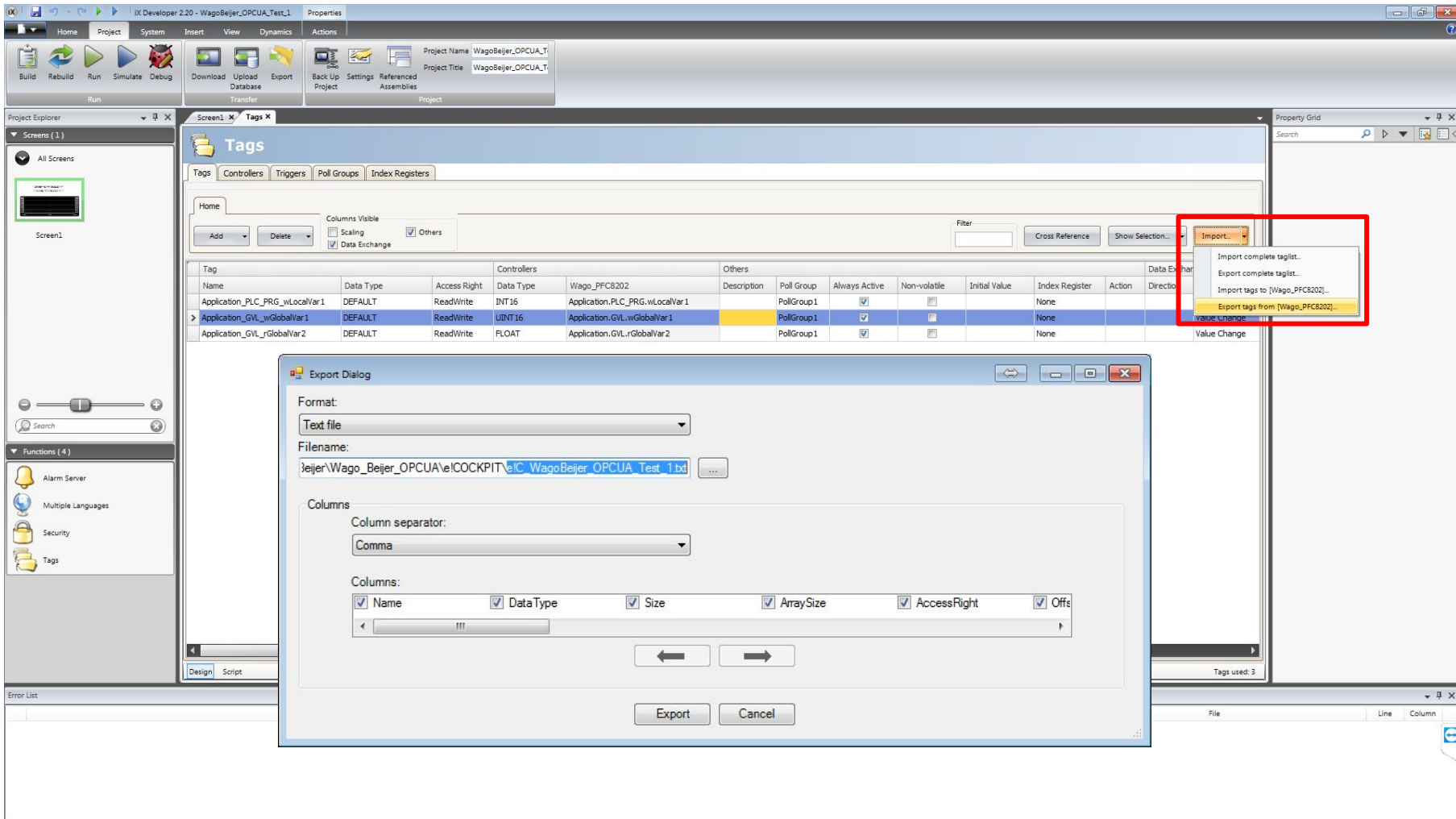
Namespace/Node ID type separator char:

Default namespace:

Subscription settings

Max subscriptions:

Max items per subscription:



Tags											
Tags Controllers Triggers Poll Groups Index Registers											
Home											
Add Delete Columns Visible Scaling Data Exchange Filter Cross Reference Show Selection...											
Tag	Name	Data Type	Access Right	Controllers	Others	Poll Group	Always Active	Non-volatile	Initial Value	Index Register	Action
Application_PLC_PRG_wLocalVar1	Application_PLC_PRG_wLocalVar1	DEFAULT	ReadWrite	INT16	Application.PLC_PRG.wLocalVar1	PollGroup1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None		
Application_GVL_wGlobalVar1	Application_GVL_wGlobalVar1	DEFAULT	ReadWrite	UINT16	Application.GVL_wGlobalVar1	PollGroup1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None		
Application_GVL_rGlobalVar2	Application_GVL_rGlobalVar2	DEFAULT	ReadWrite	FLOAT	Application.GVL_rGlobalVar2	PollGroup1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None		

- Import complete taglist...
- Export complete taglist...
- Import tags to [Wago_PFC8202]...
- Export tags from [Wago_PFC8202]...

Format: Text file

Filename: WagoBeijer OPCUA Test 1.txt

Column separator: Comma

Columns: ☒ Name ☒ Data Type ☒ Size ☒ ArraySize ☒ AccessRight ☒ Offset

Export Cancel

Spreadsheet Tool

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Name	DataType	Size	ArraySize	AccessRight	Offset	Gain	GlobalDataType	PollGroupName	IndexRegisterNumber	LogToAuditTrail	AlwaysActive	NonVolatile	InitialValue	Address_1	AccessRight_1	Desc
1	Application_PLG_PRG_wLocalVar1	INT16	1	1	ReadWrite	0	1	DEFAULT	PollGroup1		0	False	False		NS4:wLocalVar1	None	
2	Application_GVL_wGlobalVar1	UINT16	1	1	ReadWrite	0	1	DEFAULT	PollGroup1		0	False	False		NS4:wGlobalVar1	None	
3	Application_GVL_rGlobalVar2	FLOAT	1	1	ReadWrite	0	1	DEFAULT	PollGroup1		0	False	False		NS4:rGlobalVar2	None	

Beijer OPC UA Client requires flat tag structure
=> must remove original tag prefix/hierarchy !

Find & Replace

Search for: Application.PLC_PRG.

Replace with:

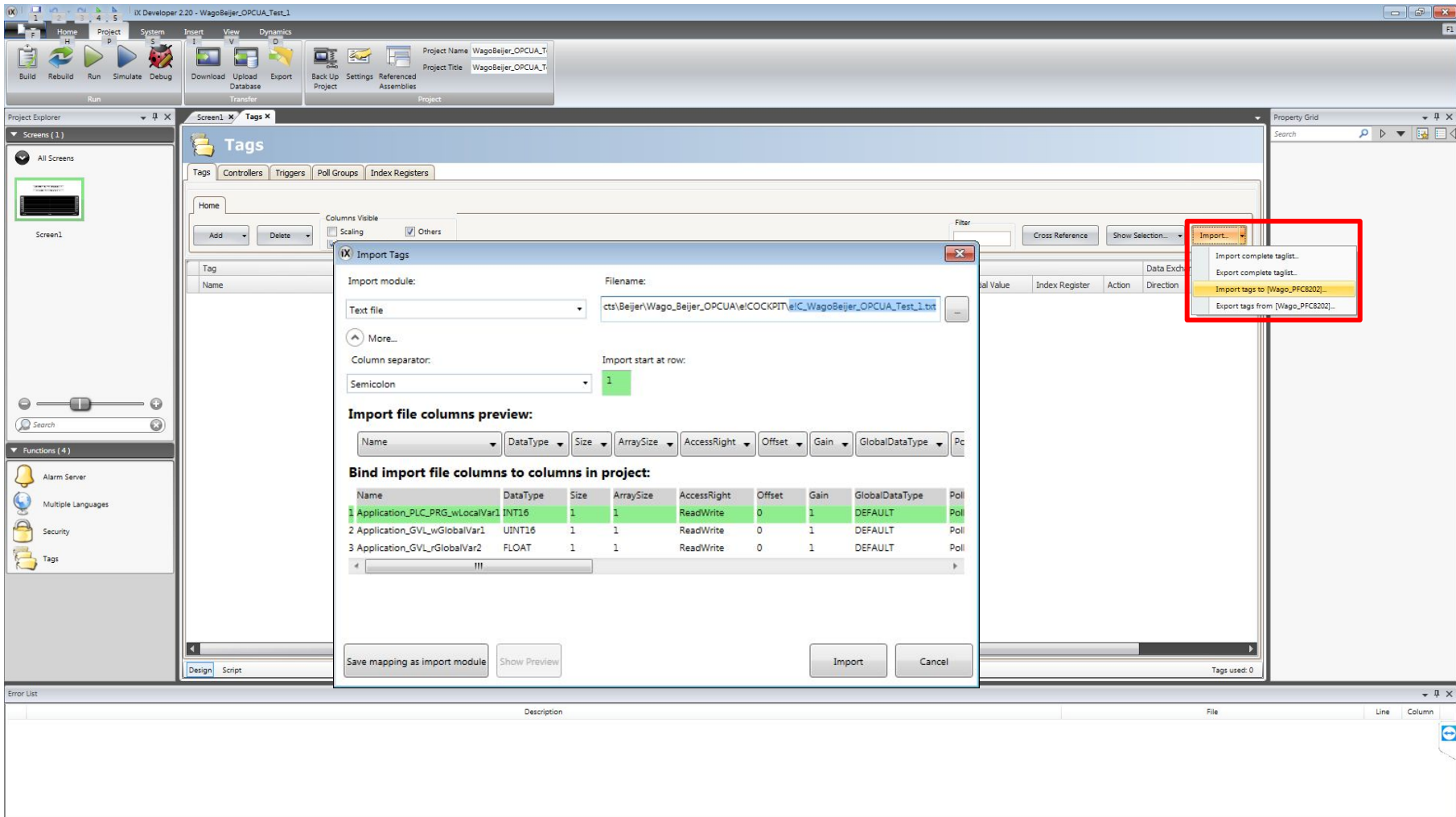
Find, Find All, Replace, Replace All, Match case, Entire cells, More Options, Help, Close

Find & Replace

Search for: Application.GVL.

Replace with:

Find, Find All, Replace, Replace All, Match case, Entire cells, More Options, Help, Close



IX Developer 2.20 - WagoBeijer_OPCUA_Test_1

Project Name: WagoBeijer_OPCUA_T
Project Title: WagoBeijer_OPCUA_T

Build Rebuild Run Simulate Debug Download Upload Export Database Transfer Back Up Settings Referenced Assemblies Project

Project Explorer: Screens (1) All Screens Screen1

Functions (4) Alarm Server Multiple Languages Security Tags

Tags

Home Add Delete Columns Visible: ☐ Scaling ☒ Data Exchange ☒ Others Filter: Cross Reference Show Selection... Import...

Tag	Data Type	Access Right	Controllers	Others	Data Exchange
Name			Data Type	Description	When
Application_PLG_PRG_wLocalVar1	DEFAULT	ReadWrite	INT16	NS4:wLocalVar1	Value Change
Application_GVL_wGlobalVar1	DEFAULT	ReadWrite	UINT16	wGlobalVar1	Value Change
Application_GVL_rGlobalVar2	DEFAULT	ReadWrite	FLOAT	rGlobalVar2	Value Change

Select Tags

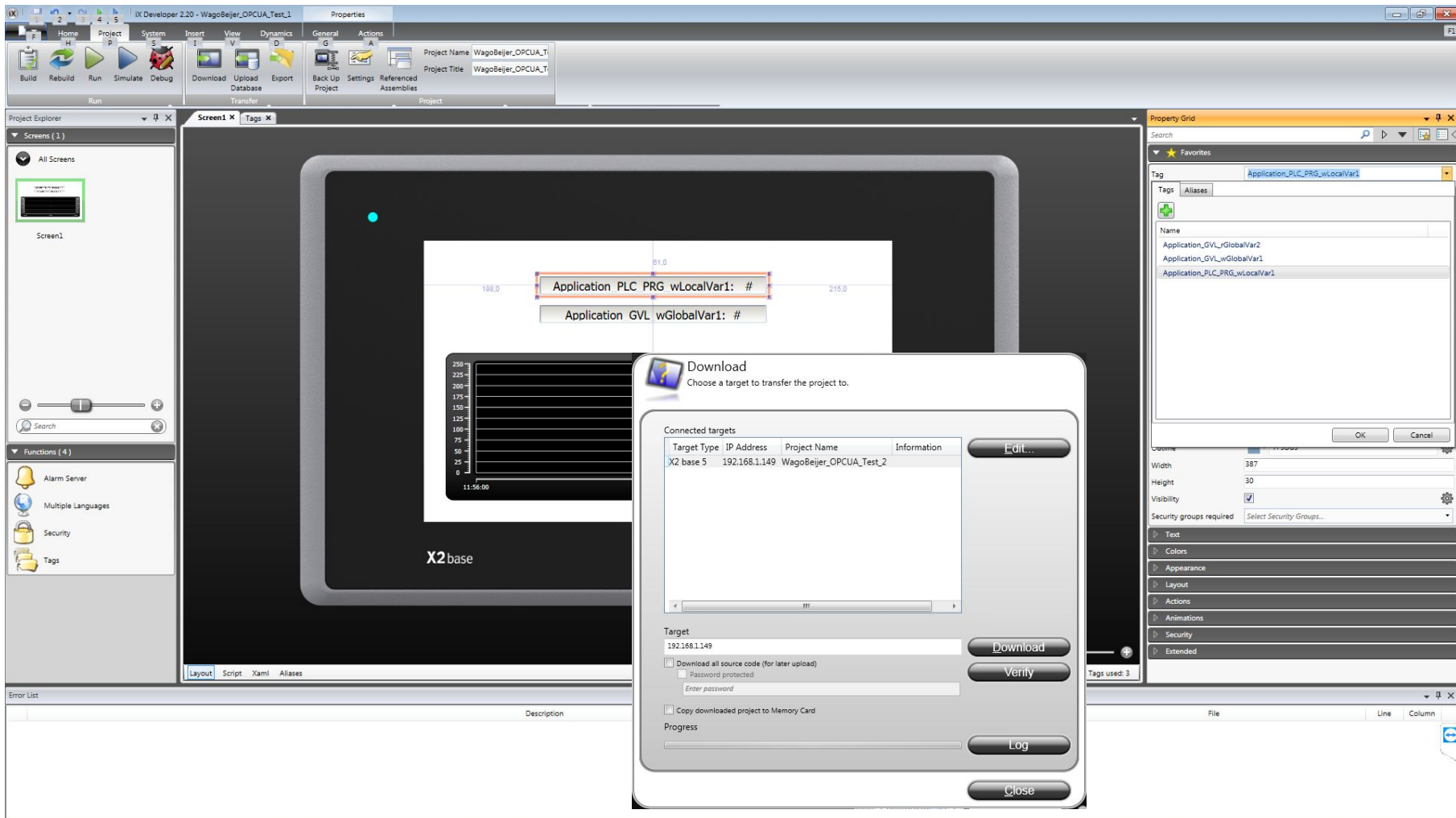
- ☒ All Items
 - ☒ Application_PLG_PRG_wLocalVar1
 - ☒ Application_GVL_wGlobalVar1
 - ☒ Application_GVL_rGlobalVar2

OK Cancel

Tags used: 3

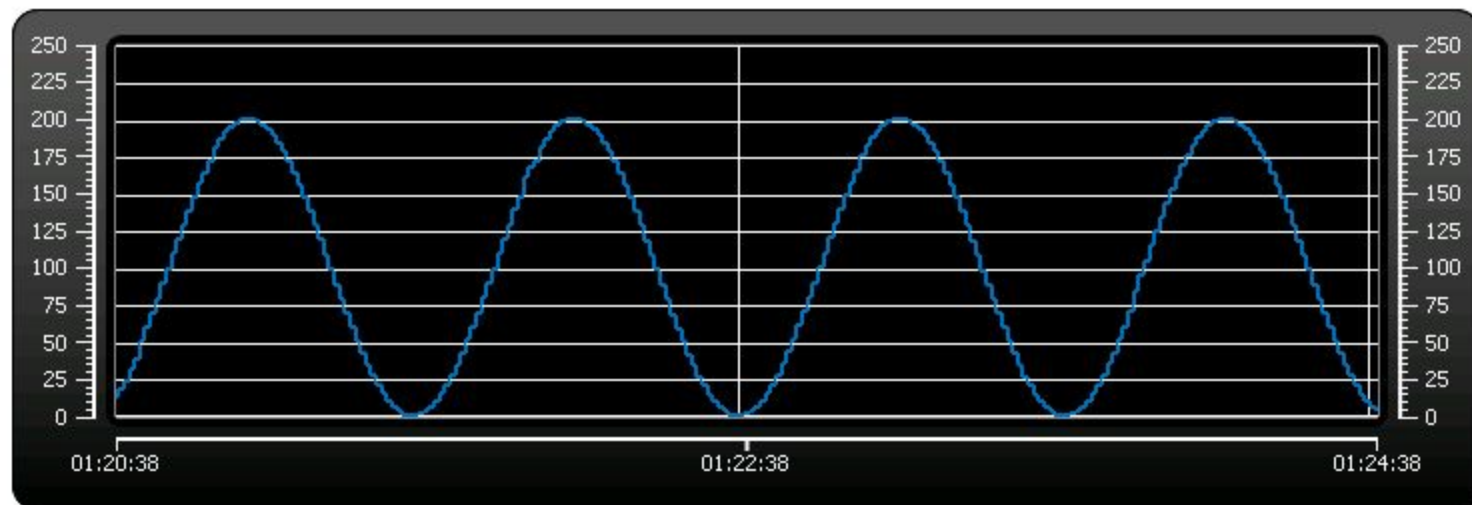
Error List

File Line Column



Application_PLC_PRG_wLocalVar1: 134

Application_GVL_wGlobalVar1: 13401



Wireshark Packet Sniffer Tool

Capturing from Local Area Connection

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

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No.	Time	Source	Destination	Protocol	Length	Info
13	0.000000	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
14	0.024084	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest
34	0.475963	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
35	0.019271	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest
49	0.480205	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
51	0.026654	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest
66	0.482650	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
67	0.012372	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest

▶ Frame 35: 125 bytes on wire (1000 bits), 125 bytes captured (1000 bits) on interface 0

▶ Ethernet II, Src: BeijerFl_09:6a:2c (00:50:6c:09:6a:2c), Dst: WagoKont_40:68:1c (00:30:de:40:68:1c)

▶ Internet Protocol Version 4, Src: 192.168.1.149, Dst: 192.168.1.117

▶ Transmission Control Protocol, Src Port: 49275, Dst Port: 4840, Seq: 72, Ack: 369, Len: 71

▲ OpcUa Binary Protocol

Message Type: MSG

Chunk Type: F

Message Size: 71

SecureChannelId: 33571

Security Token Id: 15

Security Sequence Number: 89946

Security RequestId: 89896

▲ OpcUa Service : Encodeable Object

▶ TypeId : ExpandedNodeId

▲ PublishRequest

▲ RequestHeader: RequestHeader

▶ AuthenticationToken: NodeId

Timestamp: May 20, 2017 11:51:10.509000000 W. Europe Daylight Time

RequestHandle: 89881

▶ Return Diagnostics: 0x00000000

AuditEntryId: [OpcUa Null String]

TimeoutHint: 60000

▶ AdditionalHeader: ExtensionObject

▲ SubscriptionAcknowledgements: Array of SubscriptionAcknowledgement

ArraySize: 1

▶ [0]: SubscriptionAcknowledgement

0010 00 f7 72 51 40 00 00 06 03 dd c0 a8 01 95 c0 a8 .orQ... ..

0020 01 75 c0 7b 12 e8 a6 b4 43 b5 ba 87 56 6a 50 18 .u.(... C..VjP.

0030 83 2c 2d 8d 00 00 4d 53 47 46 47 00 00 00 23 83 ,...MS GFG...#.

0040 00 00 0f 00 00 00 5a 5f 01 00 28 5f 01 00 01 00Z..(....

0050 3a 03 01 01 1d 00 d0 25 2e 9c 4e d1 d2 01 19 5f :...% .N....

0060 01 00 00 00 00 ff ff ff ff 60 ea 00 00 00 00\$..

0070 00 01 00 00 02 00 00 00 ef 24 01 00\$..

Text item (text), 43 bytes

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

opcu

No.	Time	Source	Destination	Protocol	Length	Info
13	0.000000	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
14	0.024084	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest
34	0.475963	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
35	0.019271	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest
49	0.480205	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
51	0.026654	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest
66	0.482650	192.168.1.117	192.168.1.149	OpcUa	238	UA Secure Conversation Message: PublishResponse
67	0.012372	192.168.1.149	192.168.1.117	OpcUa	125	UA Secure Conversation Message: PublishRequest

▶ Frame 49: 238 bytes on wire (1904 bits), 238 bytes captured (1904 bits) on interface 0

▶ Ethernet II, Src: WagoKont_40:68:1c (00:30:de:40:68:1c), Dst: BeijerFl_09:6a:2c (00:50:6c:09:6a:2c)

▶ Internet Protocol Version 4, Src: 192.168.1.117, Dst: 192.168.1.149

▶ Transmission Control Protocol, Src Port: 4840, Dst Port: 49275, Seq: 369, Ack: 143, Len: 184

▲ OpcUa Binary Protocol

Message Type: MSG

Chunk Type: F

Message Size: 184

SecureChannelId: 33571

Security Token Id: 15

Security Sequence Number: 89945

Security RequestId: 89895

▲ OpcUa Service : Encodeable Object

▶ TypeId : ExpandedNodeId

▲ PublishResponse

▲ ResponseHeader: ResponseHeader

Timestamp: May 20, 2017 11:57:37.130000000 W. Europe Daylight Time

RequestHandle: 89880

ServiceResult: 0x00000000 [Good]

▶ ServiceDiagnostics: DiagnosticInfo

▶ StringTable: Array of String

▶ AdditionalHeader: ExtensionObject

SubscriptionId: 2

▶ AvailableSequenceNumbers: Array of UInt32

MoreNotifications: False

▶ NotificationMessage: NotificationMessage

▶ Results: Array of StatusCode

▶ DiagnosticInfos: Array of DiagnosticInfo

0050 3d 03 a0 d4 9f 82 4f d1 d2 01 18 5f 01 00 00 00 =...O.

0060 00 00 00 00 00 00 00 00 00 02 00 00 00 01 00

0070 00 00 f0 24 01 00 00 f0 24 01 00 a0 d4 9f 82 4f \$.O

0080 d1 d2 01 01 00 00 00 01 00 2b 03 01 52 00 00 +.R....

0090 03 00 00 00 02 00 00 00 0d 0a 32 b1 3a 43 a0 d42.C....

00a0 9f 82 4f d1 d2 01 a0 d4 9f 82 4f d1 d2 01 03 00O....O....

00b0 00 00 0d 05 7f 91 a0 d4 9f 82 4f d1 d2 01 a0 d4O....

Text item (text), 156 bytes