Using: QuickOpcCSharpExamples: EasyOPC-UA Demo Application

I run the application in release mode and set the Server Uri and Node Id from our MLC. After these actions, I press to read the Node Id. Look at the picture 1 below.

| 🖳 EasyOPC-UA Demo Application  |                                  |                           |                   |                     |             |  |  |
|--|----------------------------------|---------------------------|-------------------|---------------------|-------------|--|--|
| Hint: Press the "Subscribe" button to see dynamically changing OPC data. |                                  |                           |                   |                     |             |  |  |
| Server Uri:  | r Uri: opc.tcp://172.17.1.1:4840 |                           | < Browse servers  |                     | About       |  |  |
| Node Id:   | ainController.MAINHMI.arMad      | chHmilnterface[1].diJobID | < Browse data     |                     | Close       |  |  |
|  |                                  | Read                      | Value to write:   |                     | Write value |  |  |
|  |                                  | Monitored item:           | Value:            | 8                   |             |  |  |
| Sampling interval (ms): 200 🔪 Subscribe                                  |                                  | Status:                   | Good              |                     |             |  |  |
|  |                                  | Change subscription       | Source timestamp: | 05/11/2015 12:33:15 |             |  |  |
|  |                                  | Unsubscribe               | Server timestamp: | 05/11/2015 12:33:15 |             |  |  |
| Exception:   |                                  |                           |                   |                     | 5           |  |  |
|  |                                  |                           |                   |                     | ^           |  |  |
|  |                                  |                           |                   |                     |             |  |  |
|  |                                  |                           |                   |                     | Ŧ           |  |  |

Picture 1

The next action that been performed was subscribe to this node. Look at the picture 2 below.

| 🖶 EasyOPC  | -UA Demo /  | Application |                     |                   |                     |             |  |
|--|---|-------------|---------------------|-------------------|---------------------|-------------|--|
| Hint: Press the "Subscribe" button to see dynamically changing OPC data. |   |             |                     |                   |                     |             |  |
| Server Uri:  | opc.tcp://172.17.1.1:4840                           |             | < Browse servers    |                   | About               |             |  |
| Node Id:   | ainController.MAINHMI.arMachHmiInterface[1].diJobID |             |                     | < Browse data     |                     | Close       |  |
|  |   |             | Read                | Value to write:   |                     | Write value |  |
|  |   |             | Monitored item:     | Value:            | 8                   |             |  |
| Sampling in  | nterval (ms):                                       | 200 🌩       | Subscribe           | Status:           | Good                |             |  |
|  |   |             | Change subscription | Source timestamp: | 25/11/2015 12:34:19 |             |  |
|  |   |             | Unsubscribe         | Server timestamp: | 05/11/2015 12:34:19 |             |  |
| Exception:   |   |             |                     |                   |                     |             |  |
|  |   |             |                     |                   |                     | *           |  |
|  |   |             |                     |                   |                     |             |  |
|  |   |             |                     |                   |                     | -           |  |

Picture 2

The subscription is correct performed. Then I write the value 10 to the node Id. Look at the picture 3 below. The subscription gets the correct new value; I see also the correct value in the MLC-PLC tag.

| 🖳 EasyOPC  | EasyOPC-UA Demo Application |                   |                     |                     |  |  |  |
|--|-----------------------------|-------------------|---------------------|---------------------|--|--|--|
| Hint: Press the "Subscribe" button to see dynamically changing OPC data. |                             |                   |                     |                     |  |  |  |
| Server <u>U</u> ri:<br>Node Id:  | opc.tcp://172.17.1.1:4840   | < Browse servers  |                     | About               |  |  |  |
| 1000 [0.   | Read                        | Value to write:   | 10                  | <u>W</u> rite value |  |  |  |
| Sampling in  | Monitored item:             | Value:            | 10<br>Cond          |                     |  |  |  |
| Camping in   | Change subscription         | Source timestamp: | 05/11/2015 12:49:24 |                     |  |  |  |
|  | <u>U</u> nsubscribe         | Server timestamp: | 05/11/2015 12:49:24 |                     |  |  |  |
| Exception:   |                             |                   |                     |                     |  |  |  |
|  |                             |                   |                     | *                   |  |  |  |
|  |                             |                   |                     | ~                   |  |  |  |

Picture 3

## So far so good!

I simulation the hang-up of the communication between the application and MLC-PLC. In the next unplug-disconnection of the hardware cable from the my MLC network cable and then I click the Write value button right after. I am now unable to move the form or press any buttons. The application is hung up. After quite a while the application finally throws an error and I can once again move the form and press buttons. Look at the picture 4 below.

| EasyOPC-UA Demo Application  |  |                       |                     |                   |                |                     |
|--|--|-----------------------|---------------------|-------------------|----------------|---------------------|
| Hint: Press the "Subscribe" button to see dynamically changing OPC data.   |  |                       |                     |                   |                |                     |
| Server Uri: opc.tcp://1  |  | :cp://172.17.1.1:4840 |                     | < Browse servers  | Browse servers |                     |
| Ndate <u>I</u> d:  | ain Controller. MAINHMI. ar MachHmilnterface [1]. diJob ID |                       |                     | < Browse data     |                | Close               |
|  |  |                       | <u>R</u> ead        | Value to write:   | 10             | <u>W</u> rite value |
|  |  |                       | Monitored item:     | Value:            |                |                     |
| Sampling in  | Sampling interval (ms): 200 🛓 Subscribe                    |                       | Status:             |                   |                |                     |
|  |  |                       | Change subscription | Source timestamp: |                |                     |
|  |  |                       | <u>U</u> nsubscribe | Server timestamp: |                | ]                   |
| Exception:   |  |                       |                     |                   |                |                     |
| OPC-UA service result - An error specific to OPC-UA service occurred.   SERVICE RESULT   StatusCode: {BadSecureChannelClosed} = 0x80860000 (2156265472)   Description: BadSecureChannelClosed   AdditionalInfo: >>> BadSecureChannelClosed   at Opc.Ua.Bindings.TcpAsyncOperation`1.End(Int32 timeout) |  |                       |                     |                   |                | •                   |

Picture 4

If I now reconnect my MLC's network cable and do, a Write value action the application gets in a hungup again. However, this time does not recover and never throws another error message.

The same hang-up we get also in our HMI application when the communication between the MLC-PLC is broken or disconnected.

After release run, we start in Microsoft Visual 2013 in debug mode with the assembly DGpS.Opc and dotNET Framework4.5 to find this hang-up. We use OPC Labs assembly the QuickOPC 5.3 OpcLabs.EasyOpc.UA.EasyUAClient with the next interface function "IEasyUAClient":

- C:\Program Files (x86)\OPC Labs\QuickOPC 5.3\Assemblies\OpcLabs.EasyOpcUA.dll Assembly OpcLabs.EasyOpcUA.dll, v5.34.274.1
- public static void WriteValue(this IEasyUAClient easyUAClient, UAWriteValueArguments writeValueArguments);

The function "WriteValue" is in a hang-up call. After reconnections the cable in release or debug mode no change in the function "WriteValue" change itself. It stays in the hang-up call. The only way to solve this hang-up is to break/stop and then restart the application or power down/up of the PC (in release mode find the hang-up by logging).