

Communications

Mini-Lab

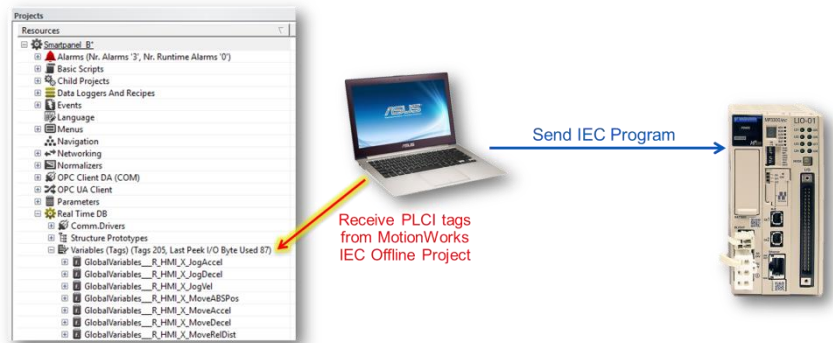
Requirements

- MP3300iec+Sigma-7 Demo with smartPanel HMI
- Files
 - Archive_SmartPanelBasic.zip
 - SmartPanelBasic.zwt (optional)

Lab Overview

This lab document will guide the participant through the following steps:

- I. Install the project archive to the MPiec controller (5 min)
- II. Set the servo drive parameters to default (5 min)
- III. Observe HMI Variables (5 min)
- IV. Prepare new project in Movicon (5 min)
- V. Import Variables from MotionWorks IEC Project File (10 min)



Lab Goal

- MPiec controller program is operational
- Movicon project contains MPiec variables

I. Install the project archive to the MPiec controller (5 min)

A. Connect to the WebUI

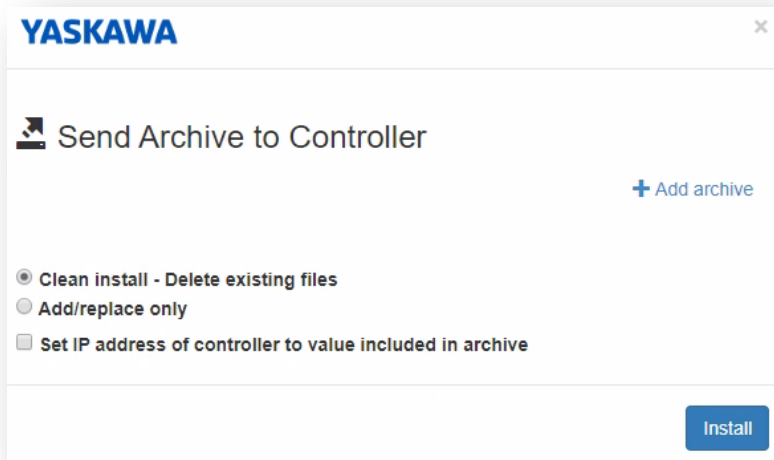
1. Open Chrome browser
2. Enter IP address of MPiec controller in the address bar (192.168.15.###)
 - i. IP address on front panel 7-segment LED display

B. Login

1. User → Login →
2. Username: Admin (case sensitive)
3. Password: MP3300 (case sensitive)

C. Setup → Archive → Send → Add Archive

D. Navigate to file **Archive_** (training files directory)



E. Clean Install

F. Send → Install

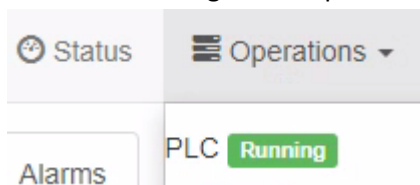
G. Reboot → Reboot (wait 30 seconds)

H. Clear the alarm **THE PLC COULD NOT PERFORM A WARM START. A COLD START IS REQUIRED**



I. Operations → Start → Cold → Start

J. Confirm PLC running under Operations menu

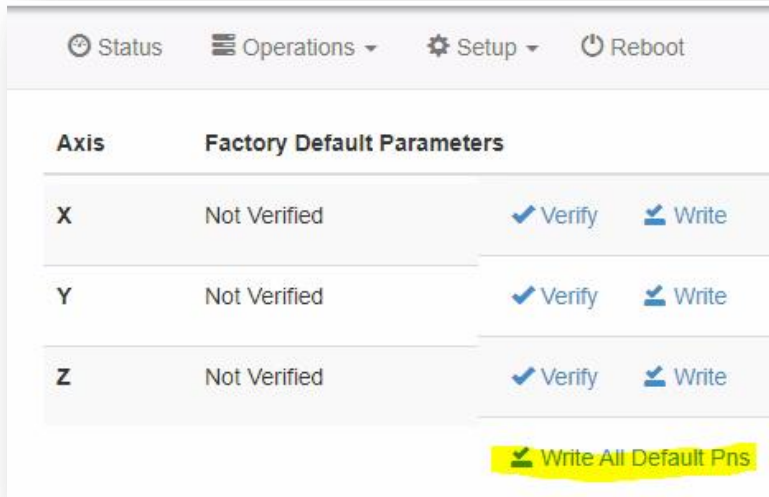


II. Set the servo drive parameters to default (5 min)

A. Setup → Drive Parameters → Write All Default Pns

B. Write

You will restore the drive parameters with the Setup screen of the HMI



C. Reboot → Reboot (Wait 30 seconds)

D. Expect alarm A.F10 Power Line Open Phase. This is OK for now.

III. Observe the HMI variables (5 min)

A. Open **SmartPanelBasic** in MotionWorks IEC

B. Open Global_Variables

All the variables that will be used in the HMI have been marked OPC (for PLCI protocol).

	Name	Type	PDD	OPC	Description
System Variables					
HMI					
	HMI_ActiveScreen	INT	✓	✓	_SysVar_Ac
	HMI_ClearAlarmsRequest	BOOL	✓	✓	Request all a
	HMI_ControllerAlarm	BOOL	✓	✓	Status of MP
	HMI_ControllerAlarmMsgArray	BYTE_...	✗	✗	87 bytes con
	HMI_ControlMode	INT	✓	✓	MPiec "mode
	HMI_CycleComplete	INT	✓	✓	

C. PDD (Process Data Directory) causes the variables to display on the Web UI → Status page for convenience.



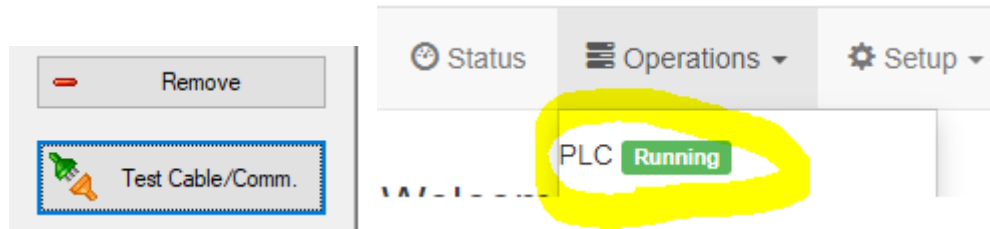
IV. Prepare new project in Movicon (5 min)

- A. Open **MOVICON** (Yaskawa HMI Editor)
- B. Close any open projects
- C. File → New → WinCE Platform
- D. **PROJECTNAME**: Name = **TRAININGPROJECT01** (next, next)
- E. **USERS**: <leave all unchecked at default>
- F. **ADD COMM. I/O DRIVER**: Yaskawa MPiec PLCI (not PLCI CE6 for older hardware)
- G. **SCREENS**: Width = 800, Height = 480 (7" smart panel)
 1. Default Color = custom 0, 86, 185 (R,G,B) for **Yaskawa Blue**
- H. **DATA LOGGER AND RECIPE SETTINGS (ODBC)**: <default>
- I. **ALARM SETTINGS**: <default> and **FINISH**
- J. **YASKAWAMPICPLCI**: Stations → Add
 1. Station Properties: **SERVER ADDRESS** = <IP address of MPiec>, **STATION NAME** = MP3300iec (etc)

Property	Name
Yaskawa MPiec PLCI Station G...	
Server Address	192.168.15.76
Server Port	41100
Timeout	4000
Subscribe Variables	True
General	
Station Name	MP3300iec
Error Threshold	0
State/Command Variable	

K. Test Cable/Comm.

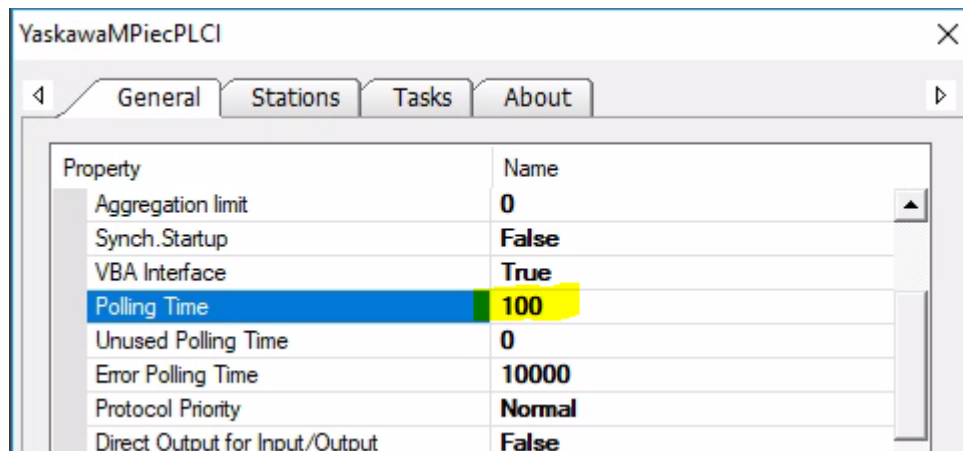
1. The MPiEc must be running or Test Cable/Comm. will fail



2. Verify the status PLC Running (WebUI →login(Admin/MP3300)→Operations

L. YaskawaMPiEcPLCI: General

1. Set Polling Time = 100ms. In this project most of the HMI variables are used in a task with Interval = 48 [ms].



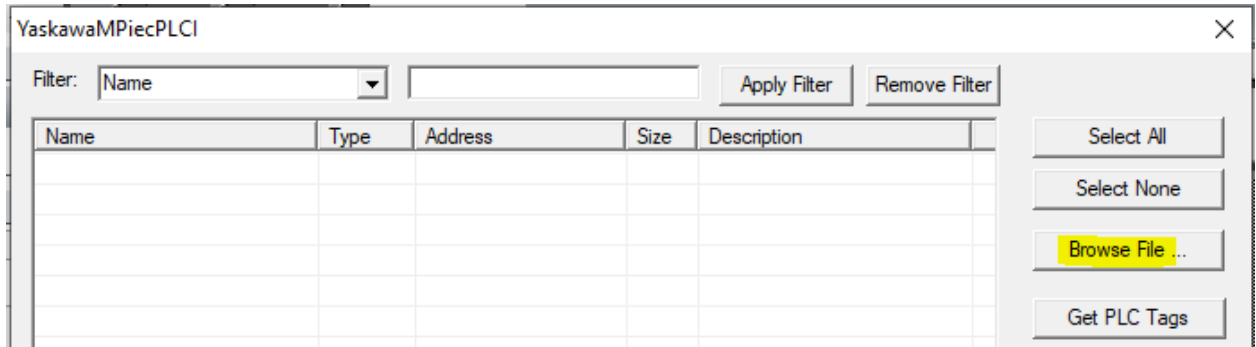
V. Import Variables from the MotionWorks IEC project (10 min)

A. Open/Unzip the MotionWorks IEC project **SmartPanelBasic**.

1. Open MotionWorks IEC if not already open
2. File → Open

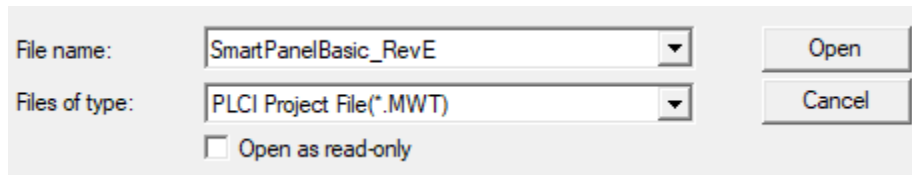
B. Open the Yaskawa MPiec PLCI window

1. Project Explorer: **REAL TIME DB** → **COMM.DRIVERS** → **YASKAWA MPIEC PLCI** →
2. **RIGHT CLICK** → **IMPORT FROM PLC DATABASE**
3. **YASKAWA MPIEC PLCI** window appears

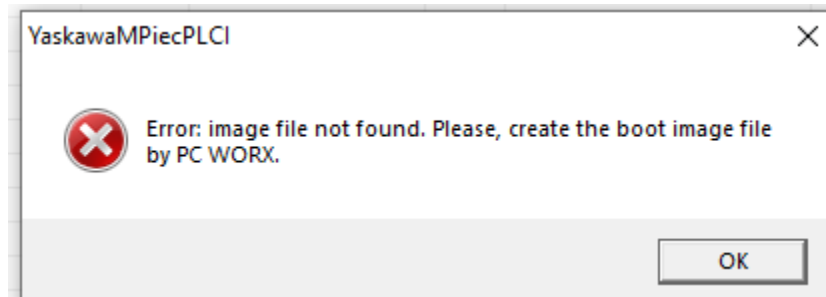


C. Create the Boot Project

1. Browse file → navigate to **SmartPanelBasic.mwt**



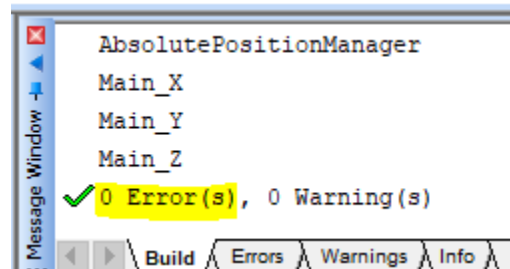
2. Expect the error



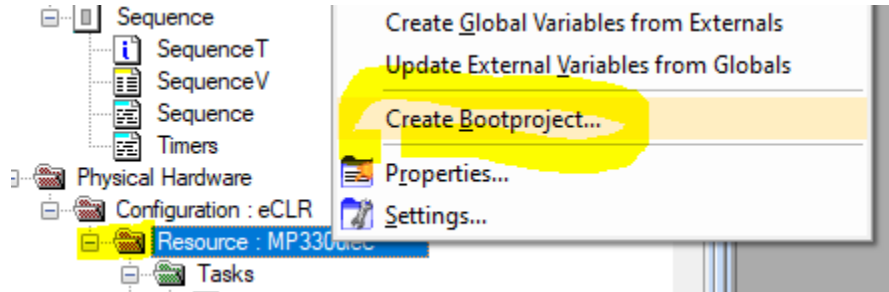
*The PLCI variable data is contained in the Bootproject, saved as **IMAGE.BIN**, which is created by MotionWorks IEC at download. The MWT project file points to **IMAGE.BIN**. If the project has not yet been downloaded, you can create the file manually in MotionWorks IEC.*

3. Update MotionWorks IEC project to contain the Bootproject, IMAGE.BIN

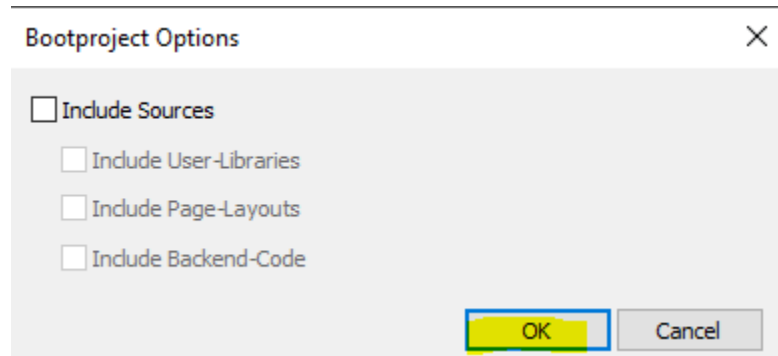
i. Build → Make (expect 0 errors, warnings are ok)



ii. MotionWorks IEC Project Tree → Right-click “Resource” → Create Boot Project

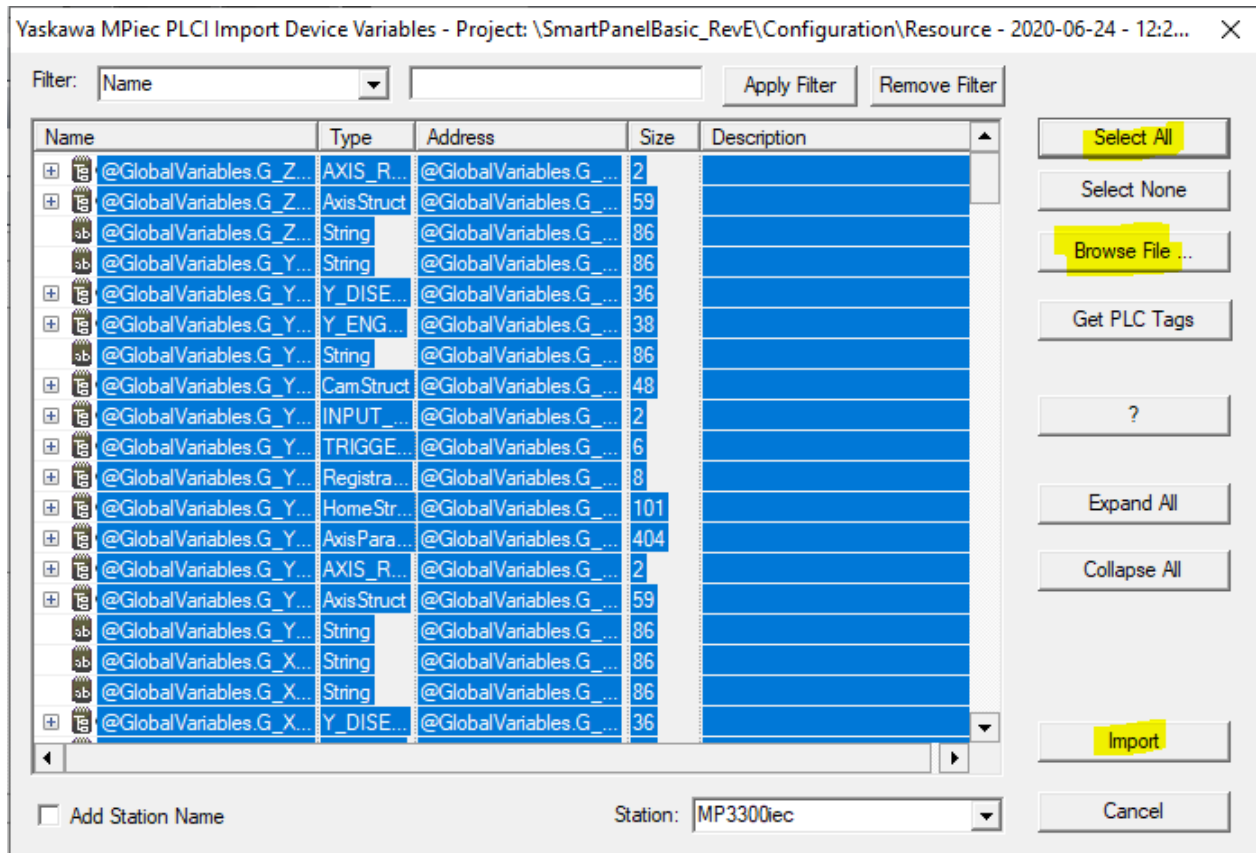


iii. No options are required

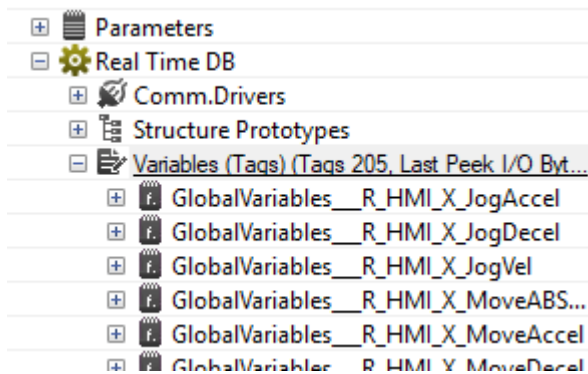


D. Import variables from MWiec project file (*.mwt) with Bootproject

1. Browse file → navigate to **smartPanel_Basic.mwt** → Select all → Import



2. Variables are visible in Project Explorer: **REAL TIME DB** → **VARIABLES**



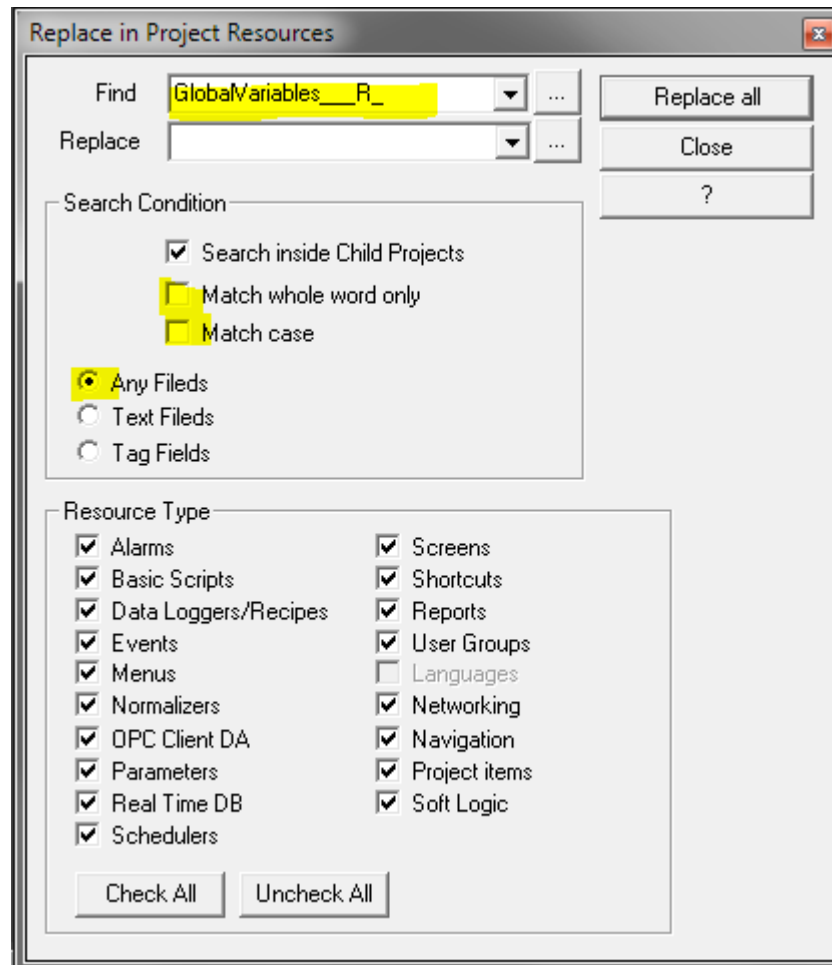
E. Remove the “GlobalVariables_” prefix from all variables

This also works on a completed project

1. Edit → Replace Text in All Project Resources
2. Remove GlobalVariables__R_ (three consecutive underscore characters)

The __R_ signifies variables marked “retain” in the MPiec

- i. Uncheck Match whole word only
- ii. Uncheck Match case



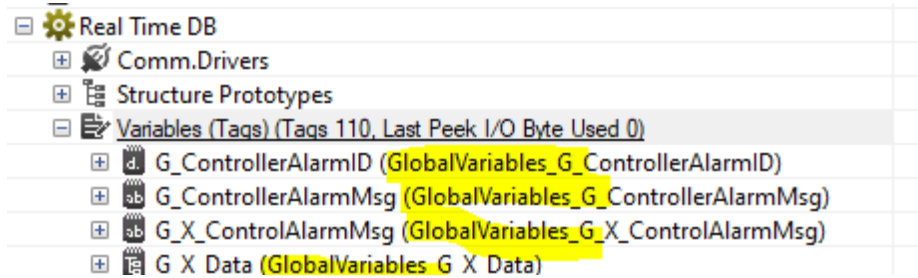
3. Remove GlobalVariables_ prefix from all variables

This prefix is for global variables that are not retained.

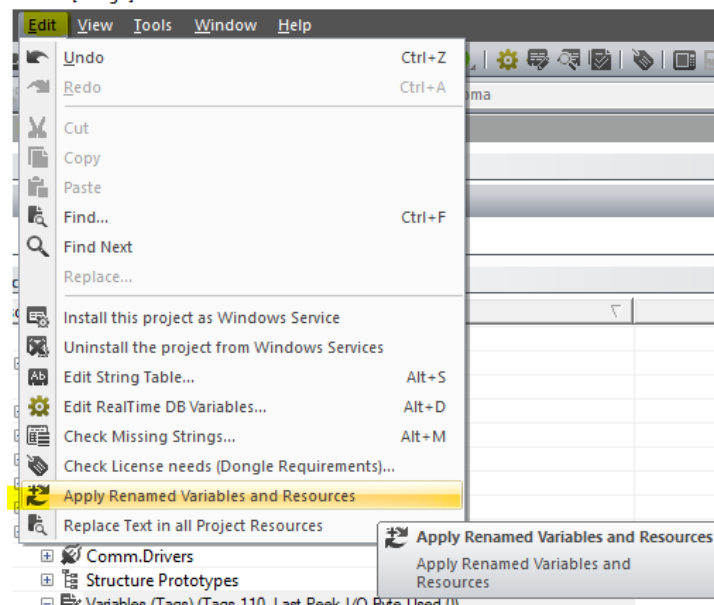
- i. Use the same settings as above

F. Apply the new names

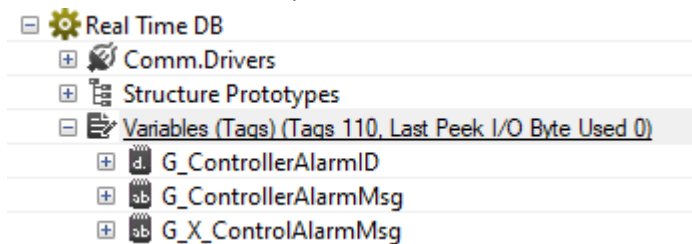
1. This step is not required for functionality
2. When an object is renamed in the project explorer, the old name is retained



3. You can apply the new name. This can be done individually or all at once with Edit→Apply Renamed...



4. The names are “cleaned up”



End Of Mini-Lab

Certification Checklist

- ☐ Movicon project has PLCI driver with Communications Success
- ☐ Variables/Tags in Movicon from MotionWorks IEC with prefix removed

VI. Optional Exploration – Work on any of the following in any order

A. Browse the Symbol Libraries for interesting clip art and controls to add later

