# XMPS- 2000 March 2023

# Tasks SRS

# Contents

## Task 1: Online monitoring of Tag window

Requirement:

Online monitoring on Tag window data.

1. This will be activate only when the PLC is in online mode.
2. When user selects the Tag Row then create the Online Monitor frame of below 20 addresses and send to PLC.
3. Separate out System tags & User defined tags by adding '+' to hide or expand.

## Task 2: Cross reference

This command (category View) opens a view window where you can get listed the cross references of a project variable , that is the locations where the variable is used within the project and various Logic blocks.

Requirement:

1. This feature is applicable for all tags used in all Logic blocks,tagwindows& Modbus window
2. When user selects and Right click on particular tag then in Right click option ' Browse Cross reference'
3. After click on option ' Browse Cross reference' following window with data should appear at the Bottom side of Software.

Cross Reference List

abc | Search

| Variable | Location | Type | Address | Rung | |
|---|---|---|---|---|---|
| abc | LogicBlock01 | Bool | F2:005 | Rung 3 | |
| abc | LogicBlock03 | Bool | F2:005 | Rung25 - | |
| abc | Tags | Bool | F2:005 | 25 - | |
| abc | Modbus RTU Master | Bool | F2:005 | 3 | |

Fig.1

4. Tag should be cross reference from the following screens

Tag screen, Any LogicBlock screens, Modbus RTU Master & Slave, Modbus TCP server & Client

5. User can search any tag name also from search window.

## Task 3: Tag details display when cursor pointed to that tag

Requirement:

When user gets the mouse pointer above any Tag in any LogicBlock screen

Following details should appear:

Example of **abc** tag shown below:

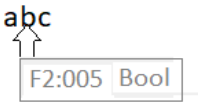



Fig.2

## Task 4: User defined Function Block

Requirement:

**UI:**

1. Add UDFB folder below the LogicBlocks
2. Under UDFB when user right clicks then 'Create UDFB' option should appear.

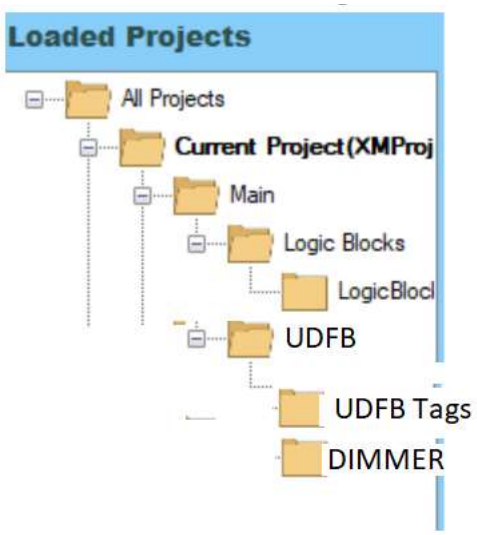



Fig.3

3. UDFB Tags will create automatically . Here all tags which are used in any UDFB will be present like below:

This is just Example of showing Tags of two different UDFB.

| | LogicalAddress | Tag | Type | InitialValue | Retentive | RetentiveAddress | ShowLogicalAddress |
|---|---|---|---|---|---|---|---|
| UDFB - Dimmer | | | | | | | |
| | S3:002 | STATUS_CPU | DataType-Word | | ☐ | | ☐ |
| | S3:003 | STATUS_ON_BOARD_IO | DataType-Word | | ☐ | | ☐ |
| | S3:004 | STATUS_LOCAL_IO | DataType-Word | | ☐ | | ☐ |
| | S3:005 | STATUS_PRG | DataType-Word | | ☐ | | ☐ |
| | S3:006 | STATUS_PLC_Mode | DataType-Word | | ☐ | | ☐ |
| | S3:007 | STATUS_EXIO_Mismatch_Err | DataType-Word | | ☐ | | ☐ |
| | S3:008 | Retentive_Data_invalid_Err | DataType-Word | | ☐ | | ☐ |
| UDFB - CFC | | | | | | | |
| | S3:011 | STATUS_SCAN_TIME | DataType-Word | | ☐ | | ☐ |
| | S3:020 | STATUS_HOURS | DataType-Word | | ☐ | | ☐ |
| | S3:021 | STATUS_MINS | DataType-Word | | ☐ | | ☐ |
| | S3:022 | STATUS_SECS | DataType-Word | | ☐ | | ☐ |
| | S3:023 | STATUS_DATE | DataType-Word | | ☐ | | ☐ |
| | S3:024 | STATUS_MONTH | DataType-Word | | ☐ | | ☐ |
| | S3:025 | STATUS_YEAR | DataType-Word | | ☐ | | ☐ |
| | T6:000 | ET_TON | DataType-Word | | ☐ | | ☐ |

4. When user click on ‘Create UDFB’ user can create the function blocks with their own name (following popup should come to configure the UDFB)
5. Inside the ‘Dimmer’ user should able to right the logic and able add No. of Inputs & Outputs INPUT & OUTPUT with the datatype& text of INPUT & OUTPUT which will display in the popup window.
6. Datatype & Texts should be selectable and Inputs & outputs will vary.

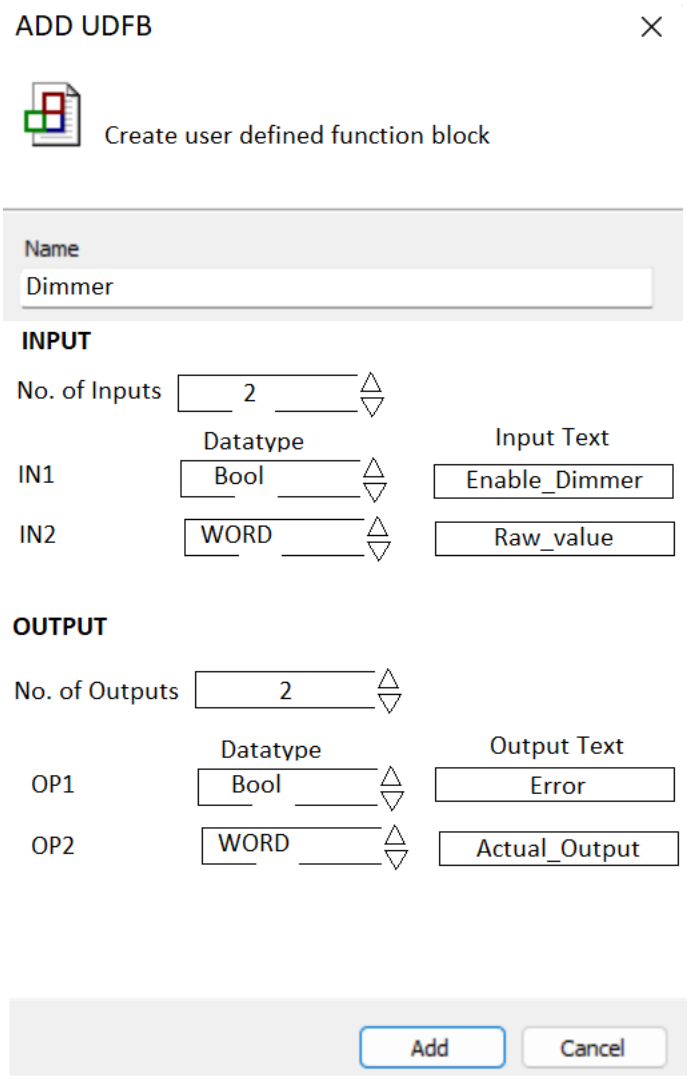



Fig.4

7. These above details can be reedited by the user by Right click on 'Dimmer' block.
8. The max. limitation of INPUT & OUTPUT tags are 15.
9. The Function block with appropriate name eg-'Dimmer' should come under the Instruction list under Type ' UDFB'
10. When user select this FB it should ask for the addresses with and Tags as per the regular other FBs.
11. Validation of tags : Similar Tags and Address should not be able to use in both Tag windows – 'Tag' & ' UDFB Tags'

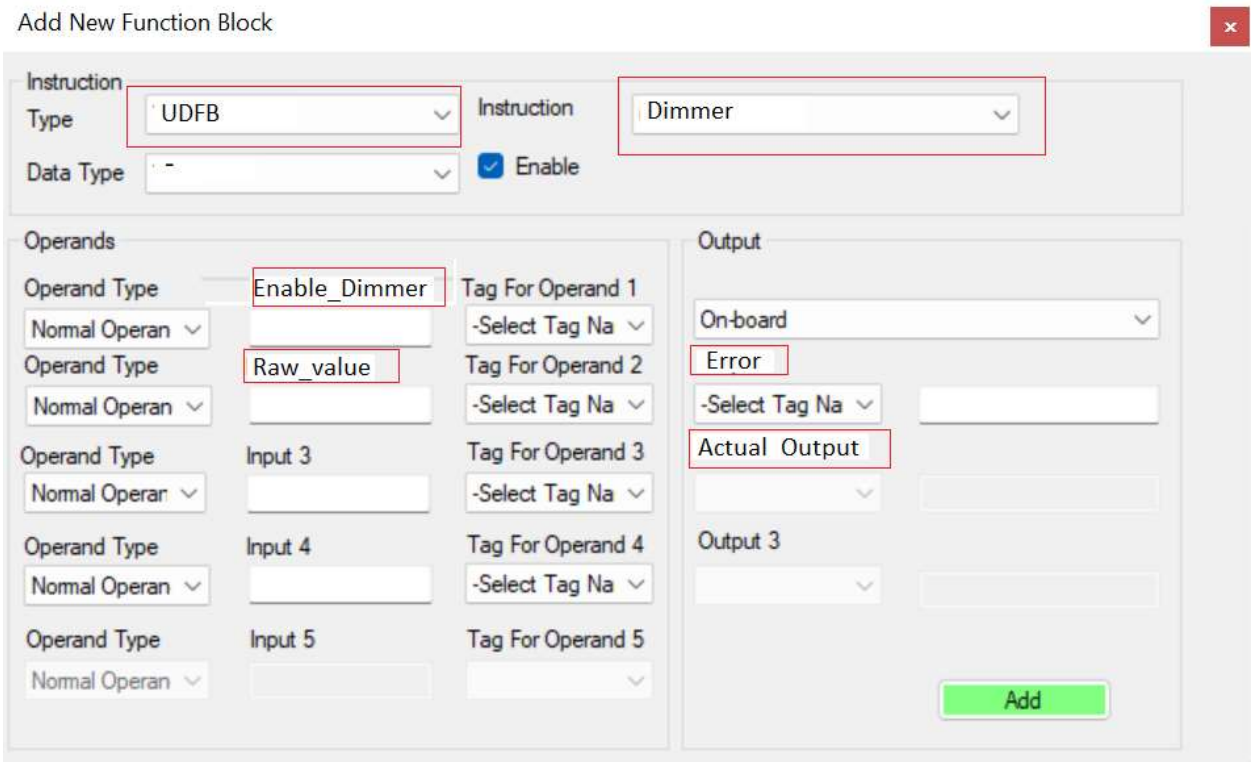



Fig.5

12. Validations are: the Data types assigned in INPUT & OUTPUT screen
13. When user add the FB after filling all the Details then FB should be added like below.


Fig.6

14. When user place the mouse arrow above any it should see the Texts for particular inputs/outputs which is given in FB config popup.
15. Under any UDFB block for Eg- 'Dimmer' when user write the logic the user can able to assign INPUT/OUTPUT number to any Contact, Coil & FB Inputs or Outputs. Assigned text should display in different colour (Blue)
    See below:

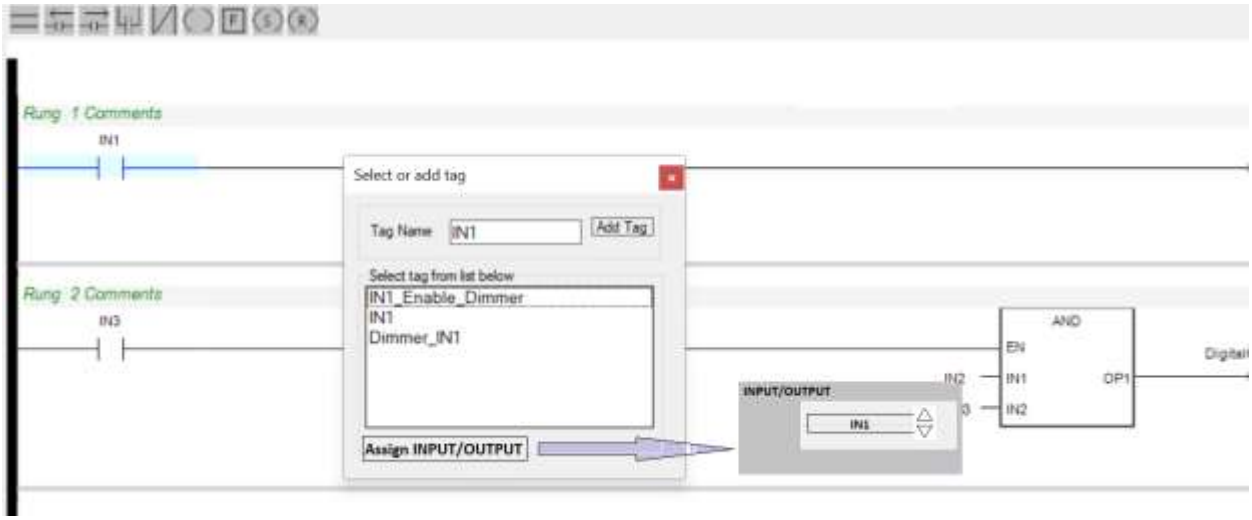



Fig.7

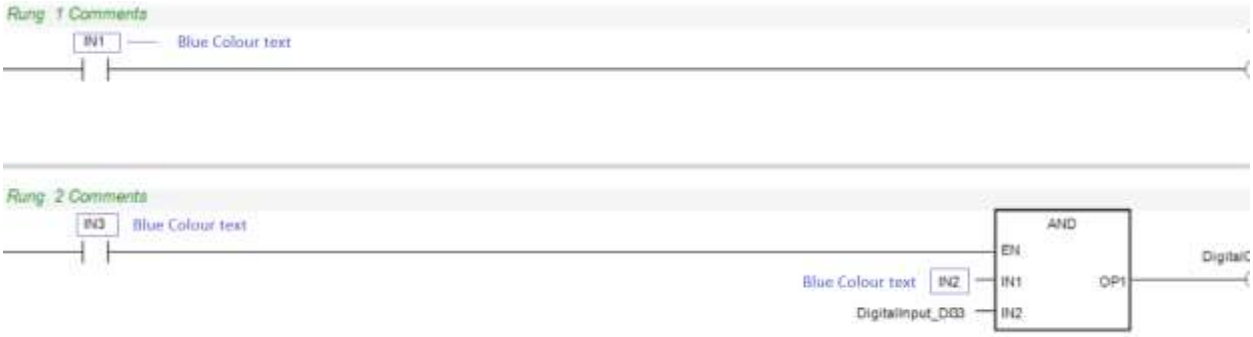



Fig.8

16. Above subtag window should be visible only in UDFBs. Not in LogicBlock window.
17. The address for this Blue texts should be assign directly in CSV. By the referencing the Tags assigned in LogicBlock. (see Fig 6)
18. User can add same UDFB many time in their LogicBlocks with different Logical addresses.

App.csv:

1. When user adds the UDFB then the rungs associated with the particular FB should add in csv. (eg- UD01,UD02 etc.)
2. Give specific remark after comments column like we give for LogicBlock.
3. The Blue text logical address should get from the actual address tags assigned to eg- ‘Dimmer FB1’ ‘ Dimmer FB2’. …..

## Task 5: Multiple Request, Tag Select and delete.

Requirement:

1. User should able to select multiple requests or Tags from Any Modbus or Tags window and by clicking Right click he should able to delete.

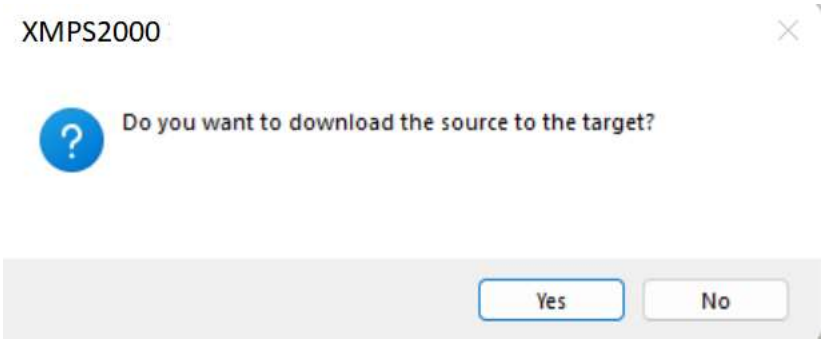
## Task 6: Source code Download & Upload

Source code Download:

Requirement:

GUI:

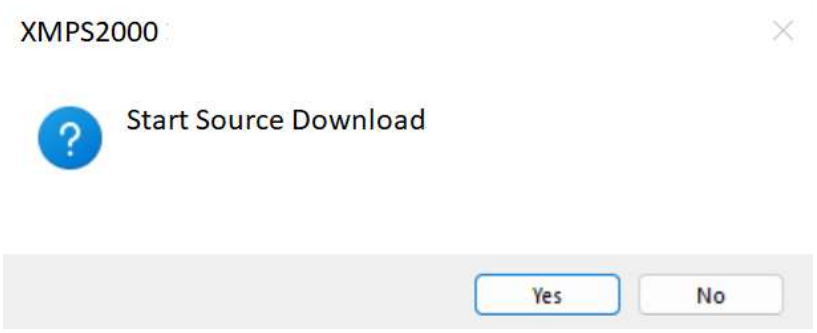
1. Every time when user compile the project the zip file should be created to the project folder.
2. Under 'Mode' tab add 'Download Source code' option
3. When user click on 'Download Source code' following popup should come



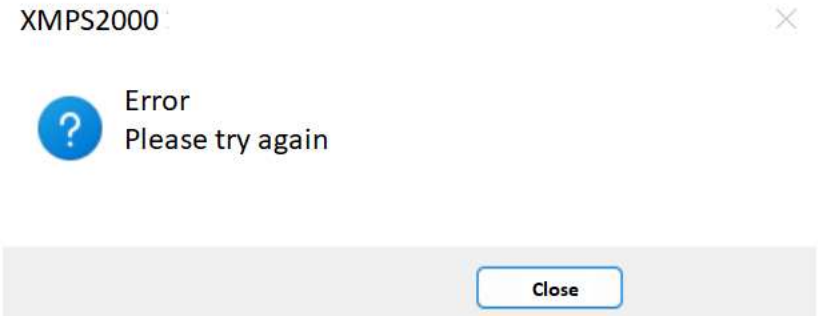

4. When user click on 'Yes' following frame should send to PLC and latest code should compiled and save automatically.

| | | SOF | CMD | CRC | EOF |
|---|---|---|---|---|---|
| **Source download** | **Request from XMPS2000** | 0xFE | 0xEA | 0xEA xor 0X97 | 0XFF |
| | | | | | |
| | **Response from PLC** | **SOF** | **Status** | **CRC** | **EOF** |
| | | 0xFE | 0xEA -- ok | 0xEA xor 0X97 | 0XFF |
| | | 0xFE | 0xEB -- Error | 0xEB xor 0X97 | 0XFF |

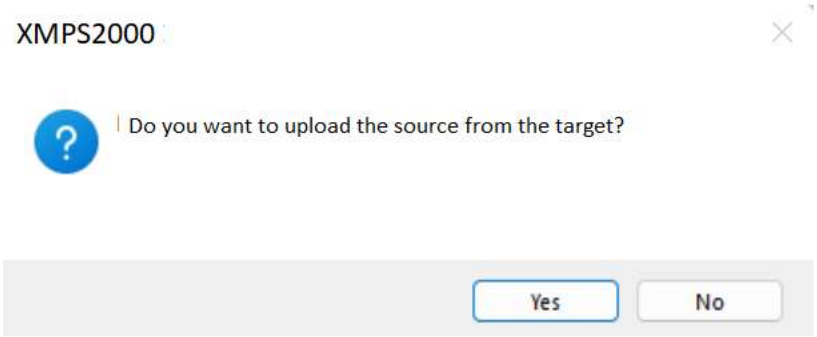
5. After receiving response from PLC following popup should come.




6. When user click on 'Yes' the Generated zip file of Source code with default name 'Project.zip' should be downloaded to the PLC via TFTP.
7. If Error frame received following popup should come.



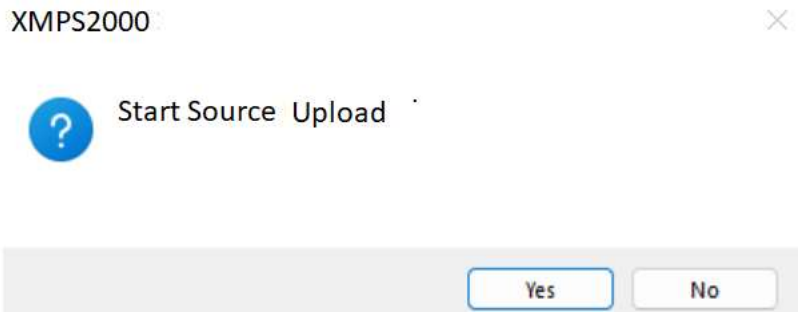

8. Similar for project upload.
9. Under 'Mode' tab add 'Upload Source code' option
10. The latest opened project should save and the new path window should come save new uploaded project.
11. User should select path to save uploaded project. After selecting path, IP address, gateway, Subnet popup should come
12. After that following popup should come.



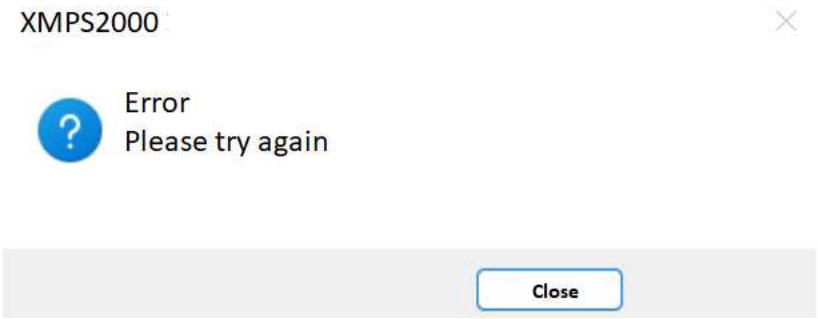

13. When user click on 'Yes' following frame should send to PLC.

| Source Upload | Request from XMPS2000 | *SOF* | *CMD* | *CRC* | *EOF* |
|---|---|---|---|---|---|
| | | 0xFE | 0xEC | 0xEA xor 0X97 | 0XFF |
| | | | | | |
| | **Response from PLC** | *SOF* | *Status* | *CRC* | *EOF* |
| | | 0xFE | 0xEC -- ok | 0xEC xor 0X97 | 0XFF |
| | | 0xFE | 0xEB -- Error | 0xEB xor 0X97 | 0XFF |

14. After receiving response from PLC following popup should come.




15. When user click on 'Yes' the zip file of Source code with default name 'Project.zip' should be uploaded to the PLC via TFTP.
16. And project should open as per backup.
17. If Error frame received following popup should come.

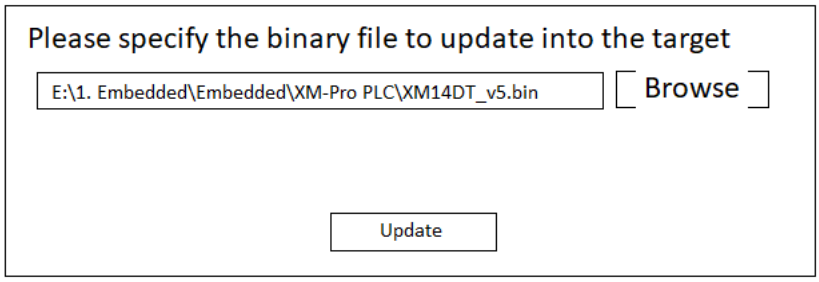



## Task 7: Firmware Update

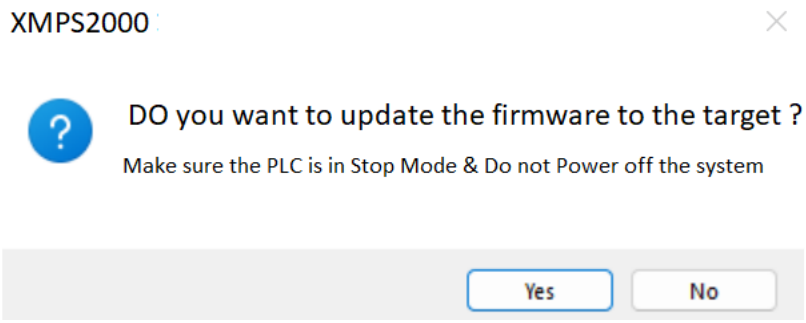
Requirement:

GUI:

1. Under 'Mode' tab add 'Update Firmware' option
2. When user click on 'Update Firmware' following screen should come.
3. Login screen with default userid & password 'userid-admin' pass-admin'. After login following screen should come.
4. In this screen user can able to select the Firmware '.bin' file.



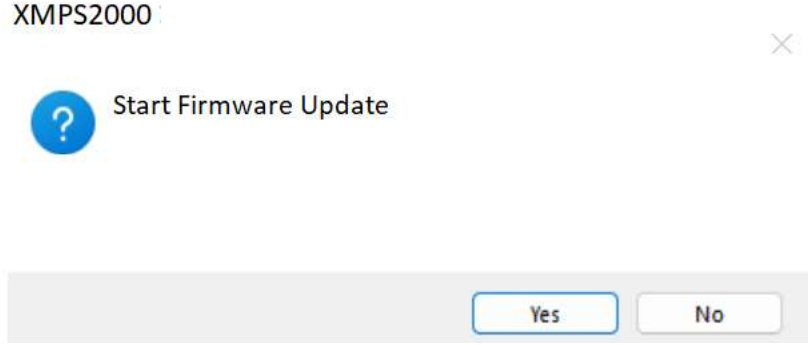

5. When user click on 'Update' following opup should come



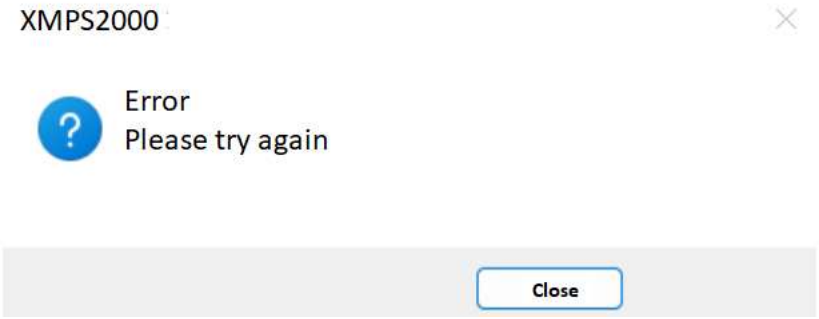

6. When user click on 'Yes' then following frame should send to PLC.

| Firmware Update | Request from XMPS2000 | *SOF* | *CMD* | *CRC* | *EOF* |
|---|---|---|---|---|---|
| | | 0xFE | 0xED | 0xED xor 0X97 | 0XFF |
| | | | | | |
| | **Response from PLC** | *SOF* | *Status* | *CRC* | *EOF* |
| | | 0xFE | 0xED -- ok | 0xED xor 0X97 | 0XFF |
| | | 0xFE | 0xEB -- Error | 0xEB xor 0X97 | 0XFF |

7. After receiveing OK response from PLC following popup should come.




8. If error comes then show the error popup.


XMPS2000
Error
Please try again
Close