

XMPS- 2000 June 2023

Tasks SRS

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| XMPS2000 June 23 SRS | <u>Author</u> | Mansi Sonawane | <u>Date</u> | 6 June 2023 |
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Task 1: Online monitoring of IO Config windows

Requirement:

Online monitoring of IO Config Windows.

1. This will be activate only when the PLC is in online mode.
2. This feature is applicable for all Base IO, Expansion IO and Remote IO.
3. The updated value should be displayed continuously on this screen (e.g. if the user selects row no. 2 and wants to see the updated value of that row, he does not need to select that row again.)

Task 2: Redesign and Replace symbols of ladder element (Ladder Toolbar)

Requirement:

UI:

Redesign of shortcut Symbols.

1. FlairMind should give the size of icons.
2. Change the previous symbols of the ladder element to the new symbols.
(Messung will provide redesigned icons).

Task 3: Tag Copy, cut, Paste (Tag Window)

Requirement:

UI:

1. When a user selects a particular tag, he should be able to copy that particular tag and paste that tag in same window.
2. User should be able to cut tags in tag window.
3. The user should be able to copy, paste and cut tags in the tag window by right clicking on the tag and using keyboard shortcut keys.
4. When a user copies a specific tag and pastes that tag, a tag setting popup (Add tag Popup) should appear with all the copied data.

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5. Validation :

1. If the user closes the popup directly without clicking Save, the tag should not appear on the screen.
 2. If the user directly clicks the save button without changing any parameter (e.g. address or tag name) then an error should appear which means this address is already added.
6. Applicable to User defined tag window and UDFB tag window.

Task 4: Modbus request copy cut paste.

Requirement:

UI:

1. This requirement is applicable to Modbus TCP Client, Modbus TCP Server, and Modbus RTU Master.
2. When a user selects a specific request he should be able to copy the specific request and paste that request.
3. User should be able to copy, paste and cut all Modbus request in Modbus TCP Client, Modbus TCP Server, Modbus RTU master window.
4. The user should be able to copy, paste and cut request by right clicking on the request and using keyboard shortcut keys.
5. When a user copies a specific request and pastes that request, a request setting popup (Add request Popup) should appear with all the copied data.
6. Validation :
 1. If the user closes the popup directly without clicking Save, the request should not appear on the screen. (As shown in below image)

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Modbus RTU Master Settings

| | | |
|-------------------------------------|--|--|
| Polling (ms) | <input type="text" value="100"/> | (Range: 0 to 3600000) |
| Device Id | <input type="text" value="0"/> | (Range: 0 to 255) |
| Address | <input type="text" value="0"/> | (Range: 50 to 65535) |
| Length | <input type="text" value="1"/> | (Range: 1 to 255) |
| Function Code | <input type="text" value="Read Coil (01)"/> | |
| Variable | <input type="text" value="DigitalOutput_D00"/> | <input type="text" value="Q0:000.00"/> |
| <input type="button" value="Save"/> | | |

- If the user directly clicks the save button without changing any parameter (e.g. address or tag name) then an error should appear which means this address is already added.

Task 5: Add Tag from Modbus Window.

Requirement:

UI:

- This requirement is applicable to Modbus TCP Client, Modbus TCP Server, and Modbus RTU Master.
- A tag that is not added to the tag window and the user tries to add that tag to the Modbus window should be able to add that tag to the Modbus window.
- After adding a tag, that particular tag should also be added to the tags window.

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Task 6: Enable Undo, Redo, delete shortcuts from shortcut menu bar

Requirement:

UI:

1. Enable Undo, Redo and Delete all these shortcuts from the menu bar.
2. User should be able to undo changes and redo changes.
3. User can undo and redo up to 5 of last design actions.
4. User should be able to select multiple logic rungs, multiple Modbus request and multiple tags and delete it by right clicking.

Task 7: Enable All shortcut Keys (Hotkey / Standard keyboard shortcut).

Requirement:

UI:

1. Enable Copy, paste, undo, redo, delete all these hotkey.
2. The user should be able to use all these hotkeys in the Tag window, Modbus window and Logic Block window.

Task 8: Find & replace tag with new tag And Search Tag

Requirement:

UI:

1. Under “find & replace” tab add following option.
2. 1. Find in Project
2. Replace in Project.
3. When user click on ‘find in project’ following screen should come. And the user should be able to find / search any tag in the project.
4. This image is just an example. FlairMind should suggest if any standard popups are available to find and replace feature.

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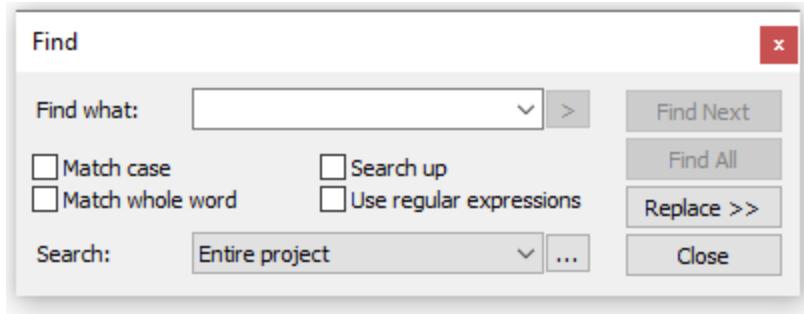


Fig1

- When user click on 'replace in project' following screen should come And the user should be able to replace any tag in the project with a new tag.

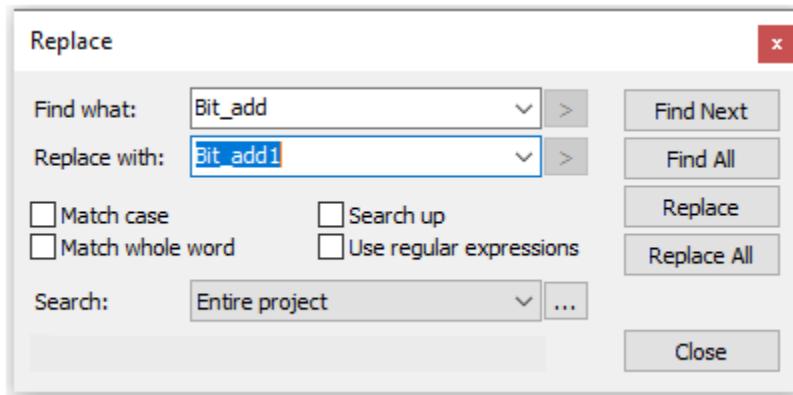


Fig2

Task 9: Comment out the entire Logical Rung and Userdefine Tag and Main Block.

Requirement:

Logical Rung:

- Add "Rung Comment" option to Logic Block window, Tag window and Main Block window.
- The user should be able to comment the entire rung in the logic block by right clicking on the "Rung Comment" option.
- If the user comments a particular line/Rung, the logic for that Rung should not be executed.
- And CSV and MCODE should also not be generated for comment out rung.

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Ex: Comment out rung



Tag:

- The user should be able to comment on the tag name in the tag window by right clicking on the "Comment Tag" option.

Example: A user should be able to reuse a particular address if they comment on any tag name.

i.e. if the user comments out the W4:000 address, he should be able to reuse that address.

| | | | | | |
|---------|----------------------|---------------|--------------------------|--------------------------|--------------------------|
| P5:000 | REAL_MR_ADD | DataType-Real | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| P5:001 | REAL_MR_ADD1 | DataType-Real | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| W4:006 | INT_MR_ADD2 | DataType-Int | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| P5:002 | REAL_MR_ADD3 | DataType-Real | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 'W4:007 | INT_MR_ADD3 | DataType-Int | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| P5:003 | REAL_MR_ADD4 | DataType-Real | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| W4:005 | INT_MR_ADD1 | DataType-Int | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| F2:000 | BIT_COMPARE | DataType-Bool | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| T6:000 | TIMER_ELAPSED_ADDRES | DataType-Word | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| F2:001 | BIT_COMPARE1 | DataType-Bool | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Fig3

Validation: If the user uncomments the tag then error message should appear indicating that this address is already added.

Main Block:

- The user should be able to comment a logic block in the main block window by right clicking on the "Comment Block" option.
- Change colour of rung and tag name after comment out action. (As shown in the picture above).

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Task 10: Edit tags, Modbus request should not go to bottom.

Requirement:

UI:

1. After editing any tag or Modbus request it should not go to the bottom of the list.
It should be in original condition after editing.
2. This point applies to both the Tag window and the Modbus Request window.

Task 11: Parallel Watch Window.

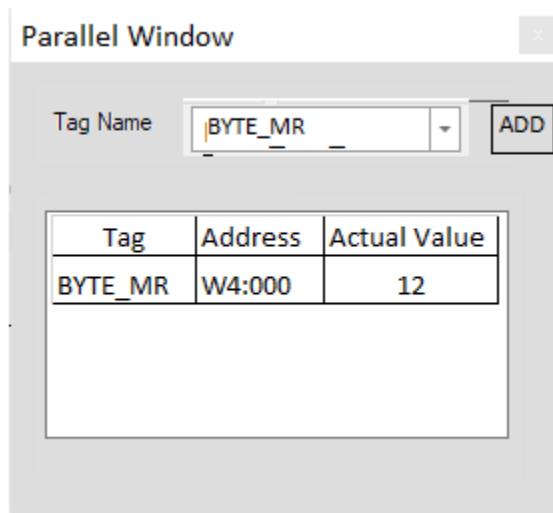
This functionality is useful to simulate the inputs and check the written logic on two different screen simultaneously.

(i.e. we can monitor project window and parallel watch window simultaneously)

This command opens a view window/popup where you can view Tag name, address and current value.

Requirement:

1. Add “Parallel Watch “feature. This feature is applicable for all tags used in all Logic blocks, tag windows & Modbus Window.
2. After click on option ‘Parallel Watch ‘following window should appear.
3. We will give maximum limitation up to 10 address.
4. User should be able to select multiple tag, and delete it by right clicking.
5. This screen should appear on any window of the software. (I.e. the user should be able to monitor this screen with any other window).
6. Add a scroll bar to view all addresses on this window.



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Task 12: Show F Keyword in red colour for force value.

This functionality is useful to check which inputs/output is forced.

Requirement:

1. We are providing two ways to specify the force value.
 1. When the user forces any value for input and output, indicate the "F" keyword Next to the force value. (As shown in below (fig1))
 2. Show forced value in Red colour. (As shown in below (fig2))
2. Remove the “F” keyword after unforcing the value.



Fig 1



Fig2

Task 13: Pack and Unpack (New Instruction FB Addition)

This functionality is useful to use Word address as bit address.

1. Pack:

FB name – Pack

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UI:**Input (0 -15) and Output (1)**

- Input 1 – Text (IN1)
- Input 2 – Text (IN2)
- Input 3 – Text (IN3)
- Input 4 – Text (IN4)
- Input 5 – Text (IN5)
- Input 6 – Text (IN6)
- Input 7 – Text (IN7)
- Input 8 – Text (IN8)
- Input 9 – Text (IN9)
- Input 10 – Text (IN10)
- Input 11 – Text (IN11)
- Input 12 – Text (IN12)
- Input 12 – Text (IN13)
- Input 14 – Text (IN14)
- Input 15 – Text (IN15)
- Input 16 – Text (IN16)
- Output 1 – Text (OP1)

Validation:

- Input 1: Bool
- Input 2: Bool
- Input 3: Bool
- Input 4: Bool
- Input 5: Bool
- Input 6: Bool
- Input 7: Bool
- Input 8: Bool
- Input 9: Bool
- Input 10: Bool
- Input 11: Bool
- Input 12: Bool
- Input 13: Bool
- Input 14: Bool
- Input 15: Bool
- Input 16: Bool

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- Output 1: Word (Except P5:xxx)

CSV: In progress (will update you after our internal discussion)

Opcode: In progress (will update you after our internal discussion)

2. Unpack:

FB name – Unpack

UI:

Input (1) and Output (0-15)

- Input 1 – Text (IN1)
- Output 1 – Text (OP1)
- Output 2: Text (OP2)
- Output 3: Text (OP3)
- Output 4: Text (OP4)
- Output 5: Text (OP5)
- Output 6: Text (OP6)
- Output 7: Text (OP7)
- Output 8: Text (OP8)
- Output 9: Text (OP9)
- Output 10: Text (OP10)
- Output 11: Text (OP11)
- Output 12: Text (OP12)
- Output 13: Text (OP13)
- Output 14: Text (OP14)
- Output 15: Text (OP15)
- Output 16: Text (OP16)

Validation:

- Input 1: Word
- Output 1: Bool
- Output 2: Bool
- Output 3: Bool
- Output 4: Bool
- Output 5: Bool
- Output 6: Bool
- Output 7: Bool
- Output 8: Bool
- Output 9: Bool

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- Output 10: Bool
- Output 11: Bool
- Output 12: Bool
- Output 13: Bool
- Output 14: Bool
- Output 15: Bool
- Output 16: Bool

CSV: In progress (will update you after our internal discussion)

Opcode: In progress (will update you after our internal discussion)

Task 14: Dword -- validation for addresses

Requirement:

UI:

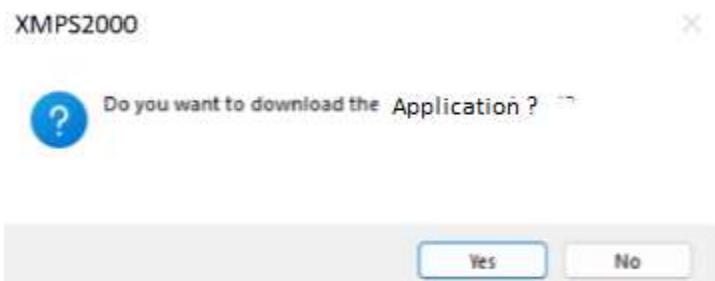
1. When the user uses the datatype “Dword” he also acquire the address W4:001 if he uses the address W4:000.
2. Apply Validation: When user uses address W4:000 then next time he tries to use W4:001 a warning message should occur which means it is already used.
3. This feature is applicable to both logic window and Tag window.

Task 15: Direct login without download

Requirement:

UI:

1. When user click on ‘Download’ following popup should come



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2. When user click on 'Yes' then only code should download.
3. When user click on 'login following popup should come
 1. Login with download
 2. Login without download



4. When user click on 'With Download' then only code should download with login and if the user clicks 'Without Download', the login process should be done directly without downloading.

Task 16: Device Info Screen

Requirement:

UI:

1. Enable "Device Info "option from view menu bar.
2. This screen should contain all information about On-board IO, Expansion IO and Remote IO, Module Name. (As shown below.)
3. Total Quantity of devices.
Ex: If the user adds two XM-DI-16 modules, the total number of DI-16 should be 2.

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Module Name : XM-14DT

COM Port : 1 (RS485)

ETH Port : 1

Device Details :

| Expansion | Total Quantity |
|-------------|----------------|
| XM-AI2-AO2 | 1 |
| XM-DI-16 | 2 |
| XM-DIO-16T | 1 |
| XM-DI8-DO6T | 1 |

IO Count :

| Module Name(XM-14 DT) | On-Board | Expansion | Total |
|-----------------------|----------|-----------|-------|
| DI | 8 | 16 | 24 |
| DO | 6 | | |
| AI | 0 | | |
| AO | 0 | | |
| UI | 0 | | |
| UO | 0 | | |

Task 17: Windows Licence activate

Requirement:

1. Activate Windows license for software installation.
2. This type of error message should not appear while installing the software. (Check the image below).

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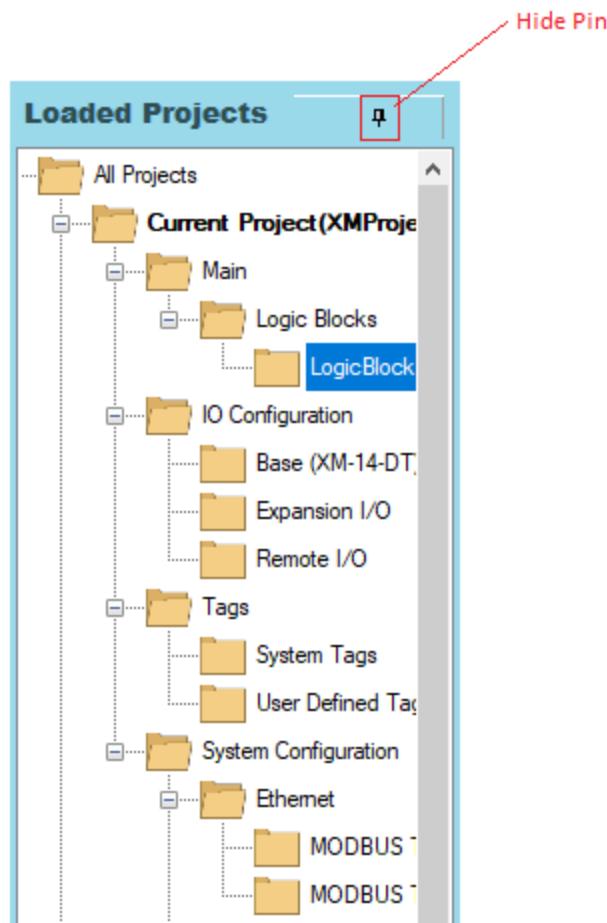


Task 18: Hide left panel of left project window and dynamic window sizes.

Requirement:

1. Add a hide pin for the left panel of the project window. (As shown below)

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2. After clicking Hide Pin the screen should appear as shown below.



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3. Click “Loaded Project” Text from the Project window to reopen the left panel of the Project window. (As shown in above image.)

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