

EXPERT GUI

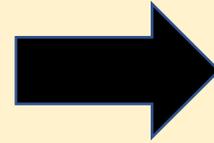
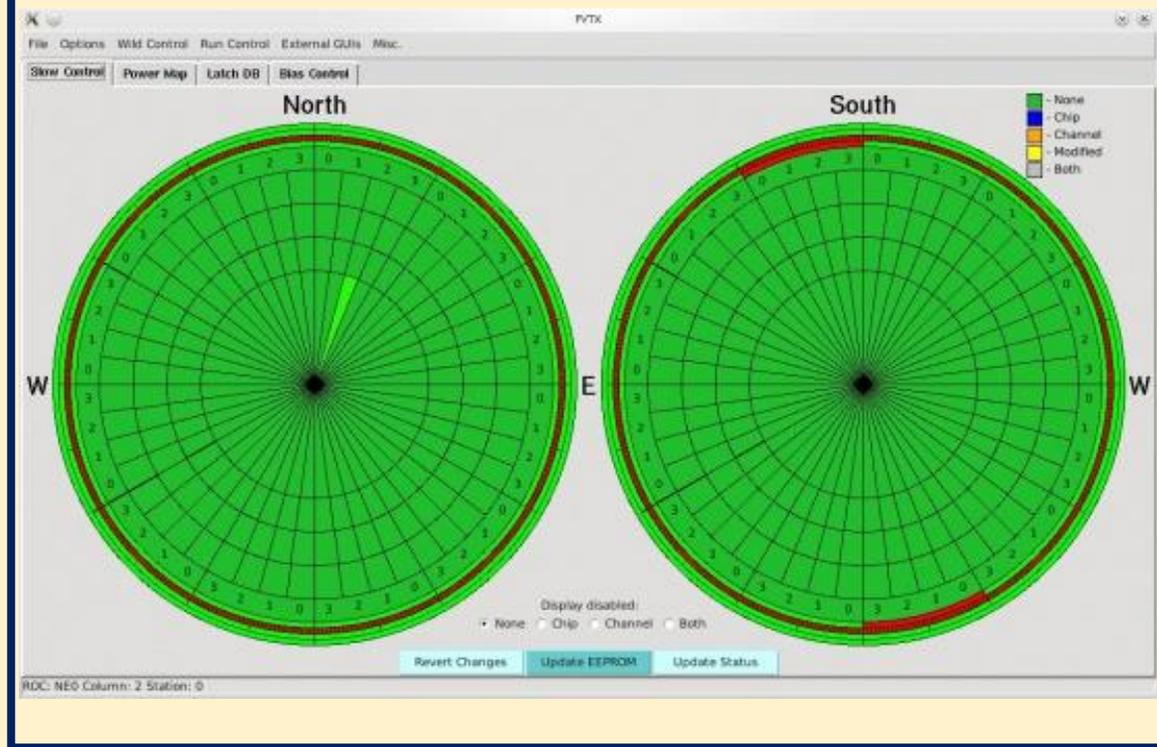
Hikaru Imai
(RBRC/Rikkyo Univ.)

Abstract

- **I would like to talk about expert GUI**
- **introduce plan of specification design and development status at present**

My task and goal

FVTX Expert GUI (PHENIX)



INTT Expert GUI (SPHENIX)



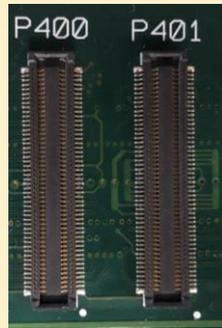
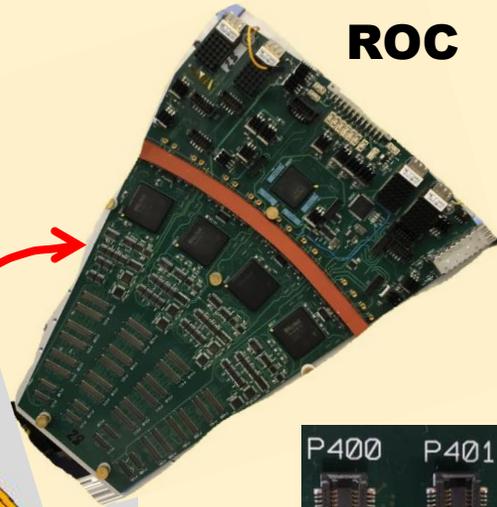
My task is to convert and rewrite FVTX Expert GUI to INTT Expert GUI which can handle all ladders

Primary GUI panels for INTT Expert GUI

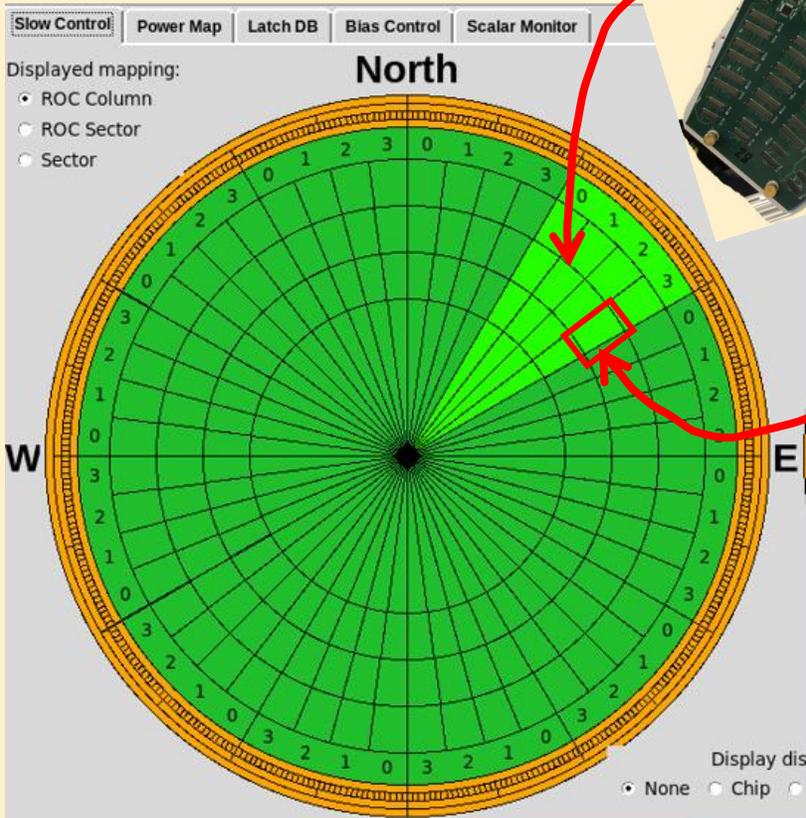
- **ROC panel as FVTX Expert GUI**
- **Barrel Ladder panel**
- **Data fiber latch status panel**

Executive summary of FVTX Expert GUI

- **ROC panel as FVTX Expert GUI** ←
- **Barrel Ladder panel**
- **Data fiber latch status panel**

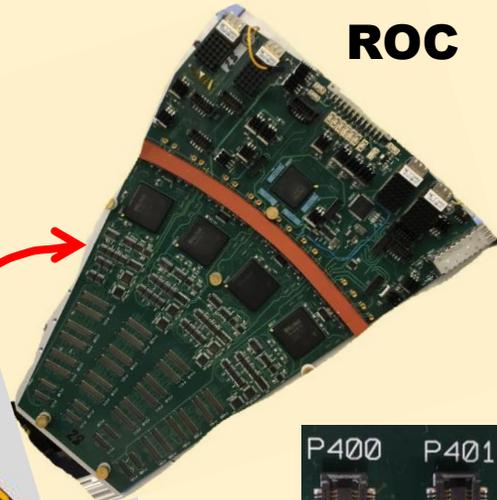


PORT

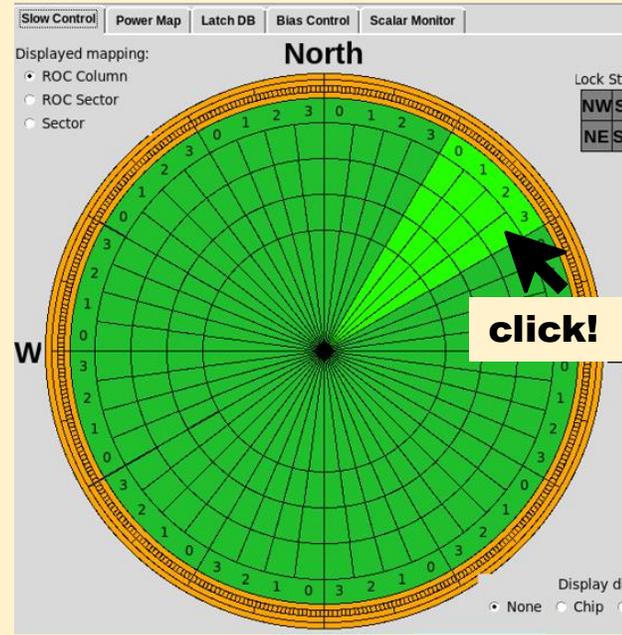


Executive summary of FVTX Expert GUI

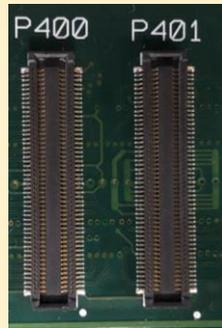
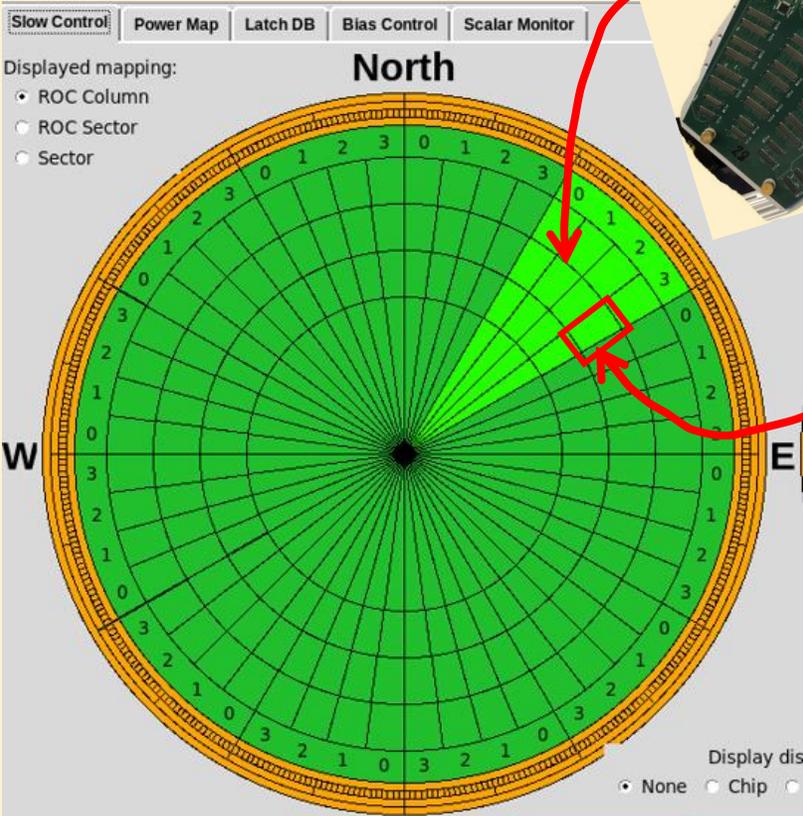
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ROC



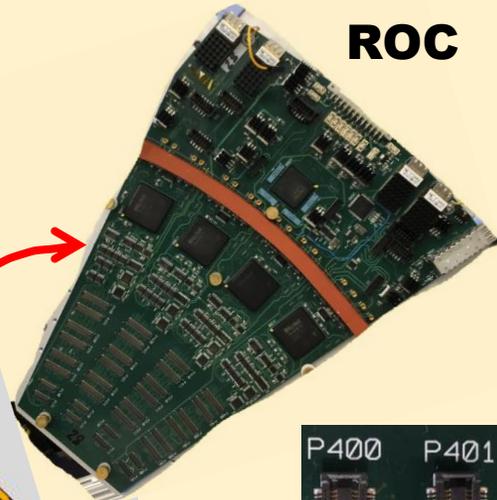
click!



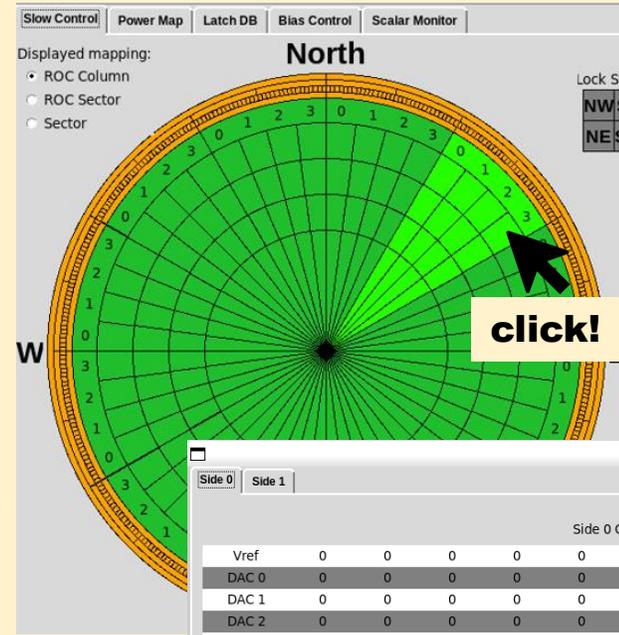
PORT

Executive summary of FVTX Expert GUI

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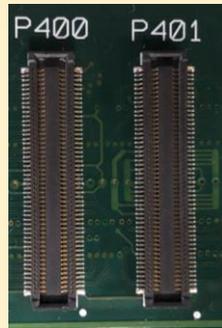
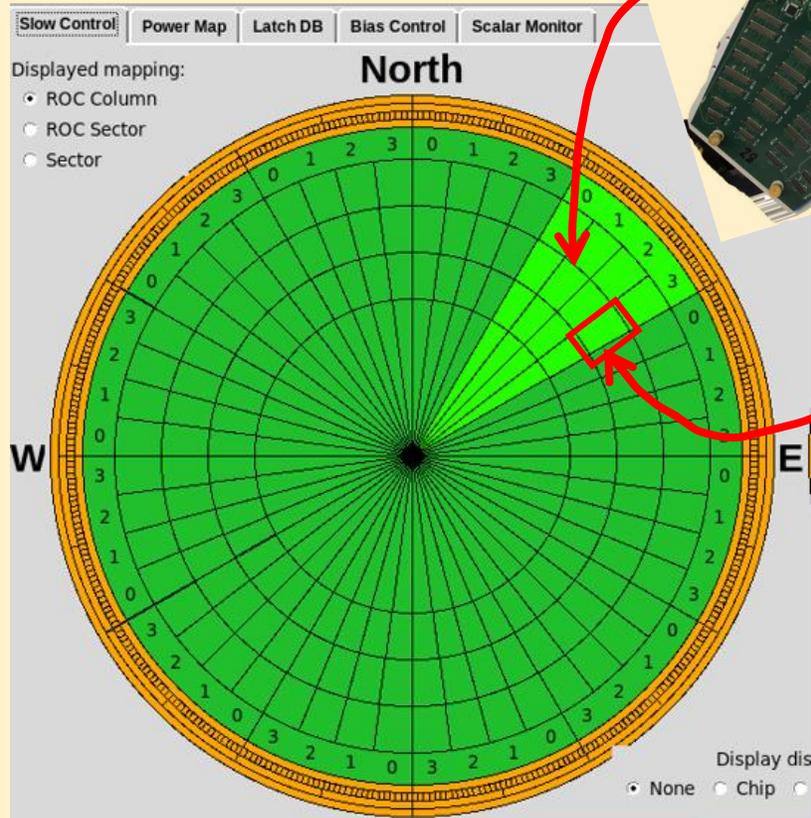
ROC



pop up a wedge control panel



click!



PORT

ROC: NE1 Column: 3 Station: 2

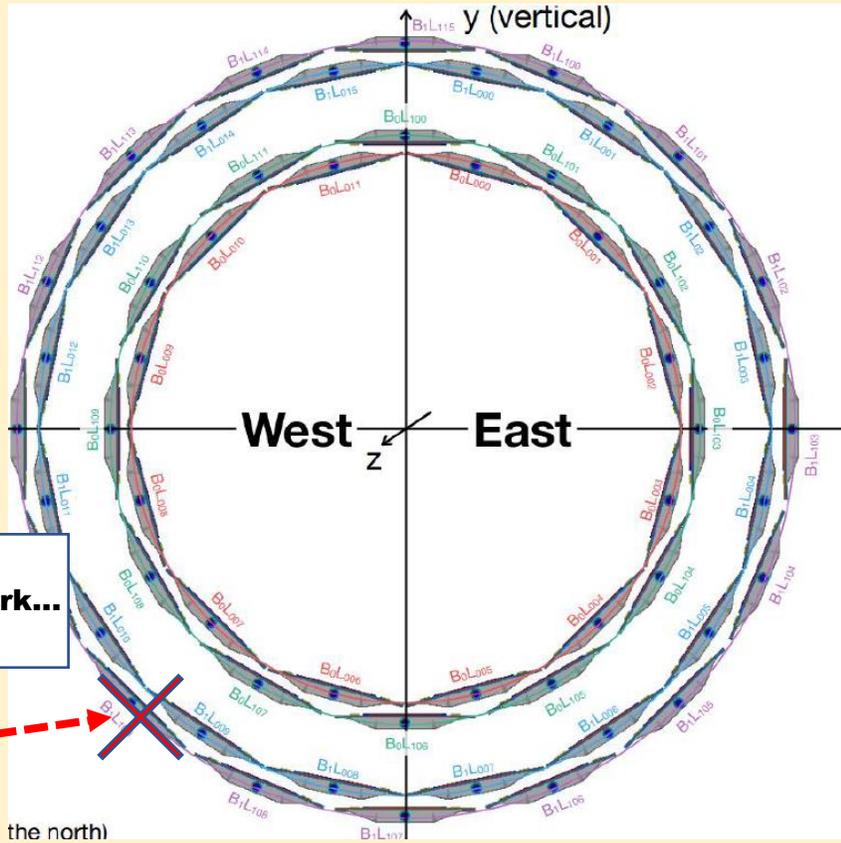
Side 0 Chip Settings [Editable]													Side 0 Controls														
Vref	0	0	0	0	0	0	0	0	0	0	0	0	Vref	0													
DAC 0	0	0	0	0	0	0	0	0	0	0	0	0	DAC 0	0													
DAC 1	0	0	0	0	0	0	0	0	0	0	0	0	DAC 1	0													
DAC 2	0	0	0	0	0	0	0	0	0	0	0	0	DAC 2	0													
DAC 3	0	0	0	0	0	0	0	0	0	0	0	0	DAC 3	0													
DAC 4	0	0	0	0	0	0	0	0	0	0	0	0	DAC 4	0													
DAC 5	0	0	0	0	0	0	0	0	0	0	0	0	DAC 5	0													
DAC 6	0	0	0	0	0	0	0	0	0	0	0	0	DAC 6	0													
DAC 7	0	0	0	0	0	0	0	0	0	0	0	0	DAC 7	0													
N1Sel	0	0	0	0	0	0	0	0	0	0	0	0	N1Sel	0													
N2Sel	0	0	0	0	0	0	0	0	0	0	0	0	N2Sel	0													
FB1Sel	0	0	0	0	0	0	0	0	0	0	0	0	FB1Sel	0													
LeakSel	0	0	0	0	0	0	0	0	0	0	0	0	LeakSel	0													
P3Sel	0	0	0	0	0	0	0	0	0	0	0	0	P3Sel	0													
P2Sel	0	0	0	0	0	0	0	0	0	0	0	0	P2Sel	0													
GSel	0	0	0	0	0	0	0	0	0	0	0	0	GSel	0													
BWSEL	0	0	0	0	0	0	0	0	0	0	0	0	BWSEL	0													
P1Sel	0	0	0	0	0	0	0	0	0	0	0	0	P1Sel	0													
InjSel	0	0	0	0	0	0	0	0	0	0	0	0	InjSel	0													
LVDS Current	0	0	0	0	0	0	0	0	0	0	0	0	LVDS Current	0													
Accept Hits	<input type="checkbox"/>	Accept Hits	<input checked="" type="checkbox"/>																								
Global Inject	<input type="checkbox"/>	Global Inject	<input type="checkbox"/>																								
Serial Select	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	Serial Select	0	1
Channel Mask	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel Mask	<input type="checkbox"/>	<input type="checkbox"/>														
Chip 1	Chip 2	Chip 3	Chip 4	Chip 5	Chip 6	Chip 7	Chip 8	Chip 9	Chip 10	Chip 11	Chip 12	Chip 13															

Revert Changes Read Chips Update EEPROM Write to Chips Wedge FFR

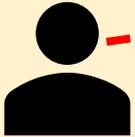
The plan is to implement the similar object to the INTT ROC control panel

Barrel ladder panel

- ROC panel as FVTX Expert GUI
- **Barrel Ladder panel** ←
- Data fiber latch status panel



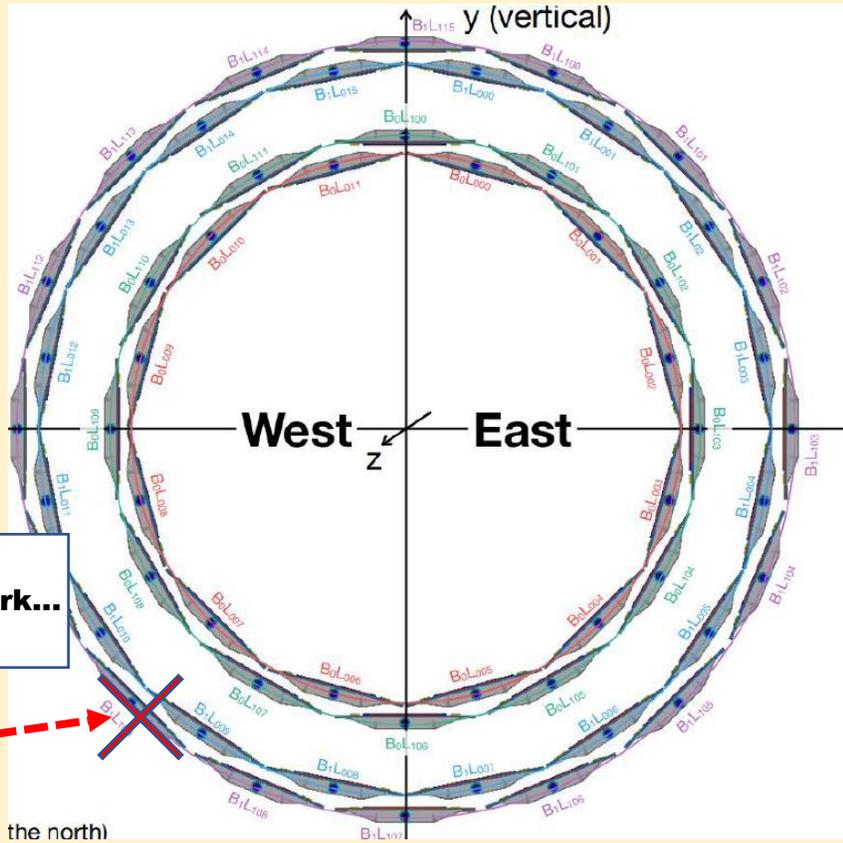
This ladder doesn't work...



the north

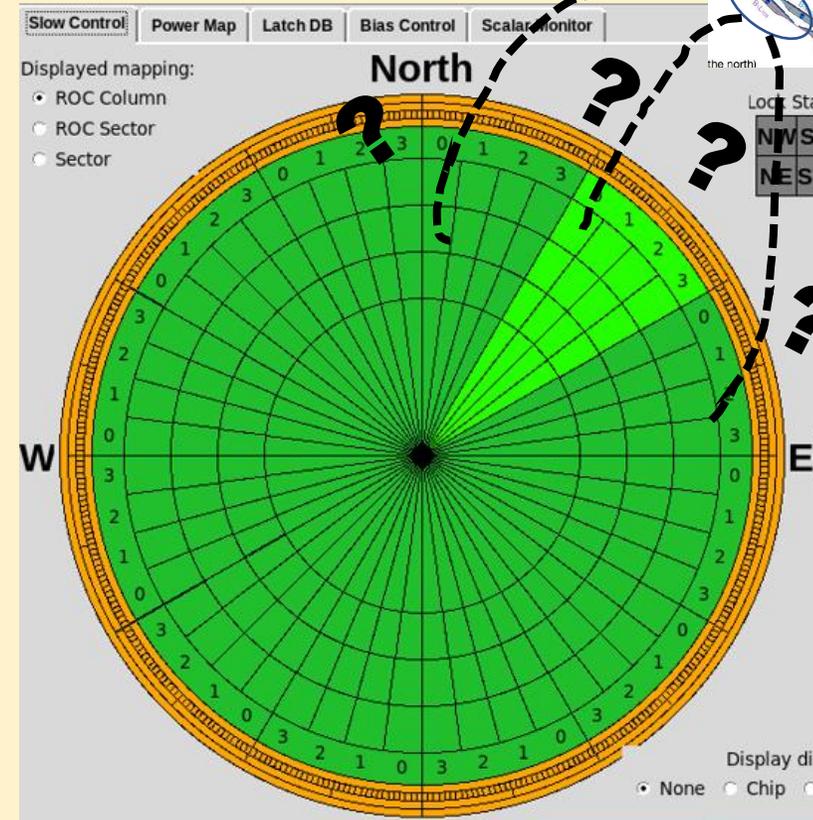
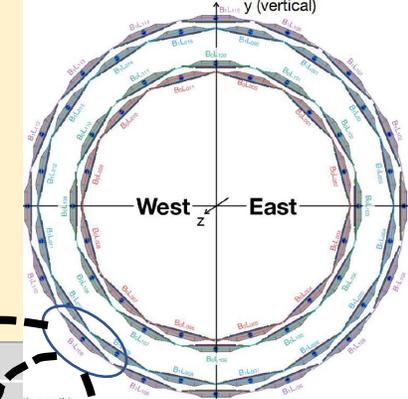
**If a bad ladder are found by online monitor ,
we need to do something,
for instance, send reset command to specific ladder .**

Barrel ladder panel



If a bad ladder are found by online monitor , we need to do something, for instance, send reset command to specific ladder .

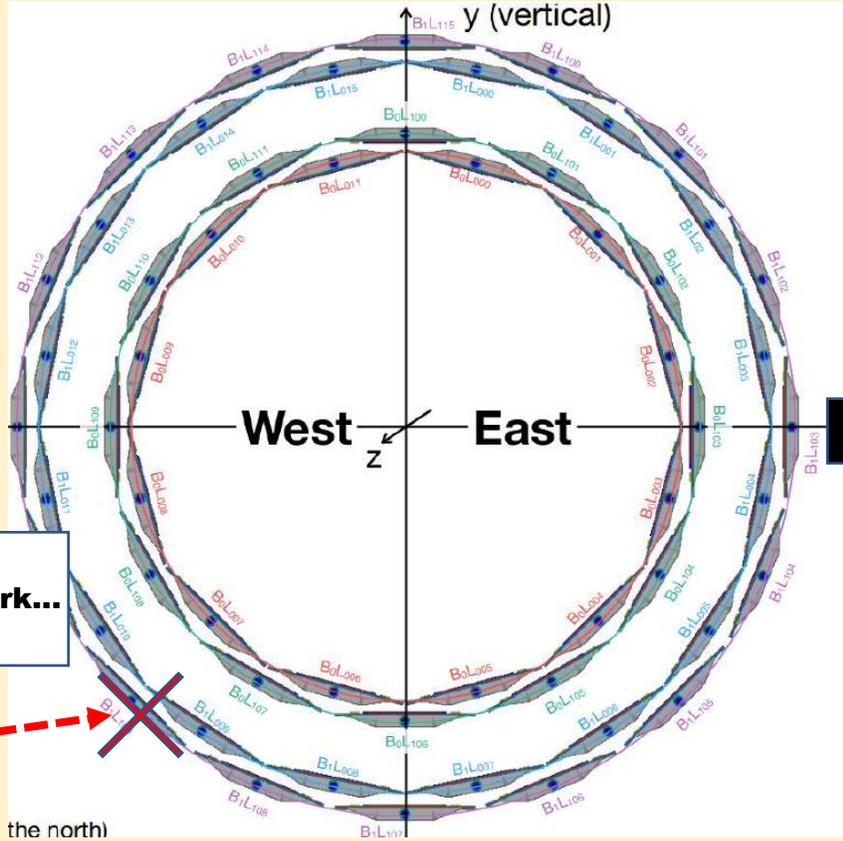
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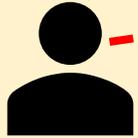
It is **difficult** to find port which are connected to bad ladder.

Barrel ladder panel

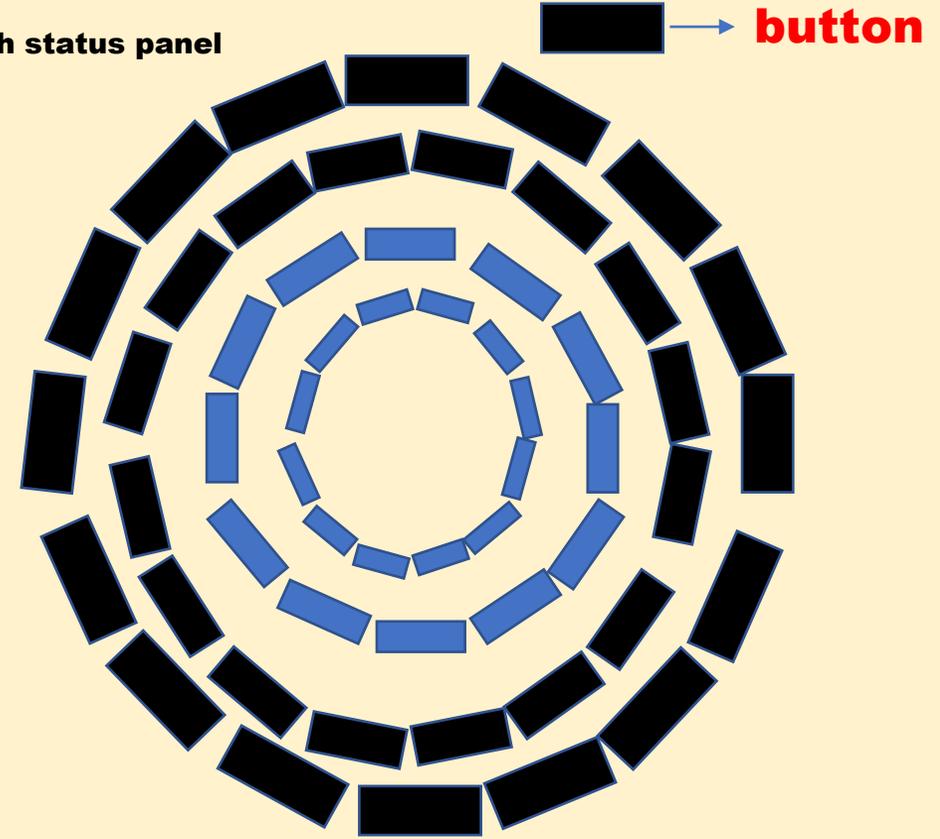
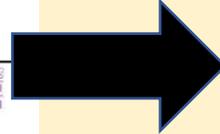
- ROC panel as FVTX Expert GUI
- **Barrel Ladder panel** ←
- Data fiber latch status panel



This ladder doesn't work...



the north



To solve this issue, I wanna set the **button** as like barrel.

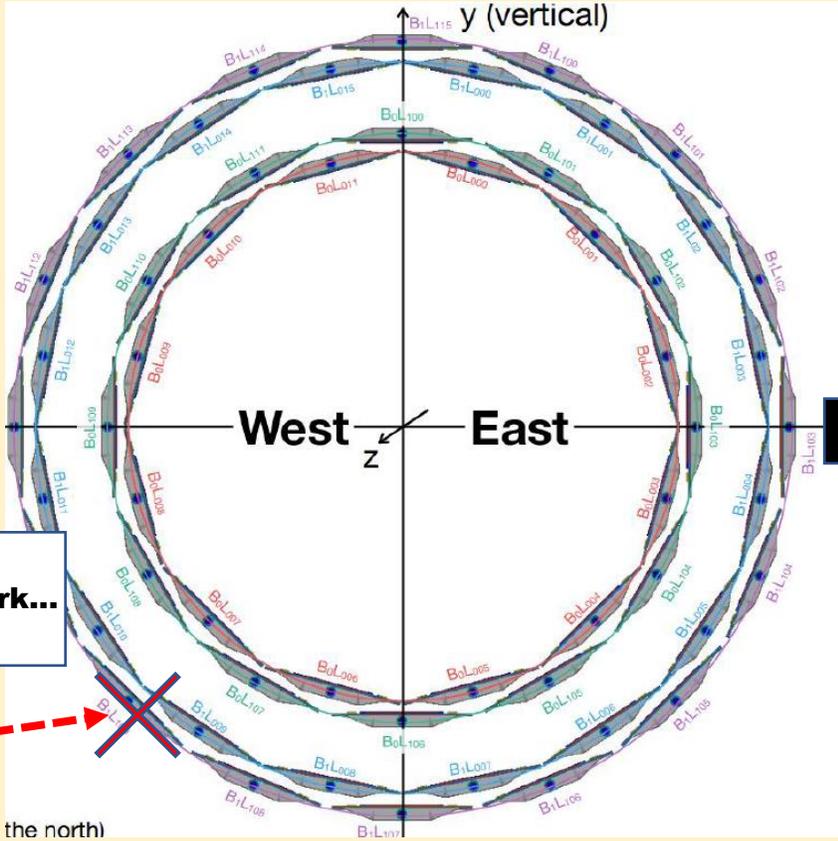
If a bad ladder are found by online monitor , we need to do something, for instance, send reset command to specific ladder .

Barrel ladder panel

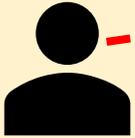
- ROC panel as FVTX Expert GUI

- **Barrel Ladder panel** ←

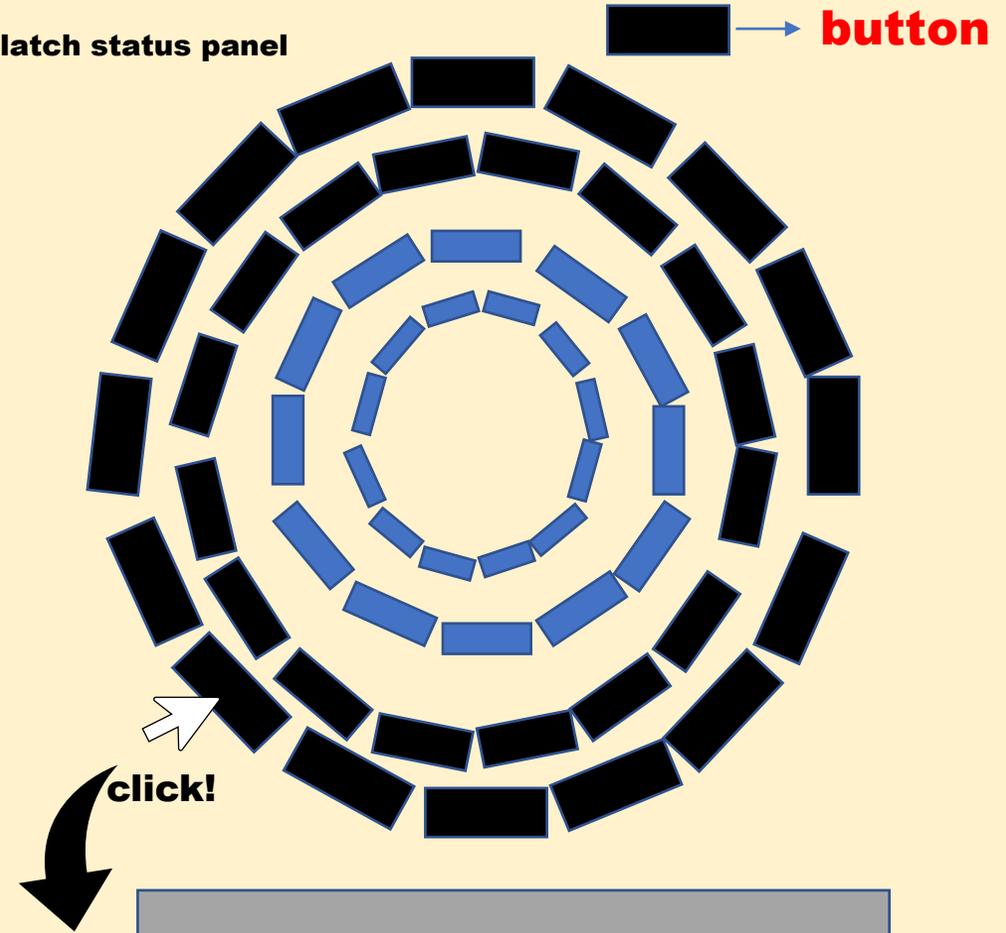
- Data fiber latch status panel



This ladder doesn't work...



If a bad ladder are found by online monitor , we need to do something, for instance, send reset command to specific ladder .



button

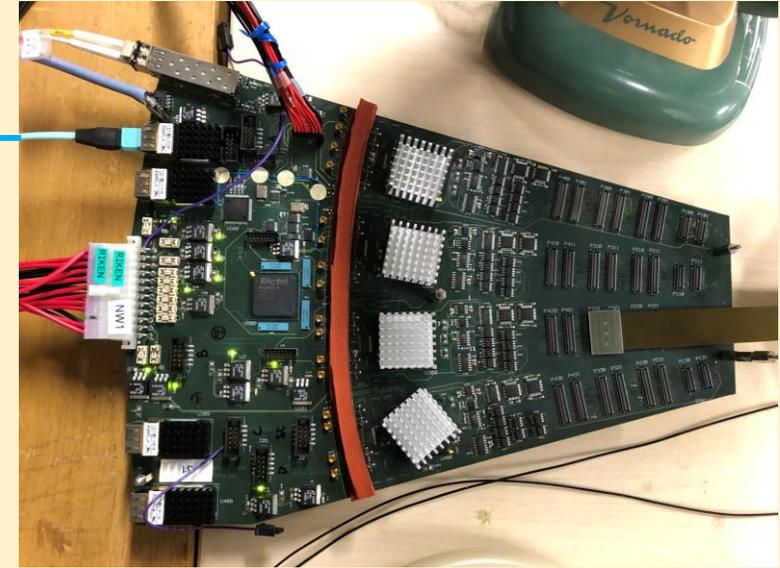
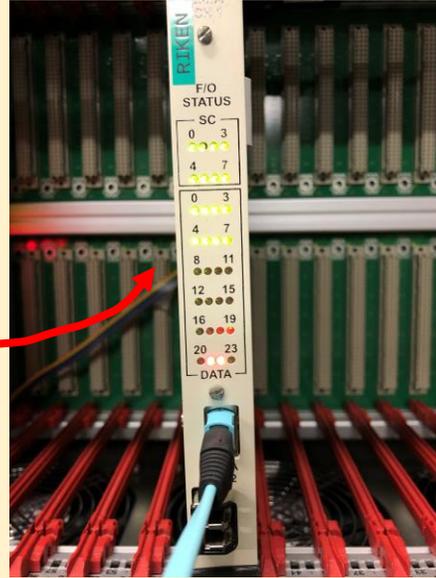
DAC0
DAC1
⋮

pop up half **ladder** control panel

Data fiber latch status panel

- ROC panel as FVTX Expert GUI
- Barrel Ladder panel
- **Data fiber latch status panel** ←

Latch status of a data fiber appears on the LED of a FEM front panel.



Data fiber latch status panel

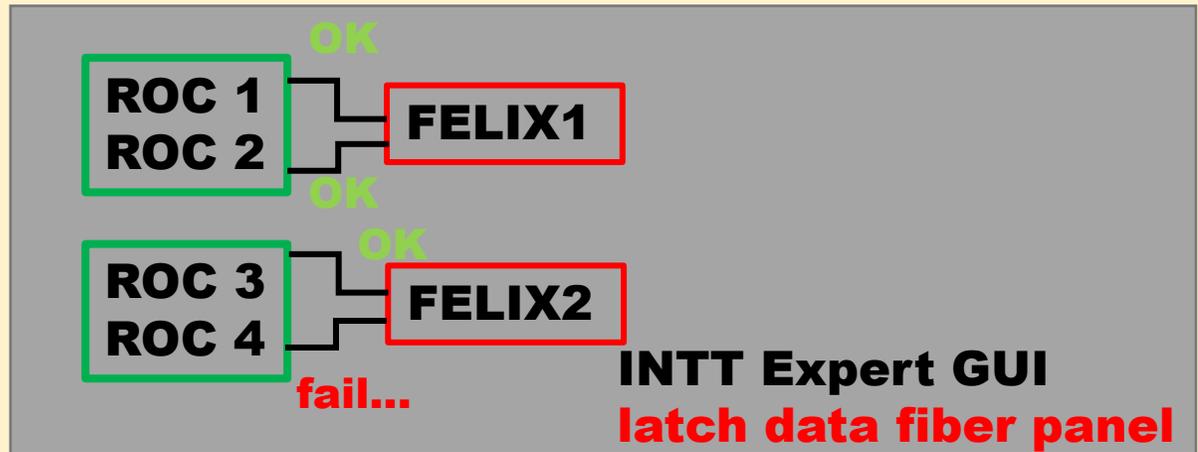
- ROC panel as FVTX Expert GUI
- Barrel Ladder panel
- **Data fiber latch status panel** ←

INTT (FELIX)

But, We can not latch status because FELIX is not equipped LEDs.

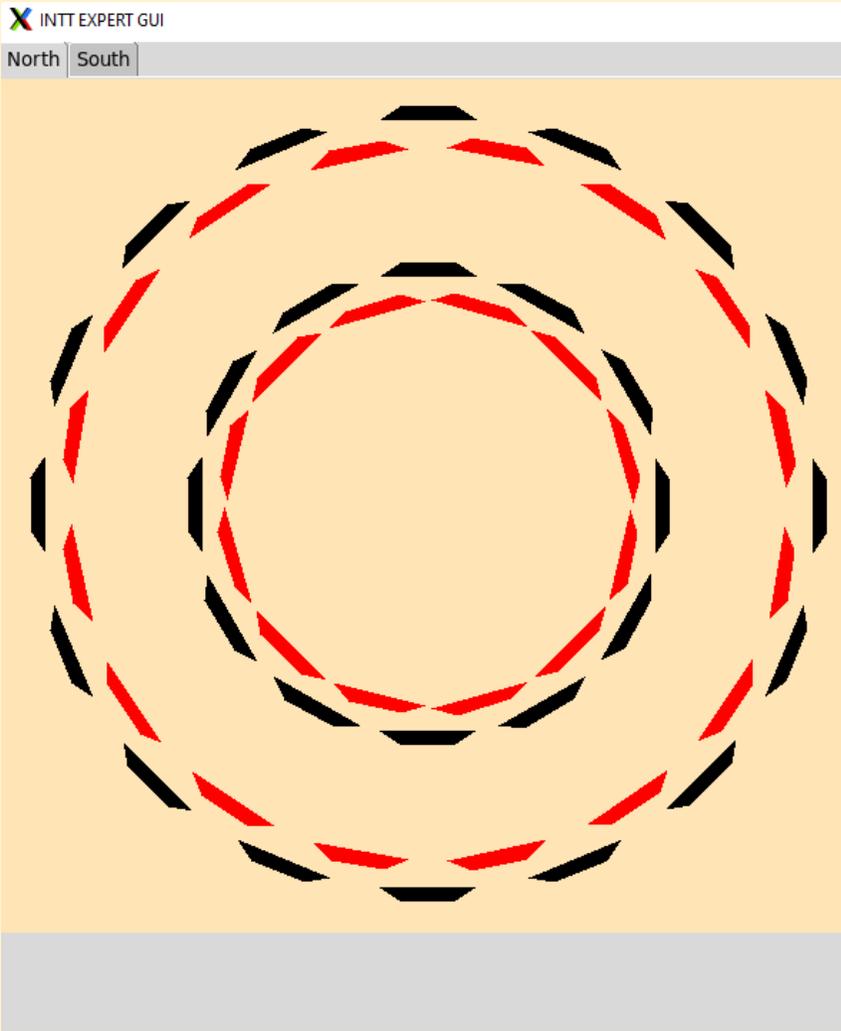
This status is to be monitored in the INTT expert GUI.

The latch data fiber panel is to display the latch status of each data fiber

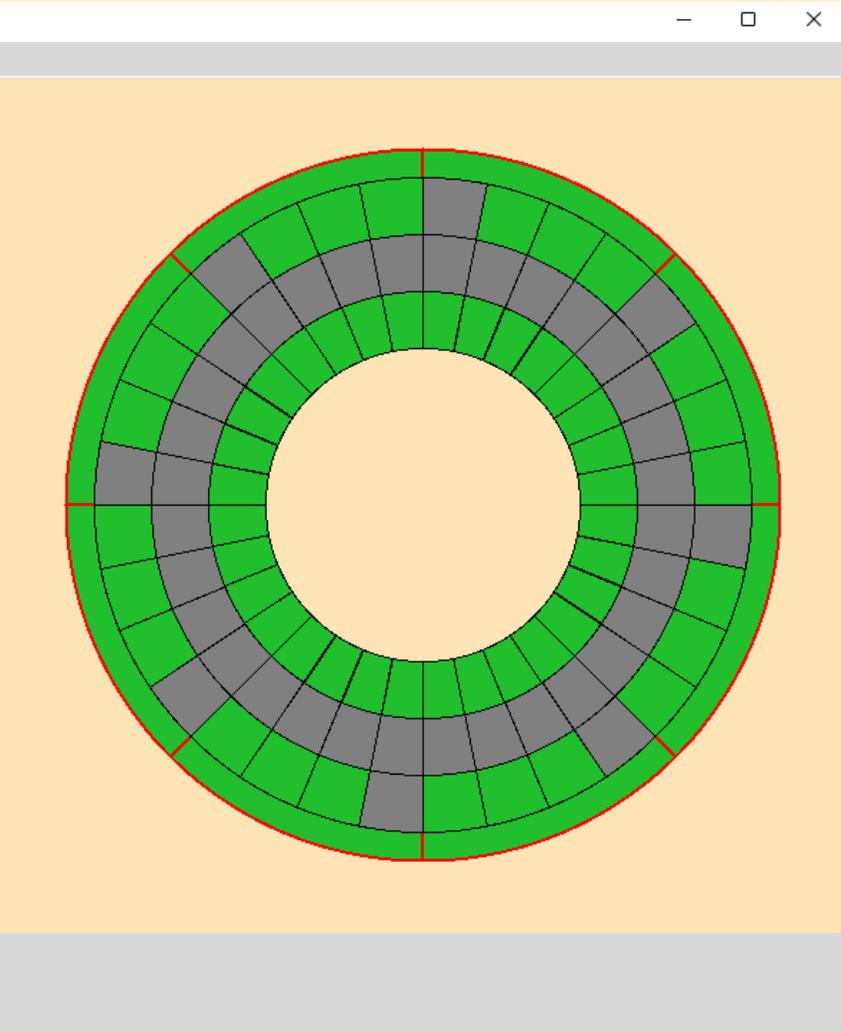


Example

development status at present

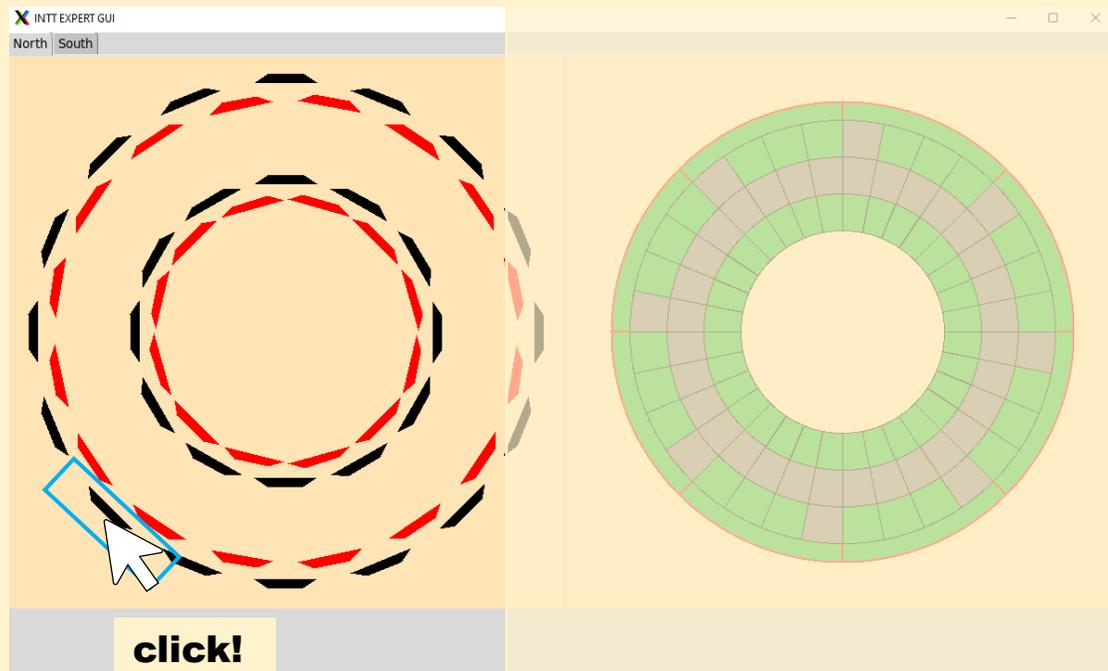


barrel ladder panel



roc panel as FVTX Expert GUI

development status at present



N_B1L109

Chip26	Chip25	Chip24	Chip23	Chip22	Chip21	Chip20	Chip19	Chip18	Chip17	Chip16	Chip15	Chip14
Chip13	Chip12	Chip11	Chip10	Chip9	Chip8	Chip7	Chip6	Chip5	Chip4	Chip3	Chip2	Chip1

side0 side1

	chip_1		chip_2		chip_3		chip_4		chip_5		chip_6		chip_7		chip_8		chip_9		chip_10		chip_11		chip_12		chip_13	
R & B	send	back	send	back	send	back	send	back	send	back																
Vref	0		0		0		0		0		0		0		0		0		0		0		0		0	
DAC0	20		20		20		20		20		20		20		20		20		20		20		20		20	
DAC1	25		25		25		25		25		25		25		25		25		25		25		25		25	
DAC2	30		30		30		30		30		30		30		30		30		30		30		30		30	
DAC3	35		35		35		35		35		35		35		35		35		35		35		35		35	
DAC4	40		40		40		40		40		40		40		40		40		40		40		40		40	
DAC5	45		45		45		45		45		45		45		45		45		45		45		45		45	
DAC6	50		50		50		50		50		50		50		50		50		50		50		50		50	
DAC7	55		55		55		55		55		55		55		55		55		55		55		55		55	
N1Sel	0		0		0		0		0		0		0		0		0		0		0		0		0	
N2Sel	0		0		0		0		0		0		0		0		0		0		0		0		0	
FB1Sel	0		0		0		0		0		0		0		0		0		0		0		0		0	
LeakSel	0		0		0		0		0		0		0		0		0		0		0		0		0	
P3Sel	0		0		0		0		0		0		0		0		0		0		0		0		0	
P2Sel	0		0		0		0		0		0		0		0		0		0		0		0		0	
GSel	0		0		0		0		0		0		0		0		0		0		0		0		0	
BWSel	0		0		0		0		0		0		0		0		0		0		0		0		0	
P1Sel	0		0		0		0		0		0		0		0		0		0		0		0		0	
injSel	0		0		0		0		0		0		0		0		0		0		0		0		0	
LVDS	3		3		3		3		3		3		3		3		3		3		3		3		3	



pop up a **half ladder** control panel

development status at present

CHIP

Channel map

chip 17	1	2	3	4	5	6	7	8
R & B	send	back						
Vref	0							
DAC0	20							
DAC1	25							
DAC2	30							
DAC3	35							
DAC4	40							
DAC5	45							
DAC6	50							
DAC7	55							
N1Sel	0							
N2Sel	0							
FB1Sel	0							
LeakSel	0							
P3Sel	0							
P2Sel	0							
GSel	0							
BWSEL	0							
P1Sel	0							
injSel	0							
LVDS	3							

pop up a **chip** control window for individual strip masking



Chip control window showing a grid of chips (Chip14 to Chip21) with a mouse cursor over Chip17 and the text "click!".

	chip_6	chip_7	chip_8	chip_9	chip_10	chip_11	chip_12	chip_13
Vref	0	0	0	0	0	0	0	0
DAC0	20	20	20	20	20	20	20	20
DAC1	25	25	25	25	25	25	25	25
DAC2	30	30	30	30	30	30	30	30
DAC3	35	35	35	35	35	35	35	35
DAC4	40	40	40	40	40	40	40	40
DAC5	45	45	45	45	45	45	45	45
DAC6	50	50	50	50	50	50	50	50
DAC7	55	55	55	55	55	55	55	55
N1Sel	0	0	0	0	0	0	0	0
N2Sel	0	0	0	0	0	0	0	0
FB1Sel	0	0	0	0	0	0	0	0
LeakSel	0	0	0	0	0	0	0	0
P3Sel	0	0	0	0	0	0	0	0
P2Sel	0	0	0	0	0	0	0	0
GSEL	0	0	0	0	0	0	0	0
BWSEL	0	0	0	0	0	0	0	0
P1Sel	0	0	0	0	0	0	0	0
injSel	0	0	0	0	0	0	0	0
LVDS	3	3	3	3	3	3	3	3

INTT EXPERT GUI

North South

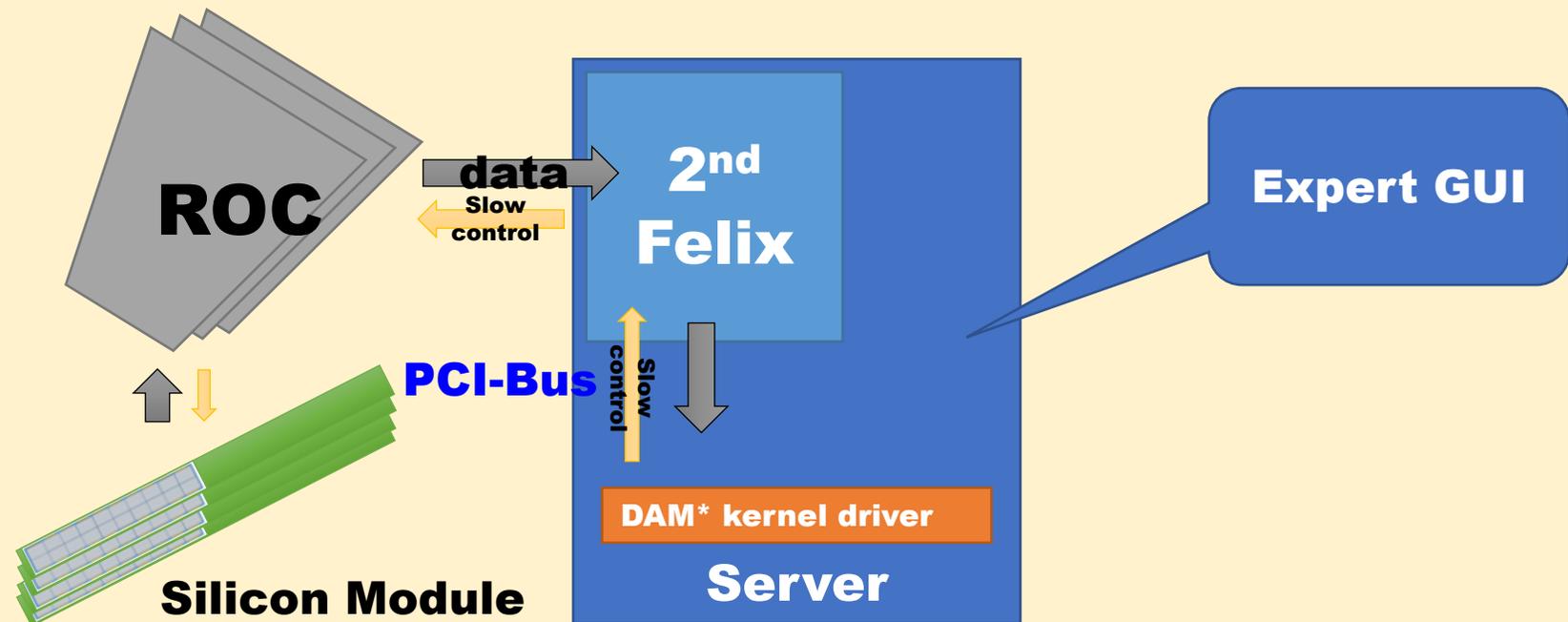
click!



pop up a half ladder control panel

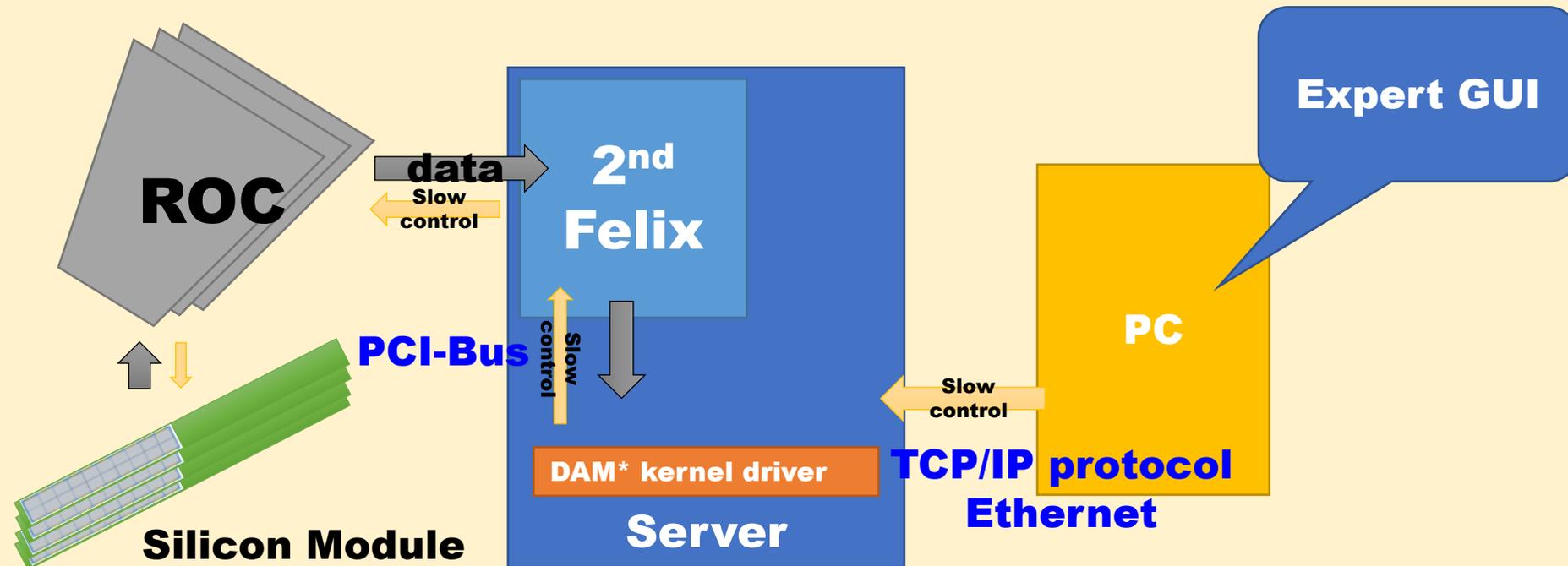
Expert GUI Development Roadmap

1. Conceptual design of INTT Expert GUI (1 week)
2. Development of primary panels (2 weeks)
3. Implementation of slow control commands and readbacks (3 weeks) ← As soon as 2nd Felix server is ready



Expert GUI Development Roadmap

1. Conceptual design of INTT Expert GUI (1 week)
2. Development of primary panels (2 weeks)
3. Implementation of slow control commands and readbacks (3 weeks)
4. Remote Control from external PC (mimic 1008 config)



Thank you!