Ongoing Tasks about Target Software

This page is to collect all ongoing tasks about the target software, particularly LabVIEW. All finalized (established) information should be added to another page. Old information is saved in this sub page.

Learning Materials

We have the following devices as spares. You might use them to learn how to communicate with them in VI.

Devices	Communication	Function
MCC USB-202	MCC Library	Multi-channel voltage DAQ.
MCC E-TC	MCC Library	Multi-channel thermocouple DAQ.
LabJack T4	LabJack Library	Multi-channel voltage DAQ.
Teledyne Hastings THCD-401 x 2	Ethernet	Controller for flow controller/monitor.
LakeShore 218	RS-232	Monitor for temperature sensors (chip resistor & Cernox).

You might try any directory in our Test-VIs repository; https://github.com/uva-spin/Test-VIs . Some of them don't require any hardware but show you how to structure the event loop in VI.

List of Ongoing/Open Tasks

Category	Task	Person /Progress	Note
Magnet PS	We should get the information of Clamped/Reate-Limit/Quench from the Mercury-iPS to the VI.	Completed: Kenichi	Not tested.
Magnet PS	We need a field indicator in the cave.	Anyone?	First design a proper hardware setup.
GV bypass	Need to figure out a way to fill and keep filling with the nose level over the lower heat exchanger chip resistor during DNP production mode. We need the main flow to be around 20 slm during this mode and then only way that will work is if the place where the LHe is coming from is under liquid.		
Fridge valve	When the run valve is PIDing we need it to open gradually to keep the level so that the flow doesn't go too high. For bypass this is not important but for run valve we want to keep the main flow low but replenish the liquid level. Right now, this PID is making the flow shoot up and down is cycles with very high flow.	Kenichi	
GV bypass	The gv-bypass opens too much to get too high of flow when PIDing in pressure. It seems to open and closing a lot at large amplitude. We want this to be much more gradual and try to be conservative on delivering to much flow in spikes. The stability of the PID needs to be improved. Also, for manual control the precision of software control doesn't match the minimal step size, we should update that.	Kenichi	
PDP	Make auto switching through each NMR channel.	90%	Add switching parameters.
PDP	Remove unused parts of the VI.		
PDP	Add calculators for t1.	Kenichi	Not PDP but data summary page?
Alarm	We also need either a webpage or a script that says what to do in case of each of these alarms.		Make a trouble-shooting page.
PDP	Once we have the UVA PDP made to our needs we need to do that same type thing for the LANL system so we can use it.		

New VI	Make a set of VIs for RF modulator, R&H xyz.	Farooq /Dustin	
New VI	Make a set of VIs for RF modulator, Agilent xyz.	Farooq /Dustin	
Heat tape	Test the RS-485 communication with the power controller (Fuji Electric PXF4). Create a VI(s) to read the present status and change the set point.	Chatura	
New VI	Make a set of VIs for Pfeiffer Vacuum OmniControl 200.	Farooq /Kenichi	

Recently Completed Tasks

Category	Task	Person	Note
PDP	Add calculators for TE	Completed	Implemented in data summary page.
Magnet PS	We need a power-indicator on the shim power supply. These are the shim-coil-power indicators.	Completed.	
Magnet PS	Need to be able to ramp-down 0A with 0.5A/m rate, so there should be a preset for that.	Completed.	
Magnet PS	Need a manual override in the VI.	Completed.	
PDP	Import the readings of He4 & He3 pressures from CCP.	Completed.	Over TCP/IP.
Alarm	We need a target alarm handler that allows us to turn on or off alarms from some main GUI. We should be able to silence and initiate whatever alarms we want at any given time based on what is going on.	Completed.	There is a configuration webpage since Aug. 2023.
GV bypass	Add to pid on 1000/fridge pressure too.	Completed.	The 1000 sensor is used when the pressure is >100 Torr.

Meeting Materials

New materials should be posted on SeaQuest DocDB.

Date	Title	Presenter	File
10 Aug 2021	VIs for MCC E-TC	Kenichi	labview_20210810.pdf
25 Aug 2021	Update on LN2 Bos	Vibodha	SCMeetig_August25.pptx
25 Aug 2021		Zulkaida	
08 Sep 2021	Step count ADC length relationship	Vibodha	Lifter Measurements_Vibodha.pdflocal disk
15 Sep 2021	Updates on slow control rack and target computer	Kenichi	labview_20210915.pdf
22 Sep 2021	MKS 670 + PDP and LakeShore 218 + GPIB	Kenichi	labview_20210922.pdf
29 Sep 2021	VIs for MCC E-TC	Kenichi	labview_20210929.pdf
13 Oct 2021	VIs for MCC E-TC	Kenichi	labview_20211013.pdf
27 Oct 2021	Lifter Vi update	Vibodha	Lifter Vi updates_1027.pdf
03 Nov 2021	MCC E-TC & Slow Control Data Monitor	Kenichi	labview_20211103.pdf
10 Nov 2021	Slow Control Data Monitor & MCC USB-202	Kenichi	labview_20211110.pdf
17 Nov 2021	Slow Control Data Monitor & MCC E-TC with long TC	Kenichi	labview_20211117.pdf
24 Nov 2021	Some list about pressure sensor	Zulkaida	list.txt

24 Nov 2021	Slow Control Data Monitor, NMR Computer & MCC USB-202 with TC	Kenichi	labview_20211124.pdf
01 Dec 2021	NMR computer & MKS 615	Kenichi	labview_20211201.pdf
01 Dec 2021	Lifter VI	Vibodha	Lifter Vi _Vibodha_12-01-2021.pdf
08 Dec 2021	Slow-Control System, NMR Computer & MKS 615	Kenichi	labview_20211208.pdf
22 Dec 2021	Test of MKS 615 with LN2 Test of MCC E-TC + Long TC in LN2	Kenichi Kenichi	labview_20211222.pdf labview_20211218.pdf
19 Jan 2022	TCP/IP communication of spill info, N of sweeps/measurement on PDP	Kenichi	slow_cont_20220119.pdf
26 Jan 2022	PDP Readout Test	Kenichi	slow_cont_20220126.pdf
16 Feb 2022	TCs for magnet coils and others; Rearrangement of KF connection	Kenichi	slow_cont_20220216.pdf
02 Mar 2022	Cryo Control Panel	Kenichi	slow_cont_20220302.pdf
09 Mar 2022	TCs for magnet coils; Cryo Control Panel	Kenichi	slow_cont_20220309.pdf SC_Meeting_2022March9.pptx
16 Mar 2022	Cryo Control Panel	Kenichi	slow_cont_20220316.pdf
23 Mar 2022	Cryo Control Panel	Kenichi	slow_cont_20220323.pdf
30 Mar 2022	Run+Bypass Valve in CCP	Kenichi	slow_cont_20220330.pdf
06 Apr 2022	MKS670 and MaxiGauge in CCP	Kenichi	slow_cont_20220406.pdf
20 Apr 2022	LCW flow meter, TC, CCP	Kenichi	slow_cont_20220420.pdf
27 Apr 2022	Measurement of NMR noise level Logging, Automated alarm	Kenichi Kenichi	slow_cont_20220425_NMR.pdf slow_cont_20220427.pdf
04 May 2022	QT HMI	Kenichi	slow_cont_20220504_QT_HMI.pdf
11 May 2022	QT HMI, Chart-axis control	Kenichi	slow_cont_20220511.pdf
25 May 2022	TCs; Cables for MKS 615	Kenichi	slow_cont_20220525.pdf
01 Jun 2022	Magnet PS Shim Relay	Kenichi	slow_cont_20220601.pdf
27 Jul 2022	Logging of roots-pump PLC; Pressure-sensor locations	Kenichi	slow_cont_20220727_location.pdf
15 Feb 2023	HiPace 1200 Turbo-Pump (back-up)	Farooq	HiPace1200 Turbo-Pump (back-up).pdf
15 Feb 2023	Target Lifter procedure and microwave updates	Vibodha	SC_2_14_2023.pdf
11 Oct 2023	Lessons Learned in Magnet Slow Cooldown	Kenichi	slow_cont_20231011.pdf
12 Feb 2024	NMR Data File & Analysis Macro	Kenichi	target_20240212_PDP.pdf