HALL C PLC TASKS REPORT (07/12/2018 – 07/18/2018)
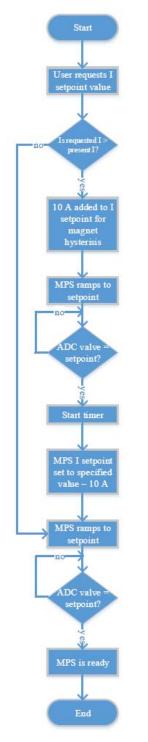
Hall C - PLC Task List

Item	Description	Priority	Primary Person	Start Date	Status	Comments	Suggested Duration (days) by Hall C
1	HMS & SHMS Dipole field regulation routine	1	Pablo	14-Jun-18	In Progress	PLC Code in progress	10
2	New NMR communication through PLC to PSU	1	Brian	10-May-18	In Progress	Ordered magnets to test magnetic field probe in NMR	5
3	Test Ethernet vs Controlnet interface.	1	Pablo	7-Jun-18	Completed	Checked by Steve(w/o redundancy modules)	N/A
4	Swapping of Controlnet by Ethernet modules in SHMS	1	Pablo Brian	3-Jul-18	Completed	EN2T and ENBT modules for Q1 and HX PLC chassis installed and running without issues. Task completed successfully on 7/13/2018	N/A
5	Add spectrometer rotation electric break control	2	TBD	-	Waiting	Waiting for Hall C to determine and order parts	5
6	Add HMS Spectrometer Vacuum to controls	2	Tyler	29-May-18	Waiting	Hall C must decide which type of vacuum gauge will be used and procure it.	2
7	Data Logging upgrade, install and make operational	2	Pablo	-	Not started	210 SHMS HMI screens and 63 HMS HMI screens running on FTVIEW at Skylla and opened by Mike Fowler. To do this task DSG needs access to FTVIEW SE. DSG prefers EPICS data logging.	20
8	Develop "on loop" current regulation routine for quads' (3) PSU.	2	Amanda	14-Jun-18	In Progress	PLC program completed; program will be tested against simulation Python program which will simulate Danfysik power supply.	10
9	Tune valve responses	2	TBD	-	Not started	Need more information	5
10	Wire UPS status to controls	2	Tyler	30-May-18	Waiting	Waiting to download PLC code in HMS and SHMS PLC controllers	2
11	Modify SHMS shutter not in place status	2	Amanda	-	Waiting	Mike will talk to Steve on implementing wire loop to determine "shutter in-place" status. Email to request status was sent to the mailing list.	1
12	Add HMS shutter controls and status	3	TBD	-	Waiting	Mike will talk to Steve on implementing wire loop to determine "shutter in-place" status. Email to request status was sent to the mailing list.	1
~~13~~	~~Alarm notification to on-call staff~~	~~3~~	~~TBD~~	-	~~Not started~~	Should be done by EPICS	4
14	Add HMS quadrupoles hall probe readouts to PLC	3	Tyler	-	In Progress	Email sent requesting information on taks, probes and availability of spare probe	3
15	Change SHMS LVDT I/O module from Differential to Single ended	3	TBD	-	Not started	Need information about available hardware	4
16	End of life for Windows 7 upgrade to windows 10 (next year?)	4	Pablo	-	In Progress	RSLOGIX5000 upgraded to v20 on Skylla. Computer center needs to upgrade Skylla to windows 10.	10
17	Upgrade SHMS PLC from version 16 to version 20	1	Brian Pablo Amanda Tyler	3-Jul-18	Completed	SHMS PLC running with all firmware and software upgrades without problems. Task completed on 7/13/2018	N/A
18	Upgrade HMS PLC from version 16 to version 20	N/A	Pablo Brian Tyler	19-Jul-18	In Progress	Redundancy modules (SRM) and Communication modules (ENBT and CNB) have to be upgraded in order to upgrade HMS plc to v20	N/A

The tasks added recently to the Hall C PLC task list are shown in blue font color

- SHMS PLC system successfully upgraded from RSLogix 5000 version 16 to version 20.
  - Required software updates installed on the PC *skylla7*.
    - RSLogix 5000 v20.
    - RSNetwork v27 (used to set up ControlNet configurations).
    - ControlFlash v15 (used to upgrade module firmware).
  - Firmware upgraded for PLC controllers and modules in Primary and Secondary PLC chassis.
    - Controller 1756-L62/B – from 16.81 to 20.58
    - ControlNet 1756-CN2/B – from 20.011 to 20.022
    - Ethernet module 1756-EN2T/B – from 2.007 to 4.008
    - Redundancy module 1756-RM/A – from 2.005 to 3.004
  - Updated PLC's project file from RSLogix 5000 v16 to v20
    - Re-enabled redundancy synchronization between Primary and Secondary chassis.
- ControlNet modules (CN2B) successfully swapped with Ethernet modules in the SHMS Q1 and Heat Exchanger (HX) I/O Chassis.
  - .ACD PLC program modified to add EN2T module to Q1 chassis and ENBT to HX chassis.
  - Firmware version for Ethernet modules upgraded:
    - Q1's EN2T to v5.8
    - HX's ENBT to v6.6.
  - Ethernet modules configured in the .ACD project file under existing Ethernet network running on the Primary/Secondary PLC chassis.
  - After all upgrades, .ACD file successfully downloaded to PLC and run with no problems.
  - Copy of the SHMS v20 ACD file was given to Mike Fowler to run on *skylla7*.
- Current monitoring loop routine developed in ladder logic for HMS's Q1.
- Testing started on DSG-PLC of first version of Quadrupoles' current regulation PLC routine.
  - Danfysik power supply simulation program for debugging and testing Hall C PLC programs is under development.
- Installed D-sub connector to terminal block adapter for wiring of APC UPS monitoring.
- DSG is waiting on more information and/or cabling work from Hall C on several tasks.
  - Spectrometer vacuum controls
  - HMS & SHMS shutter controls
  - UPS status read-back
  - spectrometer break controls
  - Valve tune responses
  - SHMS LVDT I/O module tasks.
- Flow chart for current monitoring loop generated.

Flow chart for Hall C magnets' current monitoring loop