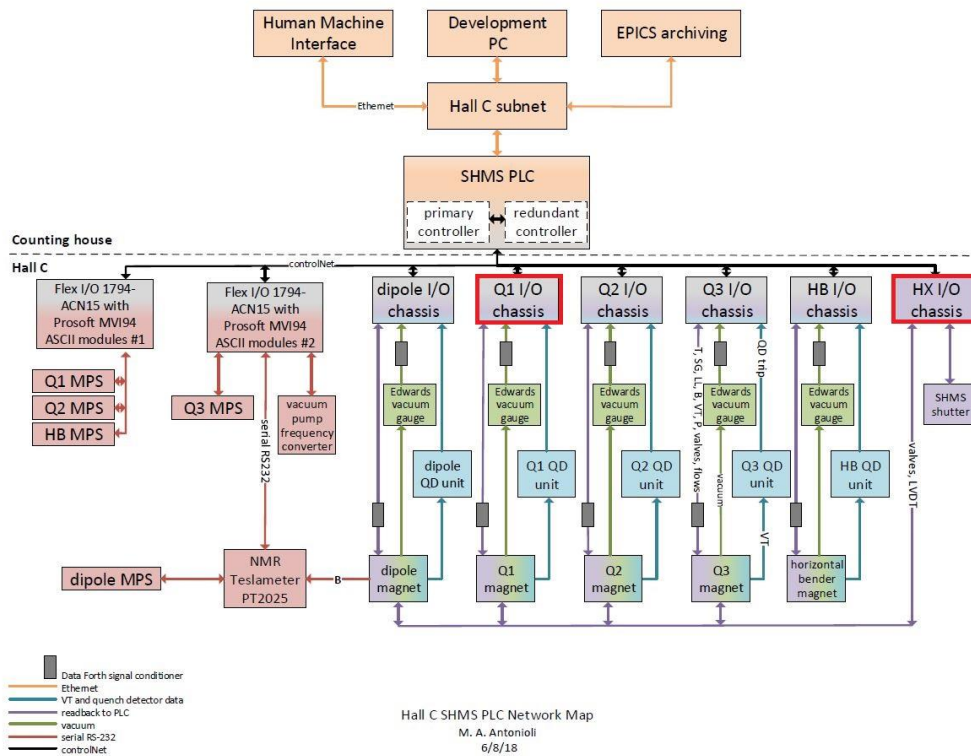


Summary

Hall C

- After swapping ControlNet modules in the SHMS Heat Exchanger (HX) PLC chassis and Q1 PLC chassis with Ethernet modules (ENBT and EN2T), communication issues prompted ControlNet modules to be reinstalled.
 - * Swapped the two ControlNet modules with Ethernet modules (ENBT on HX, EN2T on Q1).
 - * Configured SHMS PLC project files and Ethernet drivers for the ENBT and EN2T.
 - * Could not communicate to HX PLC after installing ENBT module.
 - Verified proper Ethernet switch ports, connections, MAC address, and IP address.
 - Attempted manual IP setting assignment through DHCP software with a direct Ethernet connection to module.
 - * Q1's EN2T Ethernet module connected to the network (able to ping it and it showed in RSLinx), but gave an error in the PLC's .ACD file.
 - * ControlNet modules for Q1 and HX PLC chassis were reinstalled and PLC program reverted to previous version.



SHMS Network Topology Map.

HX and Q1 Chassis where ControlNet modules were swapped for Ethernet modules are boxed in red.

- APC relay card pre-wired to external connector before installation in UPS.
 - * Labeled conductors on ferrule end of cable and on relay-card terminal block.
 - * Attached ferrules to terminal block.
- Relay card installed in APC UPS.
 - * Relay card left in default configuration, but configuration can be changed at any time without affecting UPS operation.



Detector Support Group

Weekly Report, 2018-07-04

- During weeklong test, SBC maintained connection with NMR for duration of test when polling at 1 Hz.
- Python code to interface with NMR under development.
 - * Changed Ethernet/IP Python package from *cpppo* to *pycomm3*, as *pycomm3* is easier to use for reading and writing PLC tags.
 - * Code will use a state machine to keep track of status of instrument and handle resets better.
- Flow chart completed for currently used HMS and SHMS Dipole regulation routine that uses the RG-2040 regulation module.
- Flow chart completed for new PLC routine that will take place of RG-2040 regulation module when PT2026 NMR Teslameter is used.
- Flow chart completed for current monitoring loop.
 - * User inputs current set point, program sets power supply to ramp past user-input current to a value determined by magnet hysteresis, program waits a set amount of time, program ramps power supply down to the user-input value.

SVT

- Bad HFCB Temperature readings (R3 M1 and M11) debugged after MVT was removed for chiller re-work.
 - * Moving cable at LIC end seems to have fixed bad HFCB temperature.
- Twelve HTSB2 boards successfully tested.
- Populating of Patch Panel board #1 completed.
- Four cables (two humidity and two temperature) fabricated for testing Patch Panel #2 boards.
- Patch panel conversion completed.
 - * Disconnected and terminated all RTD, humidity, and environmental cables.
 - * Installed new boards on the patch panel and connected the new terminated connectors to the PCBs.

RICH

- Fitting machined to install Easidew moisture sensor in nitrogen exhaust line.

RTPC

- Informed the RTPC group to forward the gas system design to Hall B Engineering for a design authority to be assigned.

HTCC

- Discussed procedures to prevent potential damage to the HTCC PMTs in case of emergency release of helium in the hall.
 - * Increase flow.
 - Max flow of HTCC's gas system is 50 slm of N₂/Air or 38 slm of CO₂.

PXI

- Krohn-Hite DC source and PXI ADC input modules calibrated.
 - * Krohn-Hite calibrated with Hewlett-Packard multimeter, as its calibration was out-of-date.
 - * PXI ADC modules calibrated using newly calibrated Krohn-Hite using NI's calibration program.



Detector Support Group

Weekly Report, 2018-07-04

Antonioli, Mary Ann
Vacation

Bonneau, Peter
Vacation

Campero, Pablo
Hall C

- For HMS and SHMS Dipole field regulation PLC routine:
 - * Completed flow chart for currently used regulation routine that uses the RG-2040 regulation module.
 - * Completed flow chart for new PLC routine that will take place of RG-2040 regulation module if PT2026 NMR Teslameter is used.
 - * Tested function block diagram add-ons in RS-Logix5000.
- Swapped two ControlNet (CN2/B) modules, one in the SHMS Q1 and the second in the Heat Exchanger (HX) PLC chassis, with Ethernet modules (ENBT on HX, EN2T on Q1).
 - * Ran Ethernet cable from network switch to Q1 and HX PLC racks.
 - * Configured SHMS PLC project files to use the Ethernet modules.
 - Added Ethernet modules under SHMS Ethernet network
 - Added I/O modules with proper configurations, names, engineering units and revision numbers.
 - * Configured Ethernet drivers on RSLinx to monitor proper module connections.
 - * Installed Ethernet modules in the two racks Q1 and HX.
 - * Could not communicate to HX PLC chassis after swapping ControlNet module with ENBT module.
 - Net LED indicator on module's front display was not blinking.
 - Verified proper Ethernet switch ports and connections, MAC address, and IP address.
 - Swapped Ethernet cables to eliminate bad cable as cause of issues; still no communication.
 - Attempted to try manual IP setting assignment through DHCP software with a direct Ethernet connection to module.
 - None of the mentioned step worked, problem not solve.
 - * Q1's EN2T Ethernet module connected to the network with no problem (able to ping it and it showed in RSLinx), but we found issues in the PLC's .ACD file after it was connected and run, status show error connections.
 - * ControlNet modules for Q1 and HX PLC chassis were reinstalled and PLC program reverted to previous version.
- Generated Hall C weekly report with the updated status of tasks performed by DSG.
- Updated DSG-Hall C PLC task list.

- **Calibrated PXI ADC input modules, with Brian.**
 - * **Successfully ran Hewlett Packard multimeter on self-test mode.**
 - * **Calibrated Krohn-Hite Model 523 DC source calibrator by connecting to calibrated Hewlett Packard multimeter.**



Detector Support Group

Weekly Report, 2018-07-04

- * Connected Krohn-Hite Model 523 DC source to each channel of the PXI's ADC modules and ran test program.

Eng. Brian

SVT

- Debugged bad HFCB Temperature readings (R3 M1 & M11) after MVT was removed again for chiller re-work.
 - * Found that voltage was good on HFCB, but bad at patch panel end.
 - * Moving cable at L1C end seems to have fixed it.
- Successfully tested 12 HTSB using connector to ferrule cable adapters Mindy made.

Hall C

- Installed eMMC flash memory instead of microSD on SBCs.
- Changed Ethernet/IP Python package from *cpppo* to *pycomm3*, as the latter is much easier to use for simple reading/writing tags.
- SBC maintained connection with NMR for 1 week, when polling at 1 Hz.
- Starting working on Python code to interface with NMR.
 - * Code will use a state machine to keep track of status of instrument and better handle resets.

Hoebel, Amanda

Hall C

- Made current monitoring loop diagram.
 - * User sets current and program tells power supply to ramp past current to a certain value determined by magnet hysteresis.
 - * Program then waits a certain amount of time and ramps the power supply down to the value set by the user.
- Swapped ControlNet modules with Ethernet modules with Brian, Tyler, and Pablo.
 - * Could not ping ENBT Ethernet modules.
 - * Tried using one Ethernet and one ControlNet and project would not work.
 - * Reverted system to two ControlNet modules.

Jacobs, George

Vacation

Leffel, Mindy

SVT

- **Sloco** Patch Panel.
 - * Finished populating patch panel board 1.
 - * Fabricated four cables (two humidity and two temperature) for testing patch panel 2 boards.

Hall C

- For APC UPS relay card:



Detector Support Group

Weekly Report, 2018-07-04

- * Labeled conductors on ferrule end of cable.
- * Labeled terminal block, one to one, with D-sub connector.
- * Attached ferrules to terminal block.
- * Tested to confirm proper placement of conductors.

Lemon, Tyler

Hall C

- Installed relay card in APC UPS.
 - * Relay card will allow monitoring of UPS that provides backup power to all HMS PLC chassis and SHMS PLC controller chassis.
 - * Relay card left in default configuration, but configuration can be changed at any time without affecting UPS operation.
 - * Connector pre-wired to card by Mindy so it can be cabled to PLC at any time without uninstalling it from the UPS.
- Unsuccessfully installed Ethernet modules in SHMS HX and Q1 I/O Chassis in place of ControlNet module.
 - * Neither Ethernet module could be successfully set up.
 - * I/O chassis and program reverted to use ControlNet until Ethernet modules can be debugged using DSG's development PLC.

McMullen, Marc

RTPC

- Met with Carlos, George, and Brian on JLab Pressure system requirement.
 - * Reinforced the need to for the group to forward the design to Hall B Engineer so that a design authority could be assigned. This will prevent future delays.
- Machined fitting for **RICH** Easidew moisture sensor.

HTCC

- Discussed procedures for emergency release of helium and the potential damage to the HTCC PMTs with Brian and the system owner.
 - * The max flow of the system is 50slm of N₂/Air or 38slm of CO₂.
 - * The detector owner needs to provide information on what needs to be done in case of an emergency and how damage to the detector can be mitigated using the purge system.
 - * We can then work on solutions to increase the flow during the emergency.

SVT

- Complete patch panel conversion.
 - * Disconnected and terminated all RTD, humidity, and environmental cables.
 - * Installed new boards on the patch panel and connected the new terminated connectors to the PCBs.