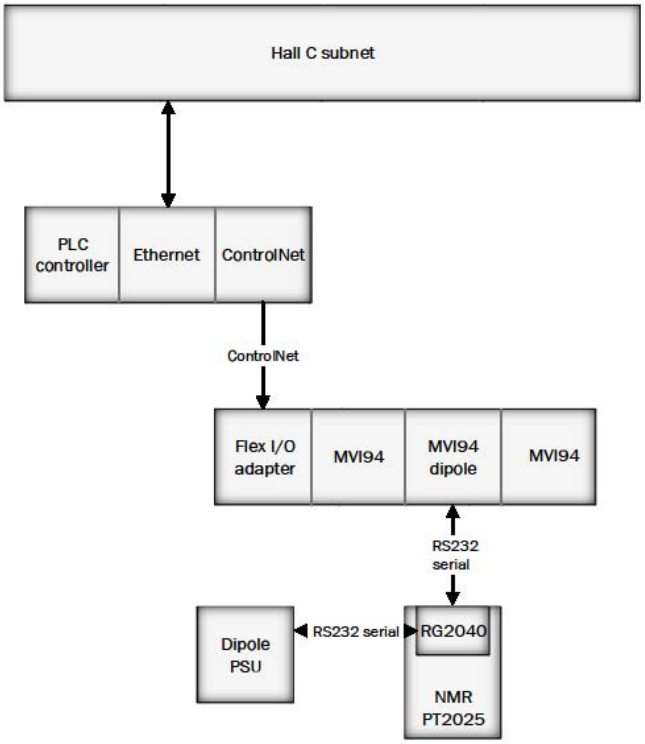
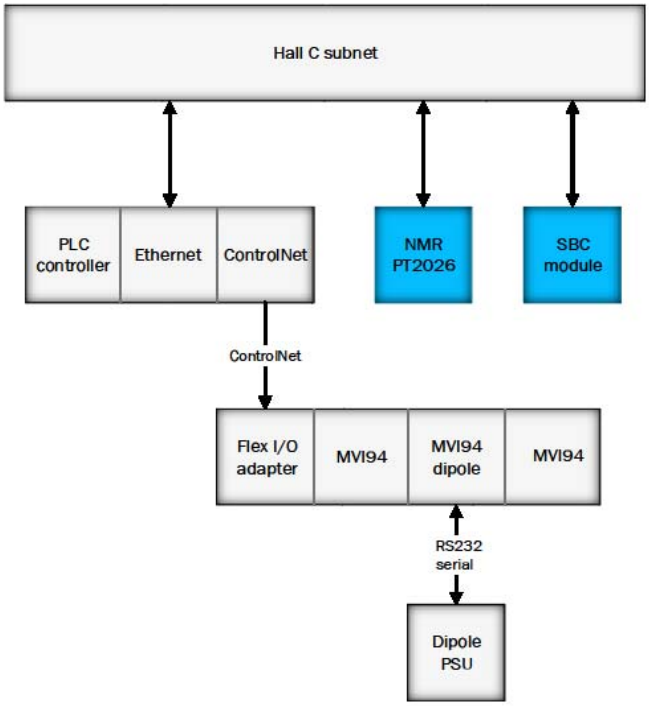
HALL C PLC TASKS REPORT (06/20/2018 – 06/27/2018)

- Started flow diagram for SHMS dipole regulation PLC routine, based off function block diagram draft to show sequence of field regulation desired.
  - Select input source for **B** (manual or calculated), define max/min of **B**, select probe type, calculate I(**B**), set PSU, readback **B**.
- Investigated command functions used in RG2040 regulation module so that PLC code could be developed in a similar fashion.
- Two Visio drawings were created:
  - Current dipole NMR communication configuration for SHMS and HMS.
  - Proposed dipole NMR communication configuration for SHMS and HMS.



Current Hall C Dipole NMR Configuration for SHMS and HMS
M. A. Antonioli
6/22/18



Proposed Hall C Dipole NMR Configuration for SHMS and HMS
M. A. Antonioli
6/22/18

- Configured Ethernet (ENBT and EN2T) modules for a test where the Ethernet modules will replace two ControlNet (CN2/B) modules in the SHMS Q1 and Heater Exchanger (HX) PLC chassis.
  - IP address assigned on the Hall C subnet for the two Ethernet modules.
    - Q1 PLC chassis: Ethernet module EN2T (129.57.165.17)
    - HX PLC chassis: Ethernet module ENBT (129.57.165.18)
  - Ethernet modules connected to the DSG-PLC chassis to configure IP ports and change firmware versions.
    - Firmware versions were not compatible with RS-LOGIX v16.
  - Proper firmware version and EDS files for the Ethernet modules configured.
    - EN2T module with firmware version 2.07
    - ENBT module with firmware version 4.04.
  - RSLinx used to test revision and configuration for both Ethernet modules.
  - New version of SHMS PLC program created to include the modifications made to add two new Ethernet modules.
    - New version of ACD PLC program created based on current PLC program, which is running on the SHMS PLC controller.
    - I/O configuration modified by adding two Ethernet modules in PLC program under the Ethernet network that is currently used by the PLC controller chassis.
    - Fourteen I/O modules configured for Q1 (x9) and HX (x5).
    - All I/O modules verified to have the same configurations, revision numbers, RPI /RTS, names and engineering units as the modules used with the ControlNet modules.
- Weekend test of SBC concluded.
  - SBC maintained communications with NMR over the course of the weekend (polling instrument temperature at 1Hz).
- Ability to power-on NMR with Aux connector verified after AC has been reset.
- For UPS relay card, 27 conductor D sub to ferrule cable fabricated and tested.