Detector Support Group
Weekly Report, 2016-06-22

Ongoing Projects

Hall B

Drift Chambers
- Installation planned for mid-July.
  - ✶ Concern: gas manifolds not yet installed.

HTCC
- Yuri Sharabian informed:
  - ✶ OSP is a must for DSG to work on detector.
  - ✶ DSG is not expert with Nitrous Oxide (N_2O) gas systems.
    - ▪ Hence, DSG *will not* instrument gas system for N_2O.

SVT
- Yuri Gotra is generating OSP.
  - ✶ OSP is a must for DSG to work on detector.
- Update of Hardware Interlock System to LabVIEW 2015 completed.
- Move to Hall B planned for mid-July.

RICH
- Cooling system layout for electronics on forward carriage top deck approved by Bob Miller and Bert Manzlak.
- Testing and analysis of mirrors 2C—5C in progress.
- Calculations for pressure system and selected relief valves by Saptarshi needs approval.

MicroMegas
- OSP template e-mailed to CEA Saclay.

Forward Tagger
- Setup with tracker in progress.
- OSP approved for commissioning.

Magnet Slow Controls
- Josh Ballard submitted resignation to separate on 06/30/2016.
  - ✶ Nick Sandoval helping with project.

HDIce
- Software to test RF Attenuation/Switching Unit under development.
- Current shunt being integrated into NMR program.
- LabVIEW sub-VIs being developed and tested.
- No progress on Mathematica.

Hall D

PLC Systems
- Documentation being reviewed and updated.

Antonioli, Mary Ann

Hall B

HDice

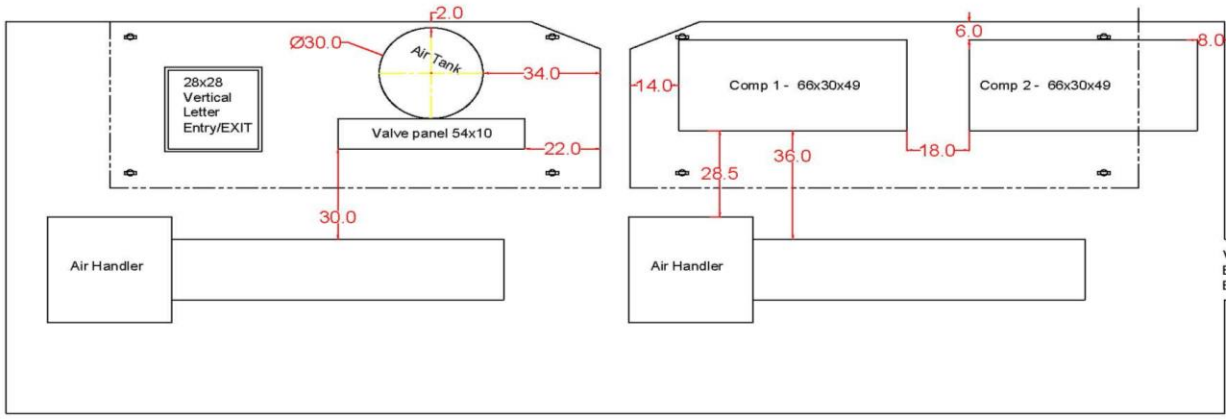
- Began reviewing Pablo's code for the Mercury*iPS* magnet power supply.
- Set up RF Attenuation/Switching Unit testing in EEL231.
- Continued writing LabVIEW code to test RF Attenuation/Switching Unit.
  - ✶ Continued debugging test for reading cable and termination keys, and attenuator A.
    - Testing sub-VI for testing NMR/AFP switch.

Arslan, Sahin

Hall B

- Discussed with George pipe layout and valve panel location in gas shed for **MVT**.
  - ✶ Measured location size and began AutoCAD drawing.
- Measured EEL125 and drew it in AutoCAD for **FT**'s ODH calculation.
- Compressor and tank layout (see figure below) for **RICH** on Forward Carriage top deck approved by Miller and Manzlak.

Lay Out for Rich Air Compressors and Air Tank



Sahin Arslan
Detector Support Group

- Replaced N2 gas bottle for SVT.

Hall D

- Discussed alarm types and status at tech meeting.

Bonneau, Peter

Hall B

HDice

- Wrote LabVIEW subroutines to read real-time data from CT-box during NMR scans and integrate current measurements into lock-in amplifier data stream.
- Debugging lock-in amplifier subroutines that determine acquisition rate during an NMR sweep.
- Wrote interface code to enable use of CT-Box Ethernet interface.
- Reviewed/tested DIO module responses to termination and cable identification keys on chassis front panel of RF Attenuation/Switching Unit.

SVT

- Upgraded Hardware Interlock System and user interface computer to LabVIEW 2015.
- Reviewed sensor inventory.
  - ✶ Thirty-one useable sensors available, of which *only* 4 are hybrid.
    - Hence, can fabricate only two modules.

Hall D

- Noted FDC chiller interlock trips and EPICS signals from FDC chiller are not updating.

Campero, Pablo

Hall B

- Added code to each command sub-VI for **HDice**'s Mercury*iPS* magnet power supply to read back number of bytes.
- Cleaned and set up equipment in the clean room for CMM test of four **RICH** mirrors with Tyler.
- Worked on **FT**'s OSP and THA forms.

Hall D

Slow Controls

- Worked on synchronization of time clocks between PLC and MPS.
  - ✶ Tested and analyzed code to send time from PLC to Danfysik System 8000 magnet power supply every four hours.
  - ✶ Evaluated possible solutions to synchronize timestamps between PLC and MPS to obtain monitoring accuracy and set up interlocks.
- Correcting Solenoid PLC Controls System report.

Eng, Brian

Hall B

- Provided a ground for **FT** equipment racks.
  - ✶ Noise increase observed after addition of tracker.
    - PS returns must be tied together.
  - ✶ Discussed alarm types and status.
    - Waiting on detector owners to respond, prior to making any modifications.

SVT

- Created spreadsheet with all card serial numbers for inventory by Fast Electronics.
- Added interlock to chiller test (module P66).
- cRIO now turns off HV/LV on humidity (>50%) or dew point (<8˚C).
- Provided DSG labor estimate for de/recabling detector for Hall B test.
  - ✶ Need two techs and an engineer for five days.
  - ✶ Reiterated recommendation of not moving detector (risks not worth the reward).

Hoebel, Amanda

Hall B

- Monitored current of **SVT** spare modules.
  - ✶ Currents have reached steady state values.

FT

- Generated OSP.
- Received overview (by Harkirat) of tracker (FT-Trck), hodoscope (FT-Hodo), calorimeter (FT-Cal) and related electronics.
  - ✶ Learned to start a run in CODA.
    - ▪ Started a non-recorded run with FT-Cal.
    - ▪ Viewed hits displayed.
  - ✶ Turned on/off HV and LV for FT-Cal in CSS.

Jacobs, George

Hall B

- Changed out UHP Argon gas cylinder for **DC** test stand.

MVT

- Gas mixing system diagram modification in progress for new gas mixture.
  - ✶ Valve panel design for gas mixing system in progress.
- Modified gas system cost spreadsheet for new gas mixture requirements.
- Documentation in progress.
- Ordered isolation valves for test setup in EEL125.

Leffel, Mindy

Hall B

HDice

- Worked on cables for second RF Switching/Attenuation Unit.
  - ✶ Soldered adaptors to connectors.
  - ✶ Completed termination of all cables.
  - ✶ Installed cables in attenuation unit.

DSG

- Researched and ordered:
  - ✶ Ethernet cable and connectors for replenishing the lab supply.

- National Instruments cRIO test station.
- Cable components.

- Continued populating and wiring.

Lemon, Tyler

Hall B

SVT

- Debugged data file transfer between VXS crate and Linux PC for HFCB Test.
  - Cannot copy gain scan data files to PC named prbwin7pc3 to run root analysis.
  - PC does not create home directory so files cannot be copied to PC.

RICH

- Coordinated CMM measurements of four mirrors.
  - Cleaned CMM equipment with wipes for relocation to clean room.
- Set up prototype mirror test station for spot tests with INFN collaborators.
- Analyzed CMM measurements in NX 9.0, Fig. 1, and Mathematica.

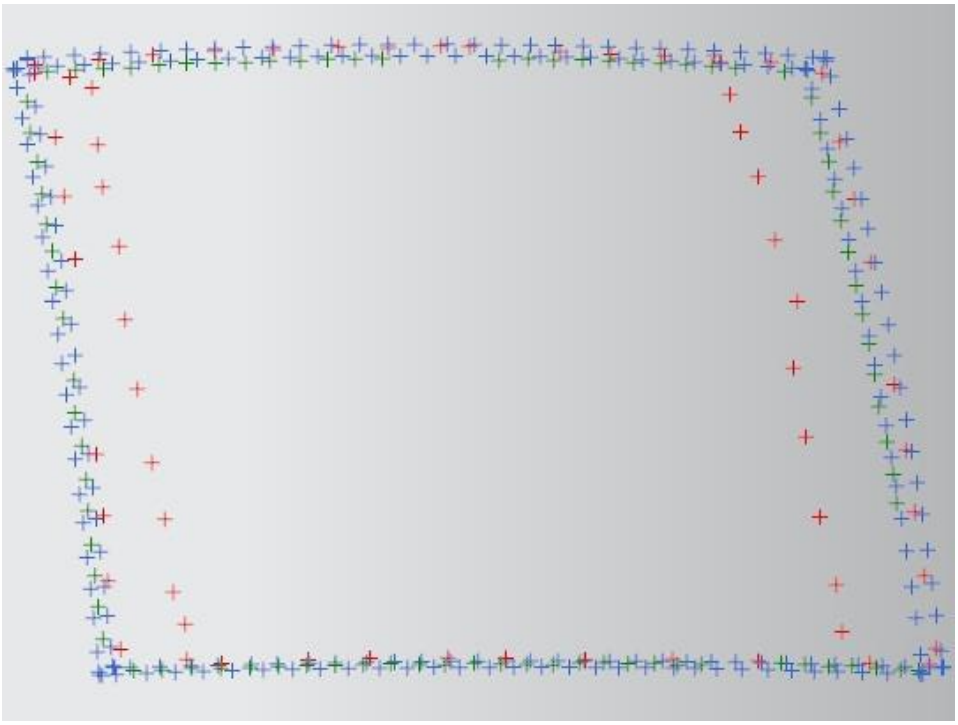


Figure 1: Plot of measurement points of mirror 2C in NX 9.0. Blue points are the edge points, green are the mirror surface measurements, and red are the back surface measurements.

FT

- Filled out OSP, THA, and ODH forms.
- Trained on how to start data runs and turn on HV/LV on detector assembly in EEL 125.
  - Used CODA to load configuration file, start run, and observe cosmic hits.
  - CLAS12-CSS used to turn on HV/LV.

McMullen, Marc

Hall B

Gas System

- Eliminated individual *while loops* for each detector system, decreasing CPU ~30%.
- Added total mix flow control to modified **DC** controls using pressure control gauges.
- Continued arranging **SVT** gas controls tab on LabVIEW code.
- Replaced **LTCC** pressure graph with new pressure gauge indicators.
- Developing separate controls tabs for the **BMT** and the **FMT** of the **MVT**.
- Worked with Eng grounding **FT** racks.

Sitnikov, Anatoly

Hall B

- Completed current test for 480 channels of the **SVT** MPOD LV card #5.