Detector Support Group

Weekly Report, 2016-07-06

Ongoing Projects

Hall B

Drift Chambers

- Gas manifolds expected to be installed mid-July.

HTCC

- Yuri Sharabian has OSP for testing.

RICH

- As no answer was received, request for quote for compressor sent again on 7/6/16.
- Mirror analysis continuing.

Forward Tagger

- DAQ tests started, using cosmics

HDIce

- Software to test RF Attenuation/Switching Unit under development.
- No progress on Mathematica.

Hall B Magnets

- Received request for Brian's help with checkout of the PLC controls.

Antonioli, Mary Ann

- Wrote code to test attenuator B in **HDice** RF Attenuation / Switching Unit
- Imported CMM points into AutoCAD for measuring **RICH** mirrors.
  - ✶ Measured sides and diagonals of mirror 5C.

Arslan, Sahin

- Replaced Argon for **DC** test in EEL.
- Rerouted **LTCC**'s LN_2 gas line, MFC and C_4F_{10} supply and recovery lines, to make room for **MVT** valve panel.
- Replaced a power cord on **DC** pumps, to control pump remotely.

Bonneau, Peter

- Wrote, tested, and debugged **HDIce's** NMR data acquisition sub-vi's that take simultaneous measurements from CT-Box and lock-in amplifier during a sweep.

Campero, Pablo

- Completed and tested LabVIEW code to set and read back current of **HDIce** Mercury iPS power supply.
  - ✶ Generated spreadsheet for step sizes of 6 [A] and 3 [A], in range of 0—120 [A].

RICH

- Generated in AutoCAD, 3D view from CMM measurements points (See figure 1.)

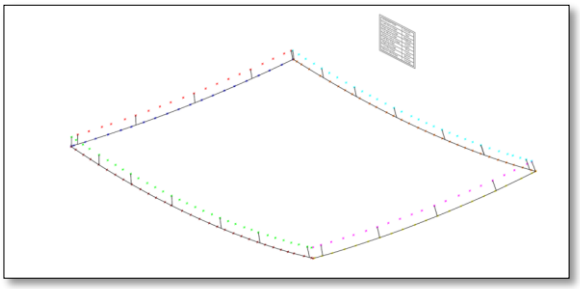

Figure 1: 3D drawing showing normal lines between a point and its opposite side, used to measure thickness of mirror 5C.

- Calculated average and standard deviation of thickness of the four sides of mirror C5.
- Calculated using 21 points for each surface, inner and outer radii of curvature (<2694>±81 [mm] and <2678>±73 [mm] respectively),.

Eng, Brian

- Repaired/modified lock-in amplifier from test stand in **HDIce** lab: fixed loose ground plug, replaced missing screws on chassis cover, attached SMA plug to front panel.
- Wrote python script to calculate radius of **RICH** mirror surfaces from CMM data, using least squares.

Gas System

- Moved network switches in gas shed to UPS.
- Troubleshooting connection problem to cRIO chassis on space frame; reseating network cable on switch fixed problem.

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Hoebel, Amanda

Forward Tagger

- Started DAQ to acquire cosmic-ray data to check data rates with masked channels.
  - ✶ Masked channels are channels that are ignored due to high levels of noise.
  - ✶ Unmasked one channel at a time, to see change in data rate, for each 30-minute run.
- Generating list of signals to be monitored for cRIO interlock system.
  - ✶ Temperature and humidity for calorimeter.
  - ✶ Temperature for hodoscope.
  - ✶ Gas pressure and gas flow for tracker.

Jacobs, George

- Provided estimate of C_4F_{10} required to operate one **LTCC** sector for a 30-day run.
- Relocated **LTCC** distillation unit's N_2 MFC and associated piping to make space for **MVT** gas mixing system.
- Modified **MVT** Gas Mixing System power point.
- Provided estimate for cost of gas for **DC** operations for FY17 and FY18.

Leffel, Mindy

- Terminated for **HDIce** two 25' cables, SMA to SMA and SMA to N-type.

DSG

- National Instruments cRIO **test station**
  - ✶ Collected available cable components; ordered missing items.
  - ✶ Modified and terminated one of two 37 contact D-sub to D-sub cables.
  - ✶ Wired power supply.

Lemon, Tyler

- Re-wrote **HDIce** work request document for the upcoming status review.
- Calculated from CMM data linear projection lengths of sides and diagonals of the **RICH** mirrors (C2 to C5) using Mathematica.

McMullen, Marc

Gas System

- Added both return line vacuum pumps (R1/2 and R3) to the **DC** controls GUI.
- Prepared, for **MVT**, gas controls equipment list with costs and description.
- Conducted monthly safety walk-through for EEL.