Detector Support Group

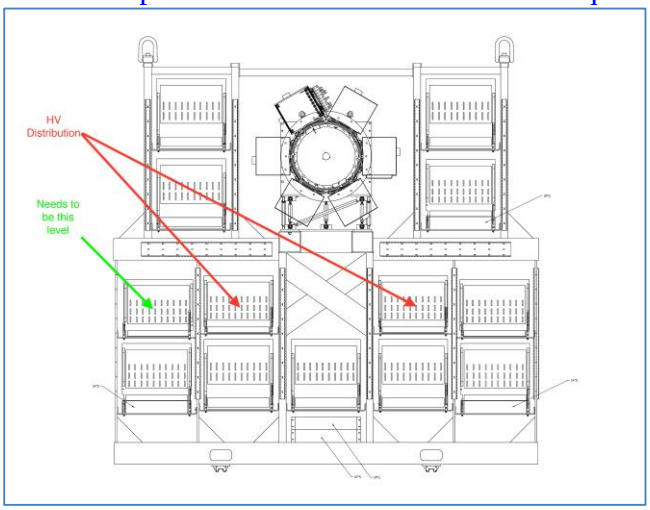
Weekly Report, 2016-08-03

Ongoing Projects

Hall B

SVT

- De-cabled all crates.
- Noted that insertion cart space for MPOD HV crates not adequate (see picture)



- E-mailed Bob Miller about this issue.

RICH

- CMM measurements for mirrors 3 and 4 scheduled for 8/8/2016.

Forward Tagger

- Turned off voltages.
- Sent cRIO component list to Marco Battaglieri

HDIce

- Review talk ready.
    - ✶ Talk presented by Peter Bonneau

DC

- Tested R1S2 and R1S3.

Detector Support Group

Weekly Report, 2016-08-03

Antonioli, Mary Ann

- Analyzing CMM data of **RICH** mirrors using AutoCAD.
- Wrote in LabVIEW version 2 of remote interlock test for **HDice** RF Attenuation / Switching Unit.

Arslan, Sahin

- CAD modeling of CMM measurements for **RICH** mirror C5 and working on C3.
- Tested **DC** R1S2, with Mindy, to check for broken wires before the installation.
    - ✶ Fixed three guard wire HV pins
    - ✶ Supplied F: 50V S: 50V G: 50V with Bertan HV power supply to each HV board (14 boards). Read back I: 0.000.

Bonneau, Peter

HDice

- Investigating triggering schemes for synchronization of data acquisition files for NMR sweeps.
    - ✶ Data from lock-in amplifier needs to be synchronized to measurements of CT-Box or readback from Oxford supply.
    - ✶ Lock-in amplifier has TTL trigger input. No output trigger is available.
    - ✶ Testing of CT-box output trigger is underway.
- Writing documentation on DSG work requests status for upcoming review.
- OSP for HDice lab still pending.
- Working with Pablo on revision of Rotation of Target Polarization Program, adding option of using Mercury IPS power supply.
    - ✶ Functionality of each new Mercury driver VI should be equivalent to driver of older Oxford power supply.

FT

- Meeting with Marco Battaglieri regarding the Forward Tagger interlock system.
    - ✶ Interlock system will monitor temperature and humidity.
    - ✶ LV, HV, and chiller will be interlocked.
    - ✶ Marco will check if coolant flow needs to be interlocked.
    - ✶ Marco will send a list of signals they would have in system.
    - ✶ Methods of interlocking chiller and LV/HC crates was discussed.
    - ✶ No patch panel box will be necessary; cables will be connected directly to NI cRio modules.

DSG

- Increased disk quota to 50 GB for DSG area on shared “M” drive.
- Updated staff area of photo log on DSG website.

Campero, Pablo

- Completed rewriting 11 LabVIEW sub-vis for **HDice** Mercury-iPS power supply so they function as the Oxford iPS-120 power supply sub-vis.
    - ✶ One exception: commands are unavailable for Mercury-iPS power supply to read "Activity Status" functions the same as for Oxford iPS-120.

RICH

- Worked with Mary Ann and Sahin on mirror measurements in AutoCAD.
    - ✶ Analyzed rotations for mirrors and noted that one corner in Ideal Model of mirrors 3C and 4C are not in a single plane.
    - ✶ Generated spreadsheet with x, y and z coordinates for each projected point in a plane for mirror 5C.
- Wrote program in Python 3.5.
    - ✶ Using x, y, and z coordinates for each projected point of mirror 5C, calculated best fit line for set of points.
    - ✶ Plotted best fit line and generated its points with new coordinates (x1, y1).

Eng, Brian

- Completed NI software installation and upgrades on Windows 7 computer in **gas shed** (hb-win-gasshed).
- Upgraded firmware on two **VXS crates** (tdcpcal4_crate and tdcftof4_crate) for Sergey; they were crashing/freezing; most likely due to extremely old version they were running.

SVT

- OSP signed.
- Updated SSL certificate for user account used for logbooks; previous version had expired.
- Powered up SVT so calibration scans could be done.
- Re-assembled 8-module test stand and powered up all modules.

Hoebel, Amanda

- Calculated radius for sides of **RICH** mirror 5C in Python.
    - ✶ All sides are calculated to have radius ~2700 mm for mirror edge and ~2720 mm for bottom edge.
- Turned off HV, LV, chiller, and gas for **Forward Tagger** Tracker and Calorimeter.
    - ✶ Hodoscope still on for signal testing.

Jacobs, George

DC

- Instructed Sahin and Mindy on proper operation of Bertan HV PS and test box.
- Provided feedback about safely transporting R1 from EEL to Hall B.
- Provided feedback on DCGAS GUI to Marc.

Leffel, Mindy

- Worked with Sahin in Hall B testing HV of DC R1S2.

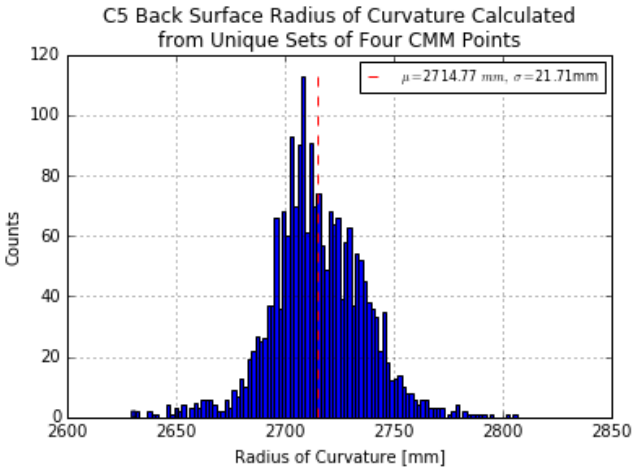
DSG

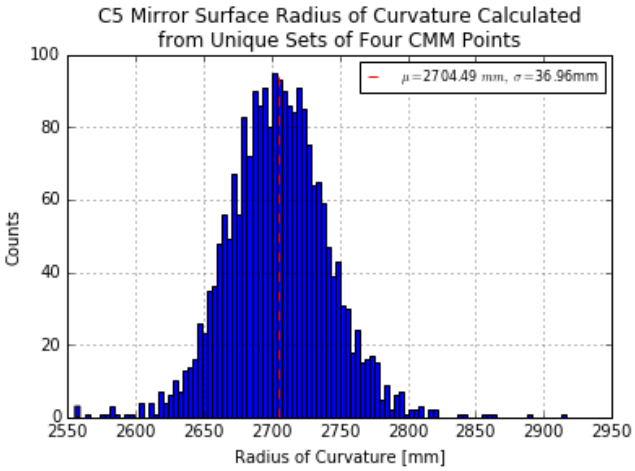
- National Instruments cRIO test station.
  - ✶ Cut four longer D-sub, 25 contact, cables and stripped and tinned all 200 contacts.
  - ✶ Terminated two 25 contact D-sub cables.
- Attached one DIN rail

Lemon, Tyler

RICH

- Installed Debian on PC for mirror spot tests.
- Set up and performed in small cleanroom, spot test for mirror C3.
  - ✶ Used CCD and light fiber to measure diameter of image of light fiber reflected by mirror and viewed by CDD.
  - ✶ 1.41 mm smallest observed spot size.
- Troubleshooting Python code to analyze mirror dimensions.
  - ✶ Finding better way to fit plane.
- Calculated radius of curvature in Python for C5 mirror and back surfaces.
  - ✶ Used unique sets of four, non-coplanar points from CMM edge measurements.
  - ✶ Used each set of four points to calculate a radius of curvature for a sphere defined by those points.
  - ✶ Took mean and standard deviation of calculated radii.
  - ✶ See plots below for mean and standard deviation.





In histograms, the red, dashed line represents the mean radius of curve.

McMullen, Marc

- Completed gas mixing and supply controls section of **DC** gas system operations manual.
- Reviewed ERR charge for **DC** Ancillary Equipment review.
- Reviewed and approved **SVT** OSP.
- NI components for **RICH** being received.
- Reviewed **MVT** OSP documents and suggested additional documentation of a diagram and operations manual.

DSG/Safety

- The SVT OSP (***ENP-16-61740-OSP)*** has been processed.
- Completed monthly safety walkthrough.
- Wrote THA for DSG tasks involving move of SVT to Hall B for noise tests.