Detector Support Group
Weekly Report, 2016-08-17

Ongoing Projects

Hall B

Magnet
- Pablo assigned to work @100% of his time with Nicholas Sandoval.

SVT
- Detector moved to hall.

RICH
- Curvature of RICH calculated to be 2701.8 mm +/- 0.3 mm.
- All cRIO interlock components received.

Forward Tagger
- Amanda Hoebel presented status report.

HDIce
- Review on 09/08/2016 @ 11:00 hrs in Dsg contrl room.
- Waiting on OSP to work in lab.

DC
- Mac requested Sahin's help with test chamber.

Gas System Software
- All codes ready to be installed and tested.
  - ★ Need one month for testing.

Antonioli, Mary Ann

- Wrote and debugging VI that communicates to LCD on **HDice** RF Attenuation/Switching Unit.

RICH

- Measured sides and diagonals of mirrors 3 and 4, using AutoCAD.
- Measured offset of CMM points of mirrors 3 and 4, using Auto CAD.
- Edited RICH review status power point presentation.

Arslan, Şahin

DC

- Filled R1S5, S6 with N_2 gas to inflate aluminized window before testing so that window will not lay on wires.
- Helped with rigging and transporting R1s

SVT

- Fabricated and installed network cables from MPOD and VMM creates to switch box.
- Assisted with transportation to hall.

Bonneau, Peter

Magnet Systems

- Examined latest CLAS12 Torus PLC code.
- Created DSG magnet documentation and code area on "M" drive.
- Downloaded Rockwell Studio 5000 V27 PLC program for Pablo to install on his machine.
- Monitored Torus cool-down progress.

Forward Tagger

- Developed Hardware Interlock System documentation.
- Using NI cRIO programmable automation controller (PAC), system will monitor:
    - ✶ Calorimeter temperature and humidity
    - ✶ Calorimeter gas flow
    - ✶ Hodoscope mezzanine crate box lid switch
    - ✶ The LV, HV, and chiller will be interlocked.
    - ✶ No patch panel box will be necessary; cables will be connected directly to NI cRIO modules.

RICH

- Worked with Mindy on layout of hardware interlock chassis.
- Checkout of controller and IO modules installed in chassis is in progress.

HDice

- Started software configuration on second computer in preparation for installation of instrumentation rack in HDice lab.

Campero, Pablo
RICH
- Worked on mirrors 3 and 4 analysis in AutoCAD.
  - ★ Imported ideal model and CMM data.
  - ★ Exploded ideal model to pull out sides and analyze side by side (top, bottom, left, right) with ideal model.
  - ★ CMM data were overlapping on ideal side.
  - ★ Rotated each side in the x-y plane to measure normal distance between CMM points and ideal side.

Magnet
- Requested that I be added to Clas12-PLC group on GitHub to access information and PLC codes for Torus.
- Monitored EPICs screen for Cryo Distribution Systems (LN$_2$ and LHE)
  - ★ Trying to figure out failures and main issues during cool down of Torus Magnet.
- Updated and labeled **DSG** photos folders with new photos of SVT, RICH, and HDice.

Eng, Brian
SVT
- Coordinated move of insertion cart equipment to subnets that run inside accelerator fence
- Verified can ping them and that restarting DAQ IOCs works.
- Tested fit in EEL/124 of plastic protection tube for when SVT is in Hall.
- Detector placed on transport cart and moved to L0 of Hall
  - ★ Waiting on Lift Plan approval before it can be moved to L1 and attached to insertion cart.

Gas System
- Upgraded all six cRIOs for gas system to LabVIEW 2016
- Added EPICS PVs for cRIO (CPU Usage, Heartbeat and Uptime); heartbeat has been added to the alarm handler to notify when a cRIO is down.
- Completed upgrade to LabVIEW 2016 on 4 computers.

Hoebel, Amanda
Forward Tagger
- Included more pictures and information to PowerPoint presentation.
- Worked with Pete on interlocks

Jacobs, George
- Created or modified P&I diagrams for presentation.
- Working on Hall B Detector Gas Utilities ppt.
- Ordered steel pallet on which to mount **RICH** air tank; receiving components for air cooling and N$_2$ system.
- Writing **LTCC** Operators Manual.
- Pre-job walk-through with Sahin for **SVT** purge setup in Hall.

Leffel, Mindy

- Fabricating **RICH** interlock chassis

DC

- Worked with Sahin in Hall testing R1S3: repaired five guard wires.
- Modifying HTSB cable jackets.
 - ✶ Humidity wires stripped 12" and temperature wires stripped 1.5".

DSG

- National Instruments cRIO test station.
  - ✶ Terminated two more 25-contact D-sub cables and tested all four.
  - ✶ Terminated and tested two 37-contact D-sub cables.

Lemon, Tyler

RICH

- Wrote Python program that calculates distance between mirror CMM measurements and ideal model.
  - ✶ Distance used to measure actual length of mirrors.
- Using Python, calculated radius of curvature of mirror assembly using CMM data for six mirrors received.
  - ✶ Radius = 2701.08 ± 0.24 mm.
  - ✶ Program plots CMM data and draws sphere on data using calculated radius and center point (see plot below).
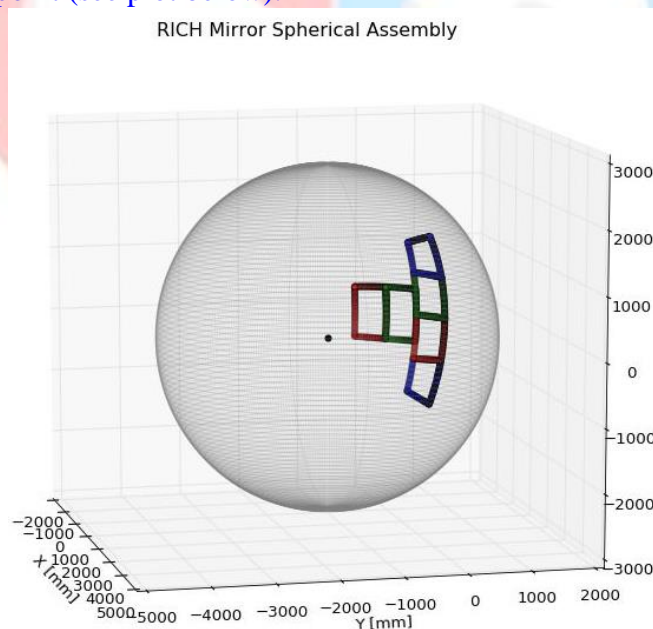
McMullen, Marc

- Worked with Eng test-fitting **SVT** protective tube.
- Continued discussions with Bonneau on the current status of the **DC** safety system.
- Completed and tested upgrade of **HTCC** gas monitoring and controls. LabVIEW software starts and flows gas upon outage recovery.
- Received **RICH** cRIO main frame.
- Interface chassis ordered.
  - ★ Estimated time of delivery is two weeks.