Detector Support Group

Weekly Report, 2017-03-08

State of Play

Solenoid

- Comments in *Instrumentation Test PLC-EPICS Plan_V3* spreadsheet updated.
- Update of drawings verified.

Gas System

- Nine relief valve assemblies, in preparation for installation, assembled.
- Flow relief valve for **DC** Ar and CO_2 supplies installed.
- Pre-job planning for N_2 gas supply relief valve installation started.

HDice

- Flowchart for Fast Resonance Scanner software completed.
- Noise test DAq-program for CT-box completed.

SVT

- Initial testing of CSS screens for slow controls done

RICH

- Assembly structure completed.
- Researched vertical guide sheave replacement for current pulley.

FT

- Interlock system subroutines to initialize command communication stream between user interface and cRIO real-time program completed.
- I/O variables and controls for user interface developed, debugged, and tested.
- MKS flow meter connected to cRIO chassis power and ADC readout and tested.

MVT

- P&I diagram for 10% C_4H_{10} in Ar gas mixing system created.
- Spreadsheet of system components for pressure system created.

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Antonioli, Mary Ann

- Completed **HDice** Fast Resonance Scanner software flowchart, discussed, and made discussed changes.
- Began Visio drawing of **HDice** Rotation of Target Polarization software flowchart, using Amanda's sketches.
- Continued writing **RICH** LabVIEW code for interlock system.
  - ✶ Completed ten subVIs used to set low and high limits on what is being monitored.

- Compiled, edited, and formatted weekly report.
- Changed website photo.

Arslan, Sahin

- Continued working on **RICH** assembly structure.

Bonneau, Peter

- Discussed with Pablo and Tyler the test station to simulate issues with **magnet** serial communications between cRIO module and LV chassis.
- Discussed with Mary Ann and Tyler the **RICH** LabVIEW subroutines that initialize, write, and read interlock thresholds for each sensor type.

Forward Tagger

- Completed interlock system subroutines to initialize command communication stream between user interface and cRIO real-time program.
- Developed, debugged, and tested I/O variables and controls for user interface.
- Connected MKS flow meter to cRIO chassis power and ADC readout and tested.

HDice

- Completed noise test CT-box DAq program. Results show CT-box meets the <0.005% accuracy specification.
- Worked with Amanda to set up remote access of CT-box for noise tests and discussed integration of CT-box Daq into lock-in amplifier test program.

- Held daily meeting on Hall D status and EPICS controls monitoring.
  - ✶ High humidity level observed in BCAL was caused by dislocated CDC electronics forced air cooling hose. Redirecting cooling hose reduced BCAL humidity level.

Campero, Pablo

- Worked with Amanda to update **HDice** NMR LabVIEW program from version 2015 to 2016 in Rack 1 PC.
- Contributed to assembling **RICH** structure.
  - ✶ Swapped two beams labeled as TA-SRT-011 to correct location of their holes.
  - ✶ Assembled diagonals and upper beams.
  - ✶ Lifted and attached H frame.
- Updated comments in **Solenoid** *Instrumentation Test PLC-EPICS Plan_V3* spreadsheet.

- Verified drawings updated.
- On SST- Helium screen, when heater images for HTR8620 and HTR8672 are clicked, pop-up cPIDs do not appear.
- Indicator for valve PV8674 should be displaying an Open/Close indicator, not % indicator.

- Monitored and analyzed logbook entries and EPICs screens for Hall D daily.
  - CDC current interlock thresholds are about 24 µA.

- Set up VME test station.
  - Discussed VME controllers with Peter.
  - Began to check VME Test 1 LabVIEW program.

Eng, Brian

- Finished **RICH** shell assembly structure.
- Initial testing of **SVT** CSS screens for slow controls was done; first pass was cleaned up automated conversion from Glasgow. So far is working fine; next round of testing will be after IOCs are moved.

Gas System

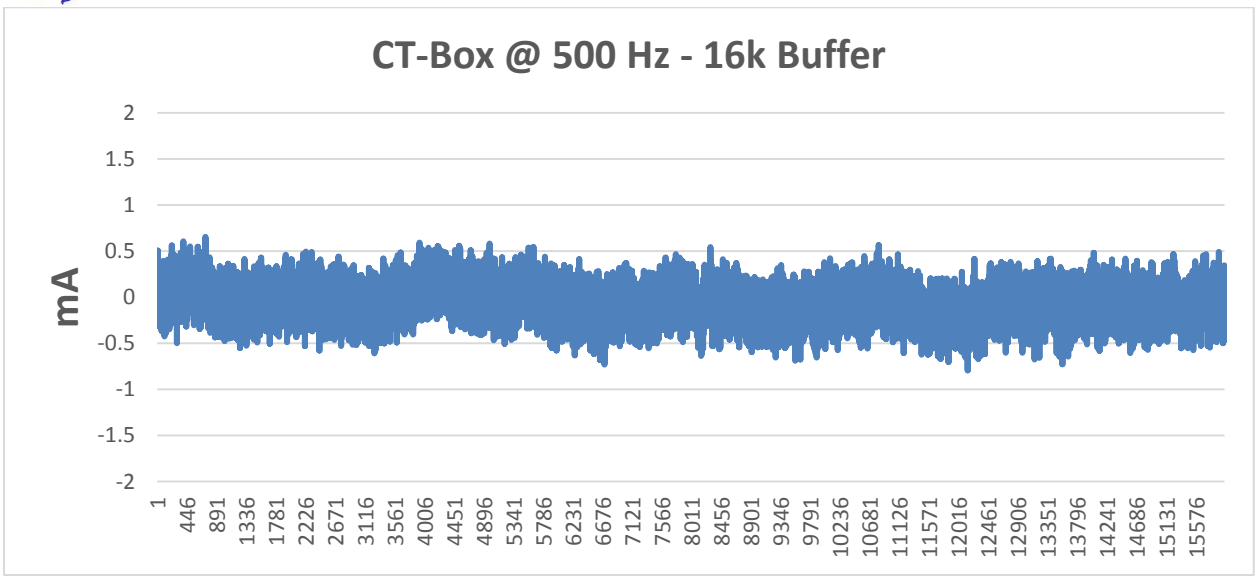
- Made separate shared variables for all EPICS PVs, so when there is a problem with EPICS it doesn't effect cRIO intercommunication.
- First pass of separating cRIOs out into individual projects works; need to work on performance tuning next.

- Attended slow controls meeting.
  - halldsc# computers no longer having functioning RDP after MFA rollout, CC still investigating.

Hoebel, Amanda

HDice

- Discussed NMR program with Tyler and Pablo.
- Worked with Pete on CT-Box data acquisition noise analysis program.
  - Created graphs for varying frequencies.
  - Program would not work properly at 50 KHz or 100 KHz, with 16 K buffer depth.



CT-Box noise data for 500 Hz, 16k buffer depth.

- Added RICH pictures of frame assembly to DSG website.

Jacobs, George

GAS Systems

- Ordered fittings for N_2 purge gas system relief valve installation.
- Discussed with Dave Kashy pressure and leak testing of pressure systems.
- DC solenoid valve panel rebuild in progress.
- Assembled nine relief valve assemblies in preparation for installation.
- Installed flow relief valve for DC Ar and CO_2 supplies.
- DC buffer tank relief valve installation in progress.
- Walked through target gas pad with Dave Kashy.
- Started pre-job planning for N_2 gas supply relief valve installation. Space frame piping cleanup and valve installation, Fwd Carriage piping cleanup and valve installation, and Fwd Carriage flex tubing replacement to occur at same time.

MVT

- Created P&I diagram for 10% C_4H_{10} in Ar gas mixing system.
- Created spreadsheet of system components for pressure system.

Leffel, Mindy

- Contributed to construction of **RICH** assembly structure.
  - ✶ Worked on reconfiguration of support beams, due to mislabeled parts.
  - ✶ Contributed to assembly completion.
  - ✶ Assisted with torqueing all bolts to spec.

- In process of locating all of Peter's property to complete his property inventory.

Lemon, Tyler

RICH

- Contributed to construction of assembly structure.
- Contributed to assembly of detector shell.
- Wrote assembly status report for DSG weekly meeting

- Monitored logbook and EPICS on a daily basis.

cRIO Test Station

- Wrote NI-9870 module test in LabVIEW.
- Wrote part of main program to allow user to set what module tests should run.

McMullen, Marc

- Continued work on changing variables of **Gas System** project to network variables.
    - ✶ Testing and debugging new system. All three (Gas Shed, Forward Carriage, and Space Frame) projects are running independently; gas shed reads variables from other two projects over network.

RICH

- Researched vertical guide sheave replacement for current pulley.
- Verified fit of hoist ring with Sahin, Mindy, and Tyler.