

Ongoing Projects

Magnet Control System

Solenoid

- Generating process variable tags.

Torus

- Solving issues with voltage taps ↔ Fast_DAg cRIO.

Gas System

- Operations manual for system design (1st draft) completed.
- Operations manual for software (1st draft) for DC ~80% complete.
- Procurement forgot to place order of flowmeters and flow-transducers for RICH!
 - ★ Items expected to arrive 10/07/16

HDice

- OSP ready for installation and operation of new items developed by DSG.
- Updating of target rotation program started.

DC

- Installing HV distribution boxes.
- Routing signal cables into rack-mounted cable trays.
- Removing obsolete labels from HV distribution boxes.

SVT

- R4 reassembled.

RICH

- Air tank received.



Air tank for RICH detector

- cRIO system's power supply and controller tested.

FT

- Modified 19 FT preamplifier boards.

Detector Support Group

Weekly Report, 2016-09-21

Antonioli, Mary Ann

- Worked on DSG Notes.
 - ★ Laid out Peter's Note on FT hardware interlock system, began editing, and formatted tables.
 - ★ Writing Note on RICH mirror data analysis.
- Made four Visio drawings for Pablo's presentation on PLC system.
 - ★ Overall system, solenoid system, torus system, and distribution box system.
- Made two Visio drawings for Amanda's Note on CompactRIO.
 - ★ EPICS system and cRIO system.

Arslan, Sahin

- Made template on transportation pallet, drilled holes, then using crane, brought **RICH** air tank into vertical position, installed on transportation pallet, and tapped top hole for pressure relief valve.



- Provided and replaced **FT** N₂ gas.

SVT

- Replaced N₂ bottle.
- Mounted debugged spare modules onto region 4
 - ★ (P54=R4M9, P10=R4M1, P30=R4M12, P47=R4M15, P60=R4M21).



- Working on R4 cables to MPOD and VME crates.
- Working on patch panel cables.



Detector Support Group

Weekly Report, 2016-09-21

Bonneau, Peter

- Replacement for defective 5V power supply in RICH cRIO chassis received, installed, and tested.

Magnet Systems

- Working with Pablo, issues have been found regarding implementation of solenoid vacuum system interface to PLC.
 - * Draft vacuum design document defines Torus Point I/O system as PLC interface to solenoid vacuum system.
 - * Not enough spare channels available in Torus Point I/O system for solenoid vacuum system.
 - Approximately 5 signals needed (3 ADC channels and 2 digital inputs).
 - Alternatives are being investigated. Some spare channels available in solenoid PLC chassis; however, located on a different level of space frame.

Forward Tagger

- Resolving instrumentation issues with Amanda and Raffaella Devita.
 - * MKS flow meter is being purchased by INFN from an Italian reseller.
 - * Flow meter can use 24 V power supply from chassis if located near cRIO. If too far from cRIO, it will need its own 24 V supply.
 - * Design based on flow meter with 0–5 V output to cRIO ADC (no additional controller is necessary).
 - * Rather than purchase cable assembly from MKS, meter uses a standard "D" type connector assembly that DSG can make.

HDice

- Developing VISA device drivers for older Oxford power supplies.
 - * Drivers for power supply status and remote / local control have been completed.
 - * LabVIEW test program written to test new device drivers as they are completed.
- Updated DSG website with latest talks. Changed html index files to reflect updates.

Campero, Pablo

Magnet

- Tested PLC and cRIO communications in Solenoid control systems.
 - * Modified PLC code on Load_Cell routine, adding new tags names for axial and radial load cells' signals.
 - * The configuration in PLC is ready to test with dummy values, to simulate different voltages.
- Worked on PLC–EPICS communication.
 - * Generated tag list with proper nomenclature for tag names of signals coming from vendor ETI.
 - * Temperature units corrected in Master Instrumentation spreadsheet.
 - * Assigned tag names for Danfysik magnet power supply, which were based on Torus magnet because both of them are same model.
- Worked on voltage injection test in cRIO Fast_Daq module for solenoid magnet.



Detector Support Group

Weekly Report, 2016-09-21

- ★ Began to modify Magnet_Calculation PLC program, generating voltage_tap tags for 20 voltage taps for solenoid.
- Worked on Magnet Status Report power point presentation.

Eng. Brian

- Looked over Magnet fast DAQ cRIO code per Ruben's request; found possible issue with EPICS buffer, but still waiting for feedback from Ruben on how to proceed.

SVT

- Completed R1-3 cabling, powered on all modules, and performed gain scans.
- Re-setup 8-module test stand with Sahin (<https://logbooks.jlab.org/entry/3421422>); found broken LV wire and repaired; all modules are powered on.

Gas System

- Continued debugging startup application (EPICS PVs not being populated). Running in FPGA interface instead of scan mode has no effect, still get errors when run as an application; still runs fine manually.
- Found bug with MFC initialization that was causing the SF cRIO not to set/readback values.

Hoebel, Amanda

HDice

- Became familiar with Rotation of Target Polarization VI.
 - ★ Ran program for 5 A, 10.2 A, 15 A, and -15 A.
 - ★ Tested “hold” for axial supply.
- Sent email to Oxford Instruments regarding power supply issue.

Jacobs, George

DC

- Created wire test stand gas mixing and supply diagram.
- Discussions with Mac about ODH calculations for EEL 124 clean room.
- Placed PR for DCGAS pumps.

RICH

- Procurement dropped the ball on the Aalborg Inst order, flow meters and flow transducers; new due date is 7 Oct.
- Attached relief valve, pressure gauge, air inlet and outlet fittings on air tank.

LTCC

- Gas system operator's manual in progress.
- Gas system operator's manual appendixes in progress.
- Created pressure safety interlocks diagram.
- Quarterly safety walkthrough in 96B gas shed.



Detector Support Group

Weekly Report, 2016-09-21

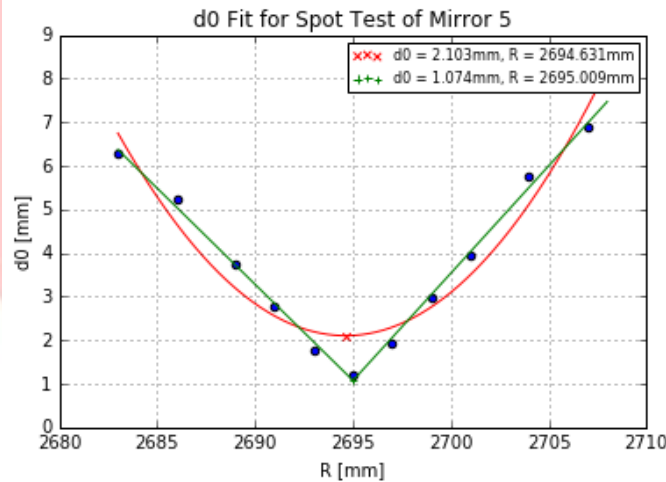
Leffel, Mindy

- Accommodating work request from Fast Electronics Group, working with M. Taylor on DC in Hall.
 - * Continued installing HV distribution boxes.
 - * Routed signal cables into rack-mounted cable trays.
 - * Removed obsolete labels from HV distribution boxes.
 - * Started removing label residue.
- Modified 19 FT preamplifier boards.
- Updated online portion of Hall B safety awareness training.

Lemon, Tyler

RICH

- Compiled Excel sheet of mirror CMM measurement results.
- Wrote mirror measurement results talk for DSG weekly meeting.
- Troubleshooted fit-d0 program for spot test results.
 - * Data appeared to be absolute value function rather than parabolic.
 - * Had issues fitting absolute value, fit with two linear regression lines instead.
 - * Intersection of regression line corresponds to fit-d0 and fit-R value.



Result of mirror 5 spot test. Blue points are spot test results, red plot and 'x' marker is the original parabolic fit, green plot and '+' marker is improved linear fits.

McMullen, Marc

- Discussed software requirements during LTCC distillation/recovery of C_4F_{10} .
- Continued fabrication of RICH gas system interface chassis, adding internal power wiring and distribution.

DC

- Continued work Gas Controls manual.
 - * Reviewed the DC gas operations manual.
- Worked with Brian troubleshooting and debugging mass flow controller software.