



# Detector Support Group

We choose to do these things "not because they are easy, but because they are hard".

**Weekly Report, 2022-06-29**

## Summary

### Hall A – GEn-II

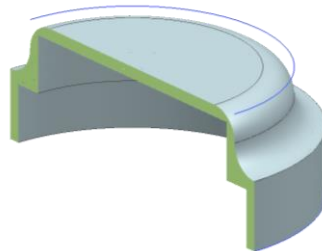
Mindy Leffel

- Terminated, tested, and labeled 144 RG59 SHV cables – 220 of 400 complete

### Hall A – SoLID

Pablo Campero, Mindy Leffel, and Marc McMullen

- Debugged radial support load sensor readout – noticed pin assignment at sensor connector (Tuchel 5-pin) and Dataforth pinout shown in *CLEO Controls* spreadsheet were incorrect
  - ★ Wiring on Dataforth modules will be modified; drawings will be updated to reflect changes in rack wiring
- Printed prototype of flange cover to protect exposed pins for the SoLID vacuum feedthrough connections



Cross section of flange cover for SoLID vacuum feedthrough

### Hall B – Gas System

Brian Eng

- Debugging system crash of the gas shed cRIO running LabVIEW 2021 – was able to duplicate the crash on the development cRIO
  - ★ Cause of the crash appears to be the *Gas System GUI VI*; adding in additional data logging to try and better understand the crash

### Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, and Marc McMullen

- Developing Ansys Fluent thermal simulations which include heat exchangers' heat removal effects by adding rotation to the fans in a perfectly isolated detector enclosure
  - ★ Set Mesh Motion for one of the four fans to get rotation of the blades; left the other three fans static (with no effect on the thermal simulation)
  - ★ From the result of 20 iterations, noticed that the fan was rotating, but not interacting with the other elements in the electronics volume
    - Computed velocity for fan 1 was 20.37 m/s
    - Modification of contact surfaces in progress to solve the issue
- Developed Python script to generate high voltage settings GUI



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- ★ GUI consists of input fields for maximum voltage, set voltage, ramp up/down rates, current limit, and time over threshold
- ★ These inputs are used for all channels of all CAEN high voltage modules
- Tested high voltage supply cables using Python – 36 of 40 cables tested

## **Hall D – JEF**

*Mary Ann Antonoli, Aaron Brown, George Jacobs, and Mindy Leffel*

- ESR foil pre-shaping – 1627 foils complete
- Wrapped six crystals with ESR foil and Tedlar

## **Hall D – WEDM**

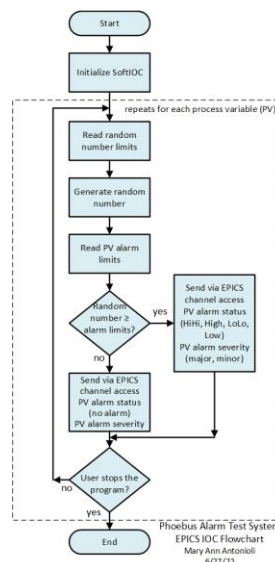
*Tyler Lemon*

- Debugging goniometer radiation status message
  - ★ WEDM screen does not correctly report status
  - ★ Debugging Boolean logic in WEDM used for indicator and comparing behavior to CSS-BOY rule in CSS screens
- Debugging NMR tagger status readback
  - ★ Tagger application updated, different logic is now used to indicate that NMR is locked on to field
  - ★ Need to figure out way to propagate changes to WEDM since CSS uses scripts and rules and WEDM does not have that feature

## **DSG R&D – EPICS Alarm System**

*Peter Bonneau*

- Started custom rebuild of Phoebus to version 4.6.10 from source code
  - ★ Includes the Phoebus core and alarm system applications: alarm configuration logger, alarm server, alarm logger, and Kafka interface
- Created program flow diagram for the Phoebus test system softIOC



Phoebus Alarm Test System EPICS IOC flowchart