

Detector Support Group

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

Weekly Report, 2024-02-14

Hall A – ECAL

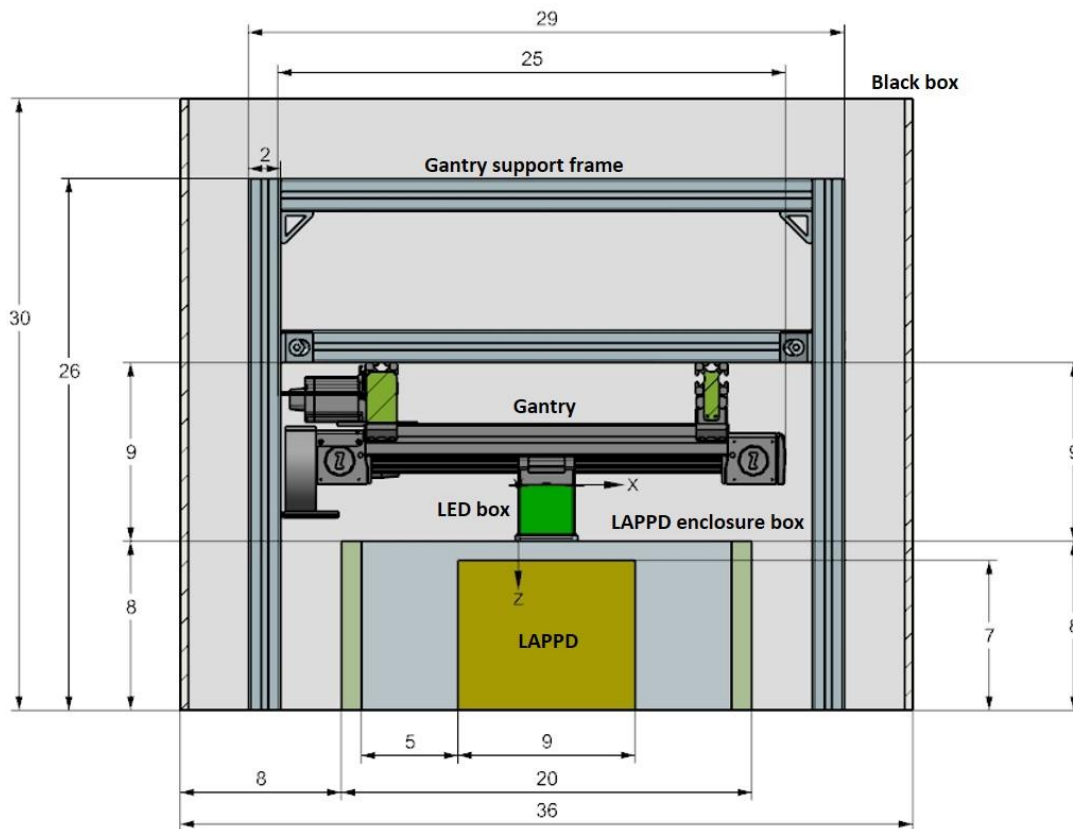
Marc McMullen

- Installed controls cRIO and cRIO expansion chassis in the counting house and Hall A
 - ★ Wrote a program to read a single thermocouple from the six-supermodule test stand to verify network connectivity between the cRIO and expansion chassis
- Completed engineering review of the PCB for the power supply interface chassis
 - ★ Ordered chassis connectors and PCB

Hall A LAPPD

Pablo Campero and Marc McMullen

- Updated 3D model drawing of the detector test stand



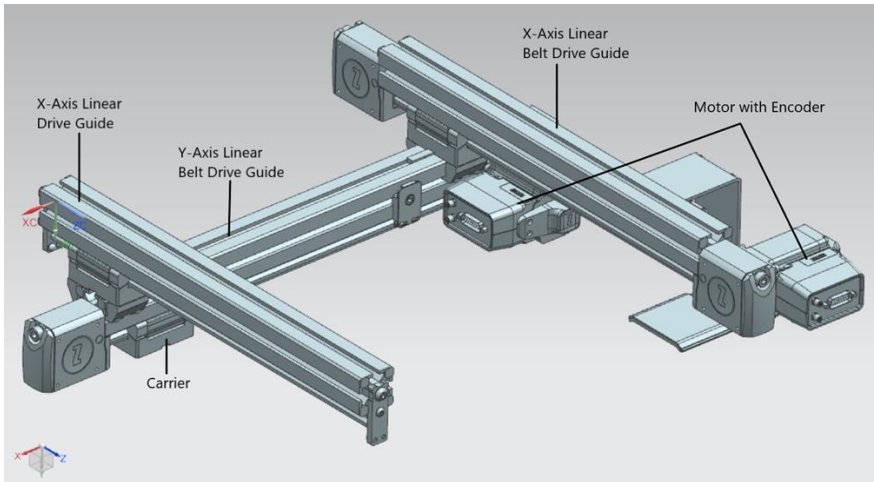
Front view of the LAPPD black box with the gantry and gantry support frame. The dimensions are in inches.

- Working on LabVIEW program to control and monitor gantry position
 - ★ Created a VI to send commands to move and control velocity
 - ★ Working on commands to read position
- Designing gantry support structure
 - ★ Converted manufacturer's 3D files so that they could be used with NX12
 - ★ Using NX12, assembled gantry system

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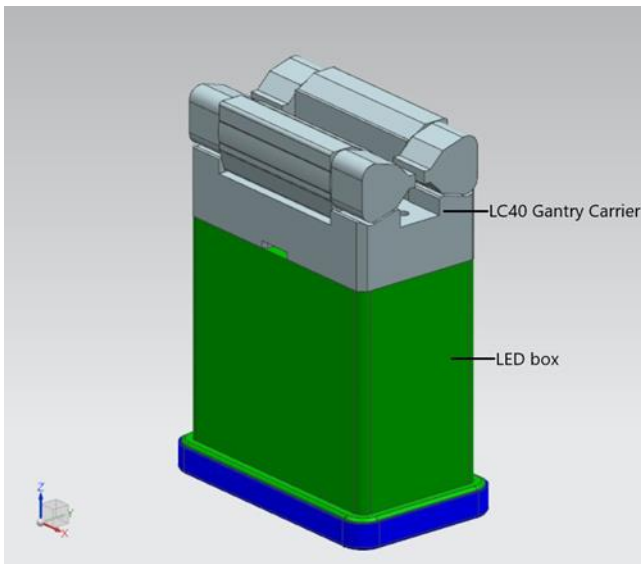
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NX12 drawing of gantry system fully assembled

- Designing LED box
 - ★ Base of the box based on the gantry's carrier dimensions and hole locations;
 - height based on the circuitry and components used to power the LED
 - ★ Generated first version of the LED box using NX12



LED box designed in NX12

- Calculated resistor value to limit the current to the LED to be within the recommended range of 10–30 mA

Halla – Møller

Brian Eng

- Adding SCL (structured control language) code to PLC to communicate with magnet power supply using full list of commands (previously read only current and voltage)
 - ★ Only first command sent gets a response; debugging

Hall B – Magnets

Brian Eng

- Torus magnet fast dumped on 2/10
 - ★ <https://logbooks.jlab.org/entry/4250279>
 - ★ Similar interlock SOE timing as previous fast dumps
 - ★ Currently under investigation

Hall B – ALERT

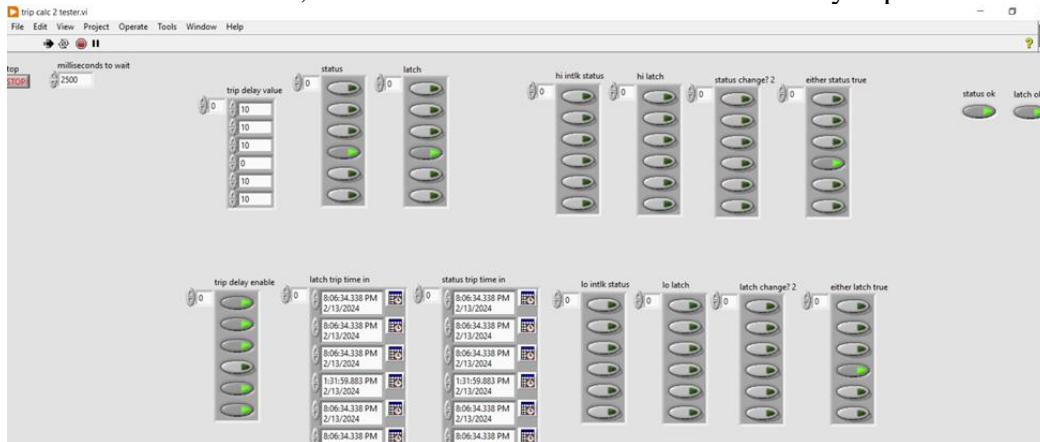
Brian Eng and Marc McMullen

- Ordered the solenoid valve that controls exhaust flow
- Investigating 24 VDC coils for solenoid valve
 - ★ Standard ASCO valve is 11.6 W (~0.5 A); solid state relay cRIO module can handle 0.75 A, mechanical relay cRIO module can handle 1.5 A
 - ★ Found lower power coils, but valve bodies are smaller than desired (1/8”–1/4” vs the 3/8”–1/2” of normal power coils)

Hall C – NPS

Aaron Brown and Mary Ann Antonioli

- Debugging failure to trip in control and monitoring LabVIEW program, vers. 2
 - ★ Made a standalone project to test the subVIs independently of the overall program, using local variables and six-element arrays; no problems
 - Next, will test with network variables and arrays up to 56 elements



Screenshot of portion of front panel for subVI test program

- Attempted to recover 40 front crystal temperatures; awaiting opening of Hall
 - ★ <https://logbooks.jlab.org/entry/4248890>

Hall D – FCAL2

George Jacobs and Mindy Leffel

- Populated 65 PMT bases; completed 1440 of 1650
- Cut and stripped 240 wires
- Tested 124 PMT bases; 134 completed



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EIC – DIRC

Tyler Lemon, Peter Bonneau, Brian Eng, George Jacobs, and Marc McMullen

- Completed setup and basic benchtop testing of laser interlock system
 - ★ If operated in interior control mode without expert key, system did not reset, caused by input to PCB for expert key floating high to ~1.5 V, thus always reading on
 - ★ Added a pull-down resistor from input to ground, resolving problem
- Performed test of shipping crate modifications
 - ★ Troubleshot loading process and adjusted positioning of foam supports inside crate to provide clearance for removing the lifting support
- Phoebus alarm test for laser interlock
 - ★ Debugged communication link between the alarm software packages computer and the EPICS laser interlock softIOC server
 - ★ Resolved issue by assigning static IPs on computers

DSG – Website

Peter Bonneau and Mary Ann Antonioli

- Completed code changes to reformat Talks section
- Added pictures to the DSG spotlight photo archive
- Revised the random selection script for the DSG spotlight photo to not repeat before 50
 - ★ Developed test program to verify no picture repeats to the set memory depth of 50