# SoLID Magnet Controls System Meeting Minutes

**Date:** July 20, 2022
**Time:** 11:00 – 12:00

*Attendees*: *Peter Bonneau, Pablo Campero, Steven Lassiter, Marc McMullen, and Tyler Lemon*

1. **HMI screen development**
   *Pablo Campero*
   1. Completed *Solenoid Interlock* screen
   2. Completed *Solenoid Constant Current Source Boards Control* screen
   3. Completed *End Station Refrigerator Cryogenic Data* screen
   4. Reviewed modifications to *Solenoid CCR-Expert* screen
      - Changed units for pressure
      - Added button to open *CCS Controls* screen
      - Changed display type for screen from *Overlay* to *On-Top*
      - Added valve operation mode indicator
   5. Reviewed modifications to *Solenoid Trends* screen
      - Changed data source for all trends from Tag (Live Data) to Data Log model, so trends can be displayed from the archived database
      - Trends in Data Log option are available for temperature and load sensors; eventually, all trends will be changed to Data Log model option
      - Tested trends successfully
   6. Changed units on *Axial & Radial Supports* HMI screen from lbf to Kgf
   7. Disabled auto-logout option for client access
      - Testing in progress
      - Replaced client file in local and shared directories
   8. Setting up HMI client access on computer as part of the Hall A Dev. subnet
      - Noticed that only one of the four licenses is activated and running, the other three licenses will be activated
      - Setting up runtime security options and accounts

2. **FactoryTalk View Data Log system**
   *Pablo Campero*
   1. Set up Open Database Connectivity (ODBC) model to archive sensor readout data on Phycad58 server computer
      - Microsoft Access software allows access to the archived data from .mdb files
   2. Configured data archived files to be purged every 10 days
   3. Initially, temperature sensors, radial and axial support load sensor readouts added to data log
   4. Ran and tested data log system

3. **Instrumentation debugging**
   *Pablo Campero and Steven Lassiter*
   1. Debugged PT-102 and diode temperature sensors
      - Found that the constant current source (CCR) board vendor did not follow JLab specifications in wiring the instrumentation connectors
        - Modified wiring on instrumentation racks side to match wiring from vendor
        - Drawings will need modifications to match actual wiring
      - Solved grounding issues at the PLC-ADC module

- Tested readout for all six diode sensors; all working properly
- Noticed a readout voltage of 0.12 V for the PT-102 sensors
  - CCS boards were fabricated to output current of 1 mA recommended by Lakeshore (vendor of PT-102 sensors)
  - Documentation shows excitation current needed for PT-102s is 0.1 mA
  - Dataforth signal conditioning modules input range is between 0 and 10 mV and output voltage range is -10 V to 10 V
  - To solve issue, first option is to change Dataforth modules, if available, and the second option will be to change resistors on CCS bards
  - If resistors on CCS boards are changed, then will need six channel outputs of 75 uA (Dataforth input 10 mV = 10 V output) and two channels (current leads sensors) with current output that will be determined based on the resistance of PT-102 when ambient temperature is above 30° C

2. Debugged pressure sensor readout; sensor reading negative values
   - Swapped wires at Dataforth signal conditioning module to match sensor pinout; read positive values
   - Steven Lassiter will send wiring changes to update drawings

## 4. Turret connectors work
*Pablo Campero, Brian Eng, and Mindy Leffel*

1. DSG's initial work on the turret is complete
   - All wires have been labeled and disconnected
   - Turret is ready for Hall A techs to start on their work
2. DSG will clean up the connectors on the small flange while the turret work is ongoing
3. Issues found where actual wiring on connectors didn't match the drawing

## 5. Other Topics
1. Valve connections will be done on Thursday