Detector Support Group

Weekly Report, 2019-12-17

Summary

Hall A – SoLID Magnet Controls

- Routing of Constant Current Source (CCS) board completed
  - ✶ Board design is under review
- All components needed to assemble 10 PCBs ordered
- Developing HMI screen to monitor SoLID Solenoid temperature sensor readouts
  - ✶ Connected SoLID PLC controller with HMI application
  - ✶ Generated isometric view of the inner and outer radiation shields, and the coil shell to display temperature sensor locations
- Developing FactoryTalk View data logger
  - ✶ Tested data logger in Open Database Connectivity (ODBC) mode by storing data using ODBC data source (Microsoft Access)
  - ✶ Logged temperature sensor test values
- Developing controls and instrumentation drawings
  - ✶ Generated spreadsheet with expected drawings

Hall B – RICH

- Developing LabVIEW code to monitor cleanroom dry box
  - ✶ Temperature and humidity values are read
  - ✶ An email is sent when value is either over, or under, set limits

Hall C

- Fabricating RTD cables for polarized 3He target
  - ✶ Twenty of forty two-wire RTDs with four magnet wires fabricated

Hall C – CAEN HV Testing

- Configured GECO 2020 to allow connection to crate #2 (*hvcaentest2*) and crate #3 (*hvcaentest3*) at the same time
- Developed Python program to parse data generated by GECO 2020 data logger
  - ✶ Program sorts data by board number, channel, and parameter
  - ✶ Formats data for analysis
- Populated PCBs with HV test loads (2 MΩ)
  - ✶ Soldered 38 of 48 resistors and ground wires for HV Load Chassis

DSG R&D – EPICS Data Logger

- Installed Linux version of data logger on *dsg-c-linux1* (Hall C subnet) machine
- Currently logging with DSG data logger RICH and SVT Hardware Interlock EPICS PVs
  - ✶ DSG logged data will be compared with MYA data to verify that the DSG data logger isn't missing data points and that both data loggers get the same value

DSG R&D – Multi-Sensor Excitation Low Voltage (MSELV) Chassis sbRIO

- Added features to web interface for MSELV Chassis sbRIO using LabVIEW webserver, JavaScript, and HTML
  - ✶ Chassis configuration change

- Allows user to select which existing MSELV Chassis configuration to use
- Selectable by control designated by (H) in screenshot shown in Fig. 1

✶ Software reboot
- Restarts sbRIO's LabVIEW program to implement any configuration changes
- Reboot controlled by button designated by (I) in Fig. 1
- Upon click screen asks for confirmation before performing reboot

✶ Combined Solenoid and Torus chassis configurations into one program
- Makes sbRIO's LabVIEW program universal for all existing MSELV Chassis

✶ Added system information indicators, Fig. 1
- Chassis configuration loaded (A)
- Hostname (B)
- IP address (C)
- Program start time (D)
- Current sbRIO time (E)
- Number of seconds program has been running (F)
- Quantity of each sensor type (G)

✶ Ability to automatically hide unused indicators on monitoring page
- Different chassis have different number of sensors connected
- If an indicator for a sensor exists, but the data for it does not, web interface displays zeros for that sensor
- Automatically hiding these indicators avoids any misconception that there are sensors that are not working

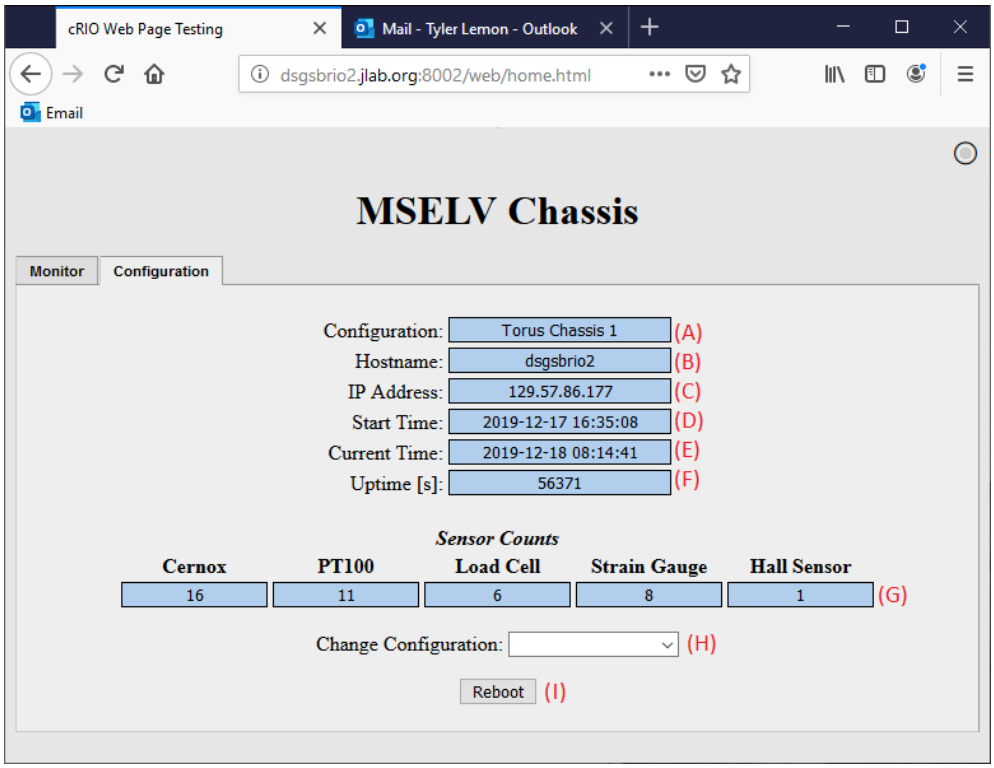

Fig. 1 MSELV Chassis sbRIO configuration and system information page.