DSG-RICH R&D Meeting Minutes

Date: February 12, 2021
Time: 11:00AM – 12:00PM

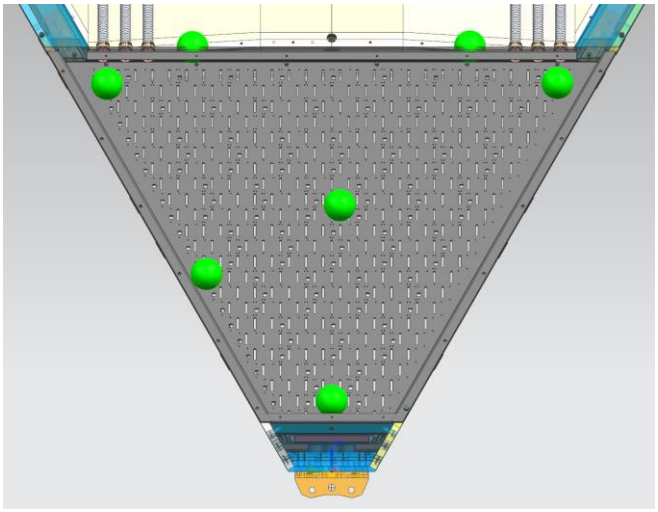
Attendees: Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Tyler Lemon, Marc McMullen, and Amrit Yegneswaran

1. RICH-II interlock system PRs submitted
    - 1.1. PR #1: all interlock system SHT-35 sensors and prototyping materials
        - 1.1.1. Vendors are Digi-key and Newark
        - 1.1.2. Expected delivery: March 3, 2021
    - 1.2. PR #2: six flat, 100-ft long Cat7 cables
        - 1.2.1. Vendor is Amazon
        - 1.2.2. Expected delivery: February 16, 2021
        - 1.2.3. For an alternative, Tyler Lemon is researching availability of *bulk* Cat7, or Cat6a or Cat8 with similar cross section to Cat7 cable procured

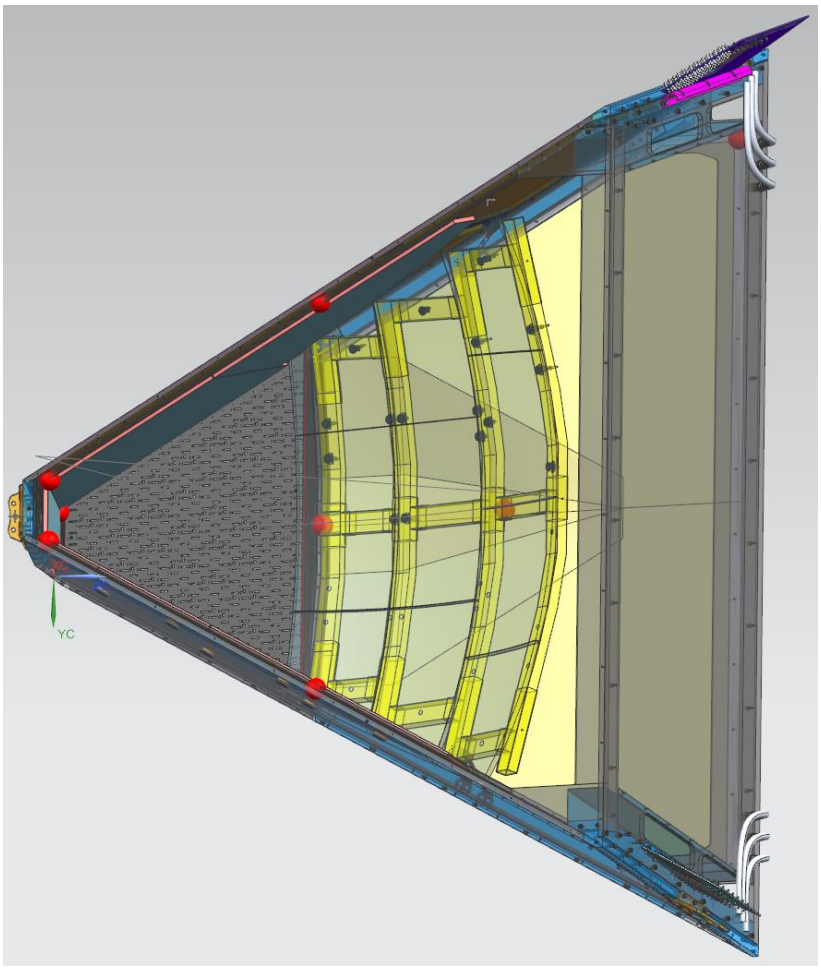
2. Chassis and three PCBs needed for interlock system
    - 2.1. Peter Bonneau, Marc McMullen, and Tyler Lemon will work on design of PCBs
    - 2.2. RMC board will connect sbRIO to buffer drivers and connectors for clock and data signal cabling to the power and signal distribution board
    - 2.3. Power and signal distribution board will route 3.3 VDC power received from the chassis through RJ-45 connectors; will route communication signals from the sbRIO to the RJ-45 connectors
    - 2.4. Sensor board has two Sensirion SHT-35 sensors on each
    - 2.5. Chassis houses all PCBs and sbRIO
        - 2.5.1. Will have external RJ-45 connectors and AC power connection
        - 2.5.2. Size will depend on size of final RMC

3. Discussed improvement of RICH-II seal between electronic panel and nitrogen volume
    - 3.1. Previous RICH sector used a basic gasket between PCBs and carbon fiber of electronic panel
    - 3.2. George Jacobs suggested a silicon sealant be used between PCBs and electronic panel to improve gas seal between panel and nitrogen volume

4. Discussed HTSB locations in first RICH sector
    - 4.1. Sixteen locations monitored—eight in nitrogen volume and eight in electronic panel
        - 4.1.1. Two temperature and two humidity sensors at each location; 64 total sensors



Seven electronic panel HTSB locations. The eighth sensor in the electronic panel set monitors the ambient temperature at the air-cooling buffer tank on Forward Carriage – Level 3.



Eight HTSB locations in nitrogen volume