

DSG-RICH R&D Meeting

Date: February 7, 2022

Time: 11:00 AM – 12:00 PM

Attendees: Mary Ann Antonioli, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen, and Amrit Yegneswaran

1. Spherical mirrors

1. Fabrication of new mirror support parts
 - Resin and tank for 3D printer delivered to EEL
 - Fabrication of mirror support mounts underway
 - First batch of 12 complete, 24 of 36 remain
 - Will send photos to INFN collaborators before proceeding with remaining 24.
2. Estimated time for testing mirrors at CMA is February 28 – March 4, 2022
 - Travel authorization paperwork in progress
 - Tentative timeline for travel:
 - Day 1 – travel to CMA in Tucson, AZ; set up test station
 - Day 2 – 4 – measure d0 for remaining eight spherical mirrors
 - Day 5 – return home

2. Chassis to house hardware interlock system

Mindy Leffel, Tyler Lemon, and Marc McMullen

1. Mindy Leffel is assembling chassis; chassis is 90% complete
 - RMC/backplane PCB power connectors and RMC-to-backplane ribbon cables remain
2. Pins initially ordered for the RMC and backplane PCB connectors were incorrect; correct pins ordered and expected by end of the week

3. RICH hardware interlocks CSS screens

1. Screens based on those from first RICH sector, but modified to display information based on SHT35 sensor grouping
2. User-level and expert CSS screens under development for hardware interlock system
 - User screen
 - Sensor data in list view and in graphical format
 - Read-only for interlock limits, interlock enable
 - Only control is reset interlocks and a button to open expert screen
 - Expert screen
 - Sensor data in list view with controls for enabling interlocks and setting interlock limits
 - Additional tabs on screen for I²C communication information and controls, averaging and interlock trip delay control, and system monitoring for sbRIO status information

Interlock Summary
OKAY

CAEN Enable Status

HV DISABLED **LV DISABLED**

LabVIEW CONTROL

Heartbeat

Sensor & Limit Monitoring Sensor Location

UNDER DEVELOPMENT

Electronic Panel

INTERLOCK RESET

		High Limit Readback	Immediate Status	Latched Status			High Limit Readback	Immediate Status	Latched Status		
Temperature 1	value °C	DISABLED	Label °C	OK	OK	Humidity 1	value %	DISABLED	Label %	OK	OK
Temperature 2	value °C	DISABLED	Label °C	OK	OK	Humidity 2	value %	DISABLED	Label %	OK	OK
Temperature 3	value °C	DISABLED	Label °C	OK	OK	Humidity 3	value %	DISABLED	Label %	OK	OK
Temperature 4	value °C	DISABLED	Label °C	OK	OK	Humidity 4	value %	DISABLED	Label %	OK	OK
Temperature 5	value °C	DISABLED	Label °C	OK	OK	Humidity 5	value %	DISABLED	Label %	OK	OK
Temperature 6	value °C	DISABLED	Label °C	OK	OK	Humidity 6	value %	DISABLED	Label %	OK	OK
Temperature 7	value °C	DISABLED	Label °C	OK	OK	Humidity 7	value %	DISABLED	Label %	OK	OK
Temperature 8	value °C	DISABLED	Label °C	OK	OK	Humidity 8	value %	DISABLED	Label %	OK	OK
Temperature 9	value °C	DISABLED	Label °C	OK	OK	Humidity 9	value %	DISABLED	Label %	OK	OK
Temperature 10	value °C	DISABLED	Label °C	OK	OK	Humidity 10	value %	DISABLED	Label %	OK	OK
Temperature 11	value °C	DISABLED	Label °C	OK	OK	Humidity 11	value %	DISABLED	Label %	OK	OK
Temperature 12	value °C	DISABLED	Label °C	OK	OK	Humidity 12	value %	DISABLED	Label %	OK	OK
Temperature 13	value °C	DISABLED	Label °C	OK	OK	Humidity 13	value %	DISABLED	Label %	OK	OK
Temperature 14	value °C	DISABLED	Label °C	OK	OK	Humidity 14	value %	DISABLED	Label %	OK	OK
Temperature 15	value °C	DISABLED	Label °C	OK	OK	Humidity 15	value %	DISABLED	Label %	OK	OK
Temperature 16	value °C	DISABLED	Label °C	OK	OK	Humidity 16	value %	DISABLED	Label %	OK	OK
Temperature 17	value °C	DISABLED	Label °C	OK	OK	Humidity 17	value %	DISABLED	Label %	OK	OK
Temperature 18	value °C	DISABLED	Label °C	OK	OK	Humidity 18	value %	DISABLED	Label %	OK	OK
Temperature 19	value °C	DISABLED	Label °C	OK	OK	Humidity 19	value %	DISABLED	Label %	OK	OK
Temperature 20	value °C	DISABLED	Label °C	OK	OK	Humidity 20	value %	DISABLED	Label %	OK	OK
Temperature 21	value °C	DISABLED	Label °C	OK	OK	Humidity 21	value %	DISABLED	Label %	OK	OK
Temperature 22	value °C	DISABLED	Label °C	OK	OK	Humidity 22	value %	DISABLED	Label %	OK	OK
Temperature 23	value °C	DISABLED	Label °C	OK	OK	Humidity 23	value %	DISABLED	Label %	OK	OK
Temperature 24	value °C	DISABLED	Label °C	OK	OK	Humidity 24	value %	DISABLED	Label %	OK	OK

Nitrogen Volume

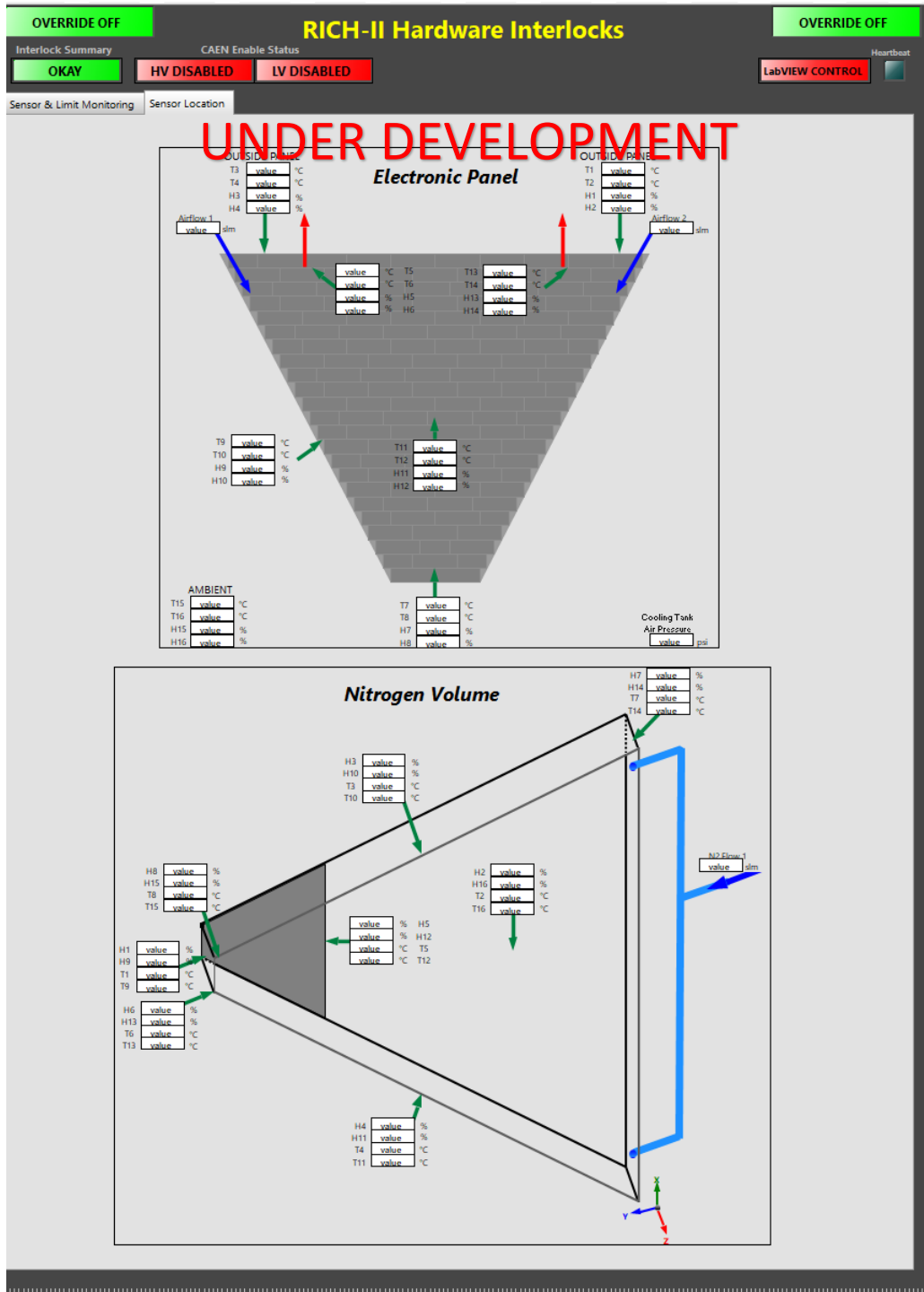
		High Limit Readback	Immediate Status	Latched Status			High Limit Readback	Immediate Status	Latched Status		
Temperature 25	value °C	DISABLED	Label °C	OK	OK	Humidity 25	value %	DISABLED	Label %	OK	OK
Temperature 26	value °C	DISABLED	Label °C	OK	OK	Humidity 26	value %	DISABLED	Label %	OK	OK
Temperature 27	value °C	DISABLED	Label °C	OK	OK	Humidity 27	value %	DISABLED	Label %	OK	OK
Temperature 28	value °C	DISABLED	Label °C	OK	OK	Humidity 28	value %	DISABLED	Label %	OK	OK
Temperature 29	value °C	DISABLED	Label °C	OK	OK	Humidity 29	value %	DISABLED	Label %	OK	OK
Temperature 30	value °C	DISABLED	Label °C	OK	OK	Humidity 30	value %	DISABLED	Label %	OK	OK
Temperature 31	value °C	DISABLED	Label °C	OK	OK	Humidity 31	value %	DISABLED	Label %	OK	OK
Temperature 32	value °C	DISABLED	Label °C	OK	OK	Humidity 32	value %	DISABLED	Label %	OK	OK
Temperature 33	value °C	DISABLED	Label °C	OK	OK	Humidity 33	value %	DISABLED	Label %	OK	OK
Temperature 34	value °C	DISABLED	Label °C	OK	OK	Humidity 34	value %	DISABLED	Label %	OK	OK
Temperature 35	value °C	DISABLED	Label °C	OK	OK	Humidity 35	value %	DISABLED	Label %	OK	OK
Temperature 36	value °C	DISABLED	Label °C	OK	OK	Humidity 36	value %	DISABLED	Label %	OK	OK
Temperature 37	value °C	DISABLED	Label °C	OK	OK	Humidity 37	value %	DISABLED	Label %	OK	OK
Temperature 38	value °C	DISABLED	Label °C	OK	OK	Humidity 38	value %	DISABLED	Label %	OK	OK
Temperature 39	value °C	DISABLED	Label °C	OK	OK	Humidity 39	value %	DISABLED	Label %	OK	OK
Temperature 40	value °C	DISABLED	Label °C	OK	OK	Humidity 40	value %	DISABLED	Label %	OK	OK
Temperature 41	value °C	DISABLED	Label °C	OK	OK	Humidity 41	value %	DISABLED	Label %	OK	OK
Temperature 42	value °C	DISABLED	Label °C	OK	OK	Humidity 42	value %	DISABLED	Label %	OK	OK
Temperature 43	value °C	DISABLED	Label °C	OK	OK	Humidity 43	value %	DISABLED	Label %	OK	OK
Temperature 44	value °C	DISABLED	Label °C	OK	OK	Humidity 44	value %	DISABLED	Label %	OK	OK
Temperature 45	value °C	DISABLED	Label °C	OK	OK	Humidity 45	value %	DISABLED	Label %	OK	OK
Temperature 46	value °C	DISABLED	Label °C	OK	OK	Humidity 46	value %	DISABLED	Label %	OK	OK
Temperature 47	value °C	DISABLED	Label °C	OK	OK	Humidity 47	value %	DISABLED	Label %	OK	OK
Temperature 48	value °C	DISABLED	Label °C	OK	OK	Humidity 48	value %	DISABLED	Label %	OK	OK

Gas System

		Low Limit Readback	Immediate Status	Latched Status
AirFlow 1	value sim	DISABLED	Label sim	OK
AirFlow 2	value sim	DISABLED	Label sim	OK
Air Pressure	value psi	DISABLED	Label psi	OK
N2 Flow	value sim	DISABLED	Label sim	OK

Export Interface

Screenshot of list-view tab of user screen in CSS editor



Screenshot of sensor location graphical view of tab of user screen in CSS editor. Sensor locations displayed on screenshot are for first RICH sector and will be updated for RICH-II.