



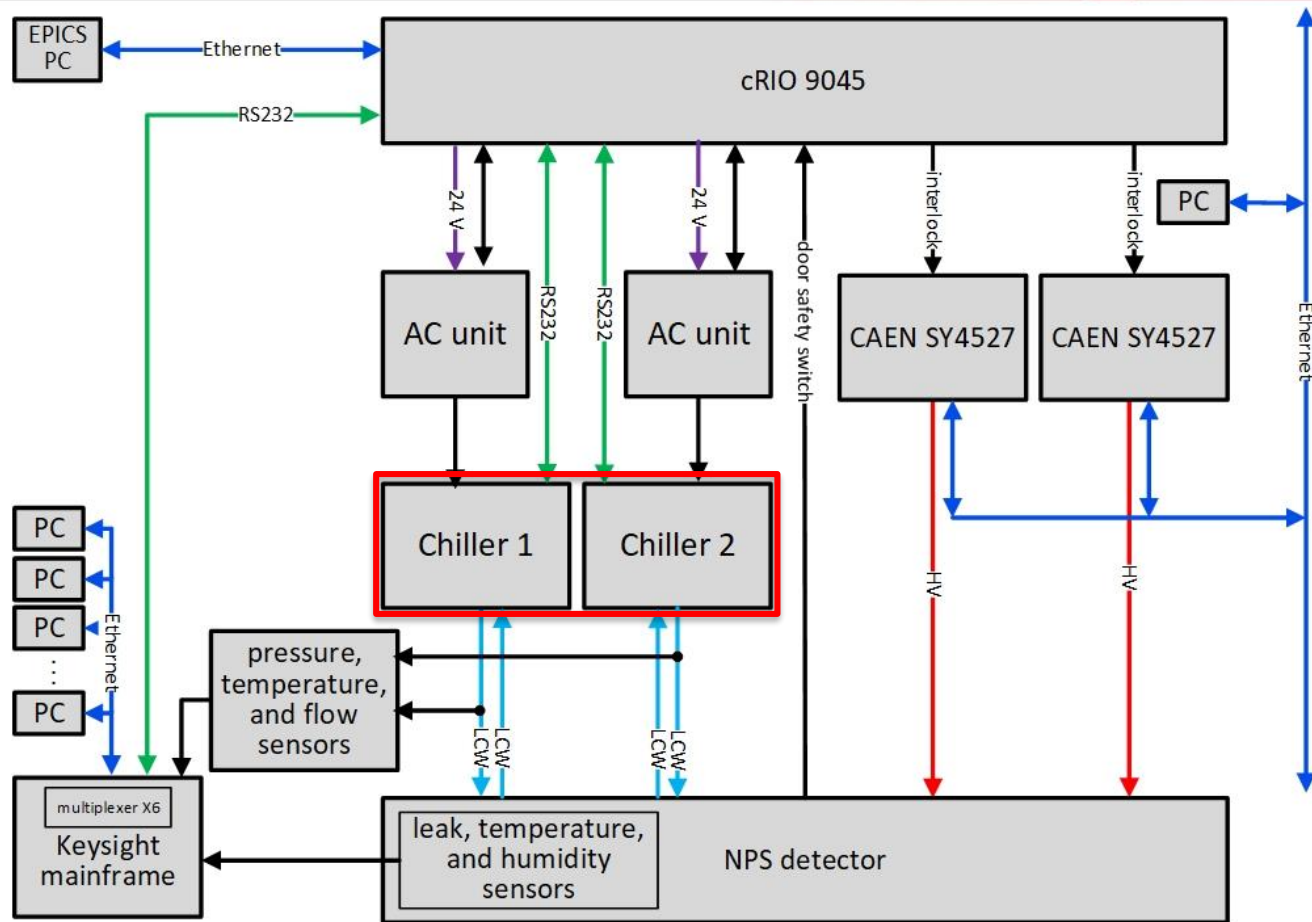
DSG NPS Status Update

Aaron Brown and the
Detector Support Group
March 17, 2022

Contents

- Hardware interlock system
 - Signal monitoring
 - Chiller communication
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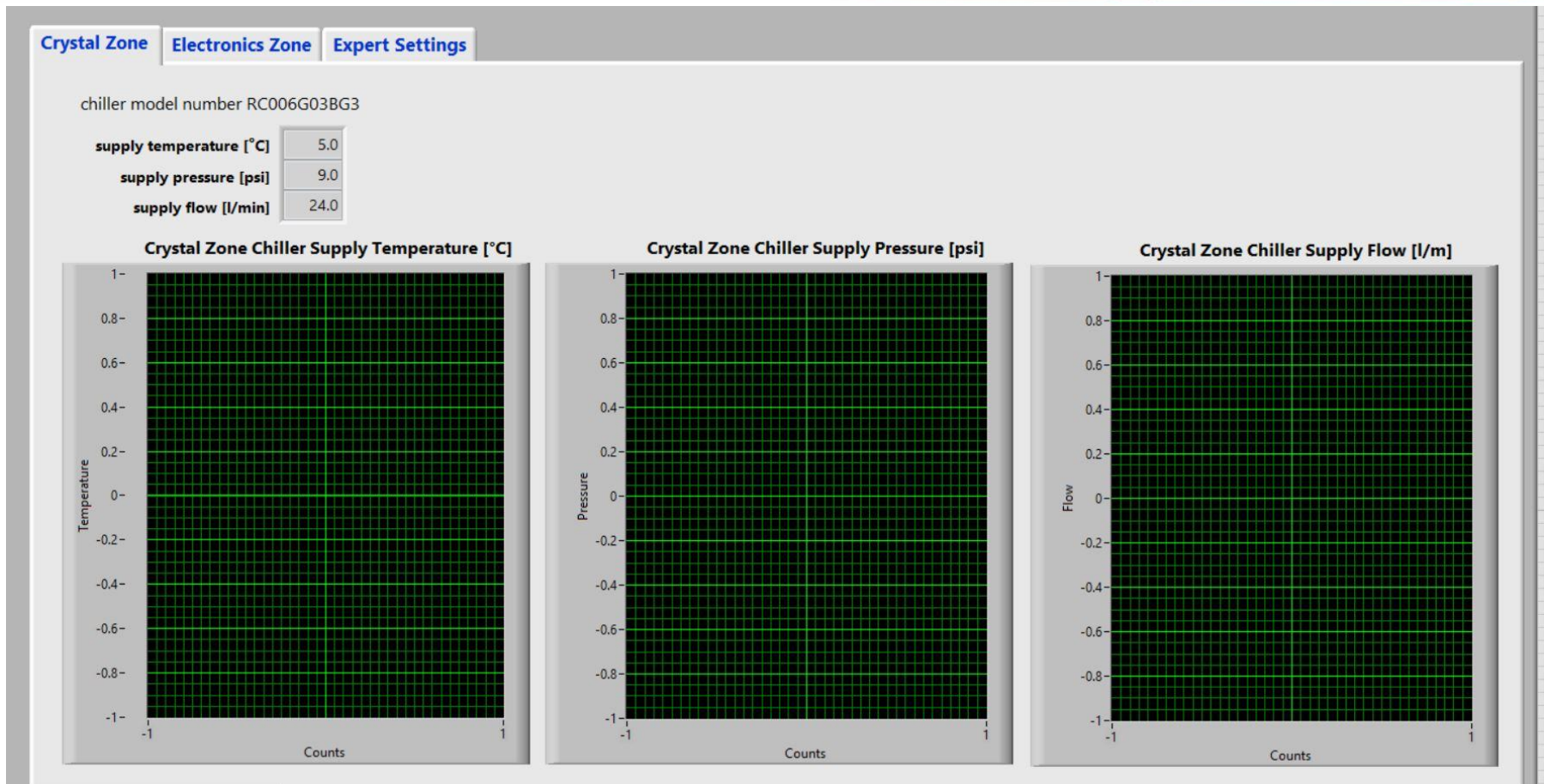
Hardware Interlock System Layout - Details



NPS Hardware Interlock System
M. A. Antonoli
7/21/21

- Hardware interlock system layout [DSG Note 2021-15](#)

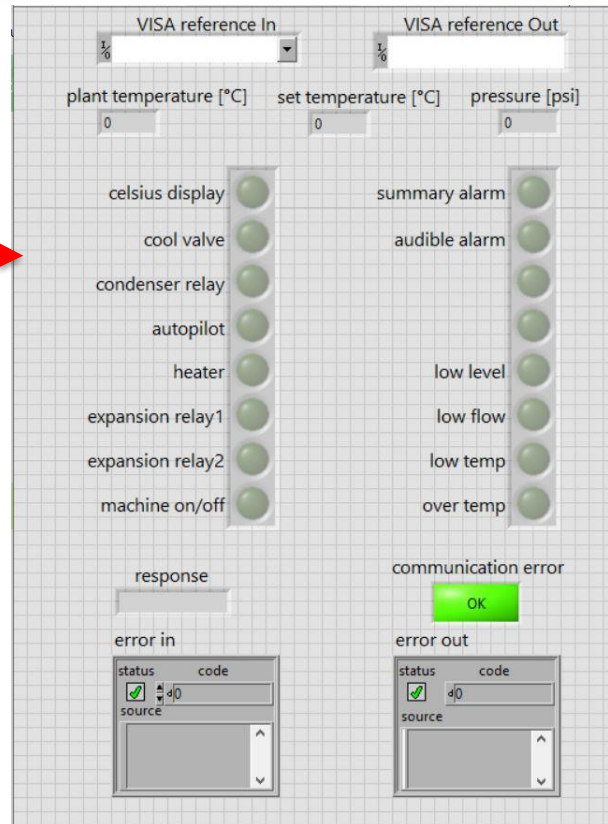
Signal Monitoring



- LabVIEW screen to monitor chiller outlet temperature, pressure, and flow rate
 - Software progress report by Mary Ann Antonioli

Chiller Communication

“read chiller status” device driver →



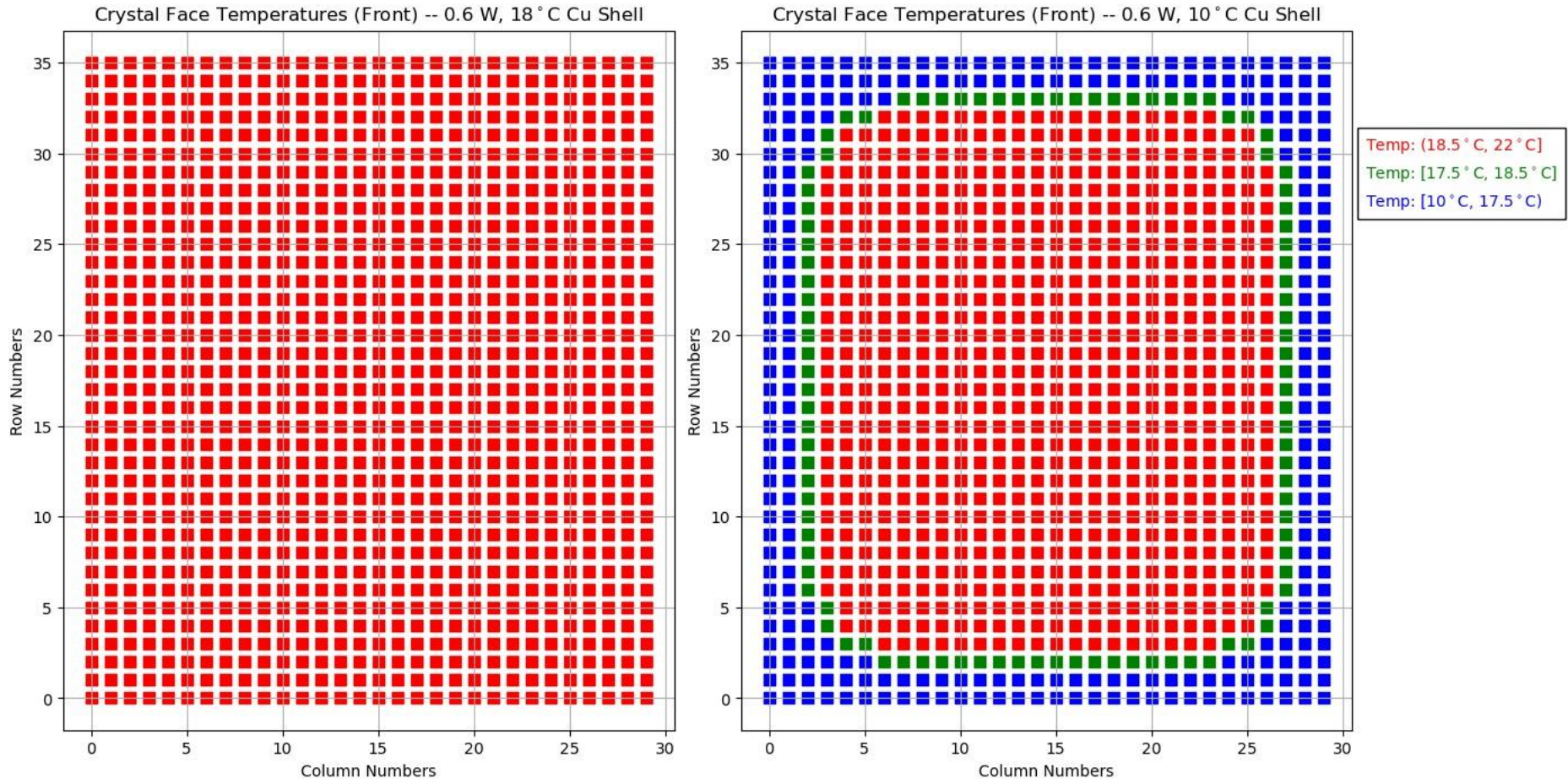
- LabVIEW driver developed to communicate with chiller
- LED indicators for status bits
 - Software progress by Mary Ann Antonioli

Process Variable List Development

LabVIEW variable	PV (EPICS)	Sensor ty	Sensor location	Unit	Keysight char	Access	Data type	Comments				
	hcnp _s _cz_rear_temps_avg_all											
CZ Thermocouples Back 1	hcnp _s _cz_thermocouples_back_1						Array of Double	array of first 28 back crystal zone temperature values				
	hcnp _s _cz_rear_temp1	K-type tc	cz rear - crystal #: 0	C	1001	Read	Double-precision float					
	hcnp _s _cz_rear_temp2	K-type tc	cz rear - crystal #: 5	C	1002	Read	Double-precision float					
	hcnp _s _cz_rear_temp3	K-type tc	cz rear - crystal #: 10	C	1003	Read	Double-precision float					
	hcnp _s _cz_rear_temp4	K-type tc	cz rear - crystal #: 15	C	1004	Read	Double-precision float					
	hcnp _s _cz_rear_temp5	K-type tc	cz rear - crystal #: 20	C	1005	Read	Double-precision float					

- Developing list of 175+ EPICS process variables (PVs)

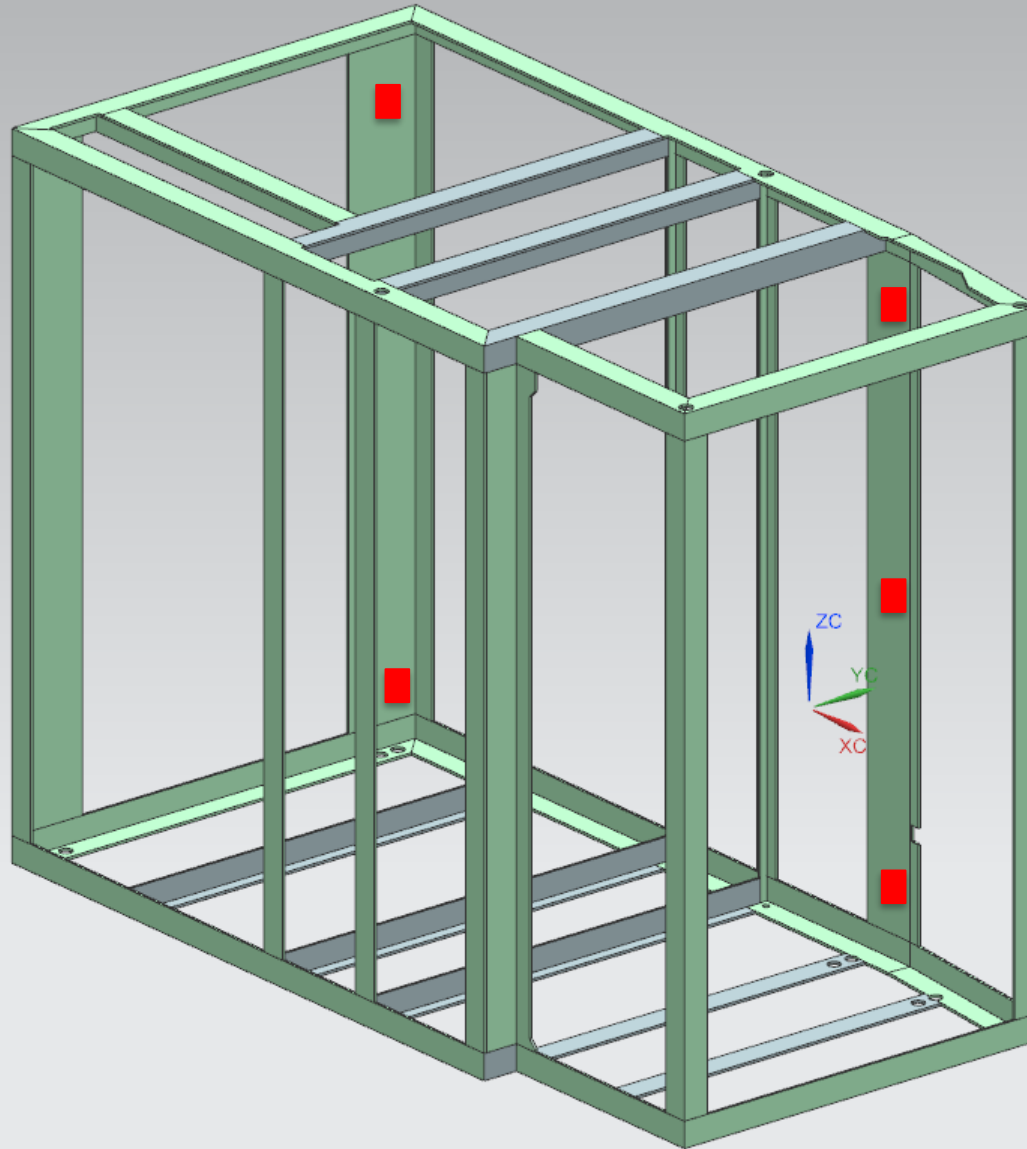
Ansys Thermal Analysis



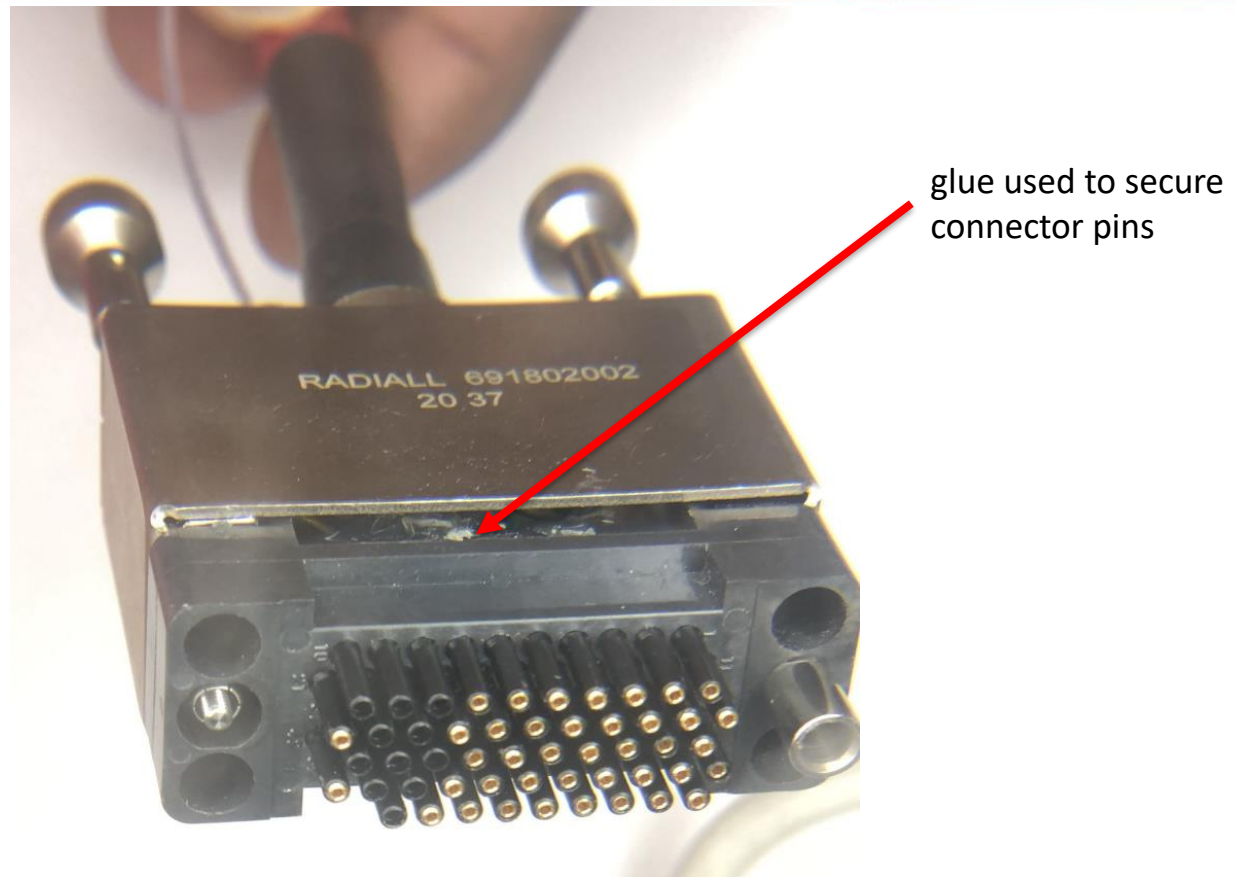
- Central crystal zone temperature dependent on ambient temperature

Frame Temperature and Humidity Sensor Placement

Tentative temperature and humidity sensor placement within detector frame



High Voltage Supply Cables



- Glue added to Radiall connector pins
- Glue prevents pins from being pushed back into connector housing

Conclusion

- DSG is contributing to all phases of detector development

Thank You!