



U.S. DEPARTMENT OF  
**ENERGY**



# DSG NPS Update

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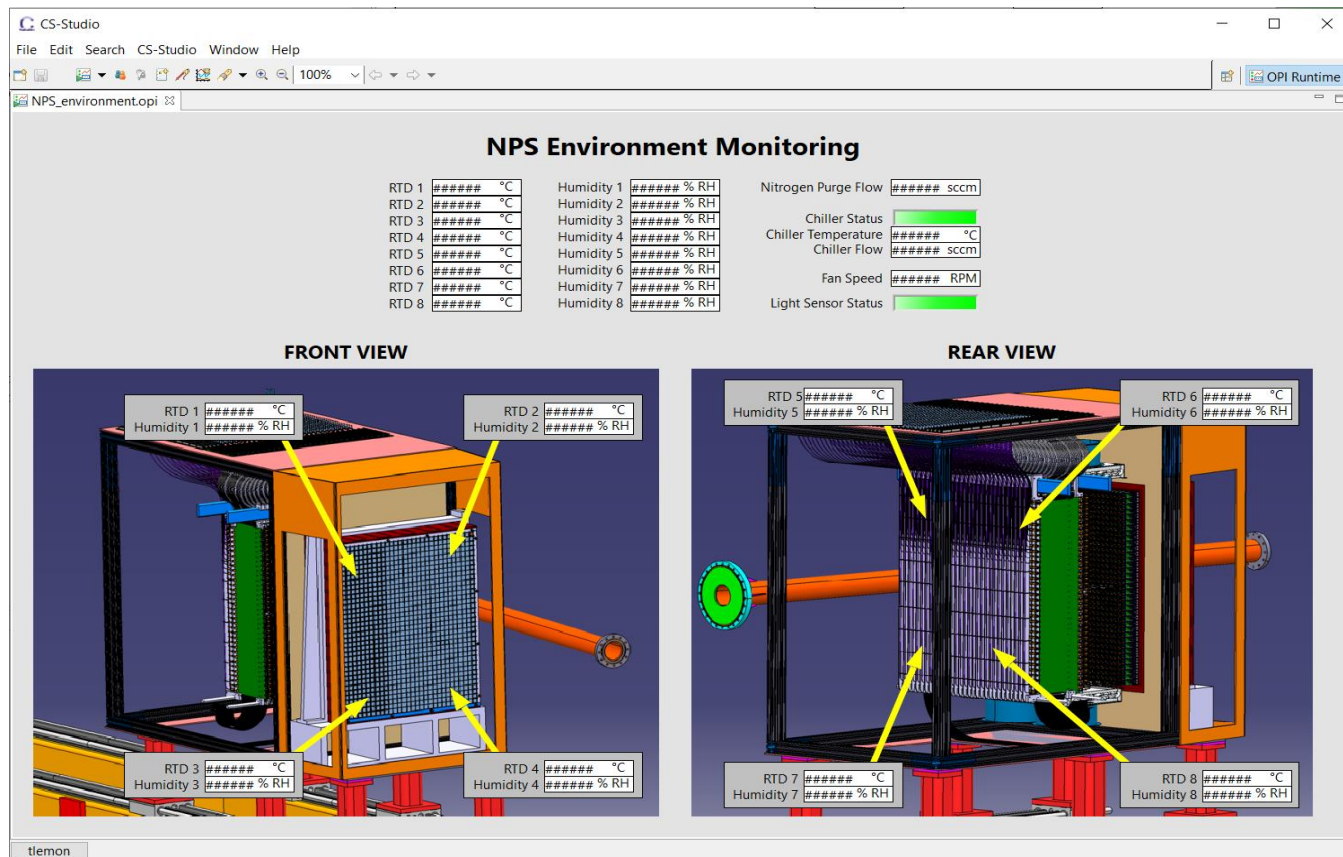
- Fabrication, Procurement, and Testing
- HV Rating Concerns and Research
  - HV Schematic
  - HV Connection Parts List
- Conclusion

# DSG NPS Work Update

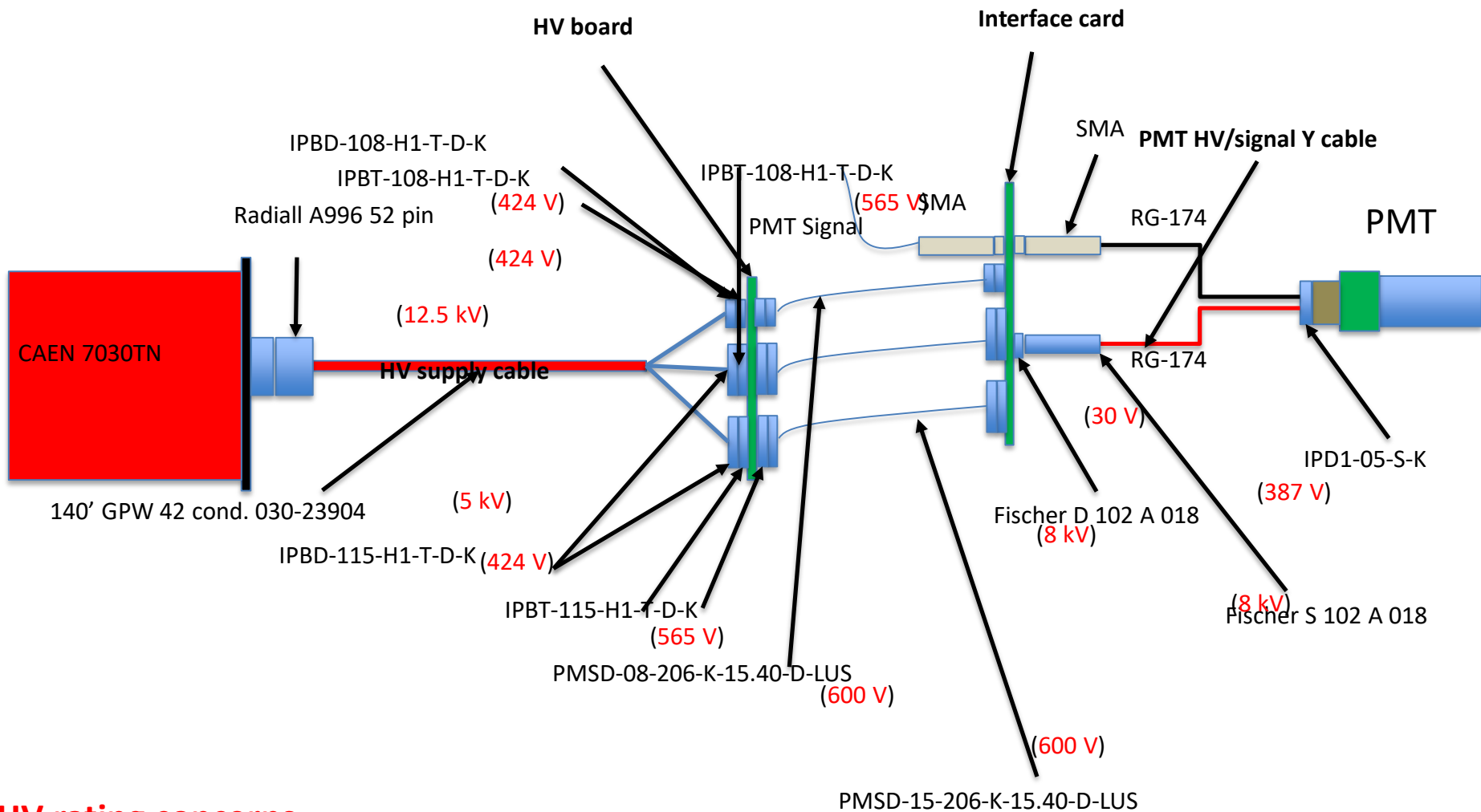
- **HV divider cables fabrication status**
  - 700 of 1100 fabricated
- **Procurement status for HV, multi-conductor, cable fabrication**
  - From CAEN: 40 Radiall 52-pin connectors, insertion/extraction tool, and crimper tool
    - PR submitted and signed, lead time of ~12 weeks
    - Assigned buyer: Albert DeChristopher
  - From General Wire Products: Forty-two 42-conductor cables
    - Cut to 142'
    - PR submitted, lead time of 4-5 weeks
    - Assigned buyer: Jami Anthony
- **CAEN voltage stability testing**
  - All 34 modules tested with **GECO 2020**
    - All channels of 12 modules passed testing
    - Eighteen modules have at least *one problem channel*
    - Four modules have major problems
  - 22 of 34 modules tested with **EPICS**
    - Analyzing data

# DSG NPS Work Update (cont'd)

- EPICS Controls & Monitoring screens development
  - Environment monitoring screens
  - Voltage and current readback screen
- Researching sensors and related instrumentation for environment monitoring



# HV Connection Schematic



**HV rating concerns**  
 Researching alternates

# NPS Cable Components

NPS Assembly/Board	Component	Part Number	Voltage Rating
HV supply cable	CAEN HV connector	Radiall A996 52 pin	12.5 kV
	HV 42-conductor cable	GWP 030-23904	5 kV
	Samtec 8-pin (male cable mount)	IPBD-08-D-K	424 V
	Samtec 15-pin (male cable mount)	IPBD-15-D-K (x2)	424 V
HV board	Samtec 8-pin (female PCB mount)	IPBT-108-H1-T-D-K (1/side of patch panel)	565 V
	Samtec 15-pin (female PCB mount)	IPBT-115-H1-T-D-K (2/side of patch panel)	565 V
Samtec ribbon cables	Samtec 8-conductor ribbon cable	PMSD-08-206-K-15.40-D-LUS	600 V
	Samtec 15-conductor ribbon cable	PMSD-15-206-K-15.40-D-LUS (x2)	600 V
Interface card	Samtec 8 pin (female PCB mount)	IPBT-108-H1-T-D-K	565 V
	Samtec 15 pin (female PCB mount)	IPBT-115-H1-T-D-K (x2)	565 V
	Fischer jack connector	D 102 A018	8 kV
	SMA right angle jack	142-0701-501 (1/side of patch panel)	335 V
PMT HV/signal Y cable	Fischer plug connector	S 102 A018	8 kV
	SMA female cable mount	R19-003-04-032611011 (1/side of patch panel)	335 V
	Coax cable	RG-174u	30 V
	Samtec 5-pin male connector	IPD1-05-S-K	387 V

# Conclusion

- HV divider cable fabrication ongoing
- Procurement of HV cable components underway
- Controls & Monitoring screens development progressing

**Thank You**