

## DSG-NPS R&D Meeting Minutes

**Date: July 05, 2022**

**Time: 11:00AM – 12:00PM**

*Attendees: Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Tyler Lemon, and Marc McMullen*

### **1. Hardware Interlock System LabVIEW Program Development**

*Mary Ann Antonioli, Peter Bonneau, Aaron Brown, and Tyler Lemon*

1. Discussed issues with data binding local variables to network variables
  - There are nine front panel displays that are greyed out due to problems with data binding
  - Error message received states a “failure to coerce”
  - Problem possibly due to network variable data types being clusters of variants
  - Aaron and Tyler will look into this issue

### **2. Chiller communication testing**

*Aaron Brown and Tyler Lemon*

1. Aaron and Tyler were able to establish communication with the chiller after updating the firmware for the cRIO and downloading packages to enable communication with the serial module
  - Aaron will find out the type of coolant to be used by the NPS collaboration and the type of pipe fittings needed to run the chiller for communication testing

### **3. CAEN high voltage settings**

*Aaron Brown*

1. Reviewed Python GUI developed to set high voltage settings for all channels of all modules
  - Each field was changed to automatically be populated with last value
  - Brian suggests leaving all fields blank and only updating those fields which receive an input value
  - Will investigate whether or not CAEN modules will accept negative values as input; if so, this will need to be compensated for

### **4. Ansys Fluent Fluid Thermal Simulation**

*Pablo Campero, Brian Eng, Scott Marinus, and Marc McMullen*

1. Reviewed simulation with detector model developed by Marc McMullen using 1000 W heat load and one single fan rotating at 1600 RPM
  - From the velocity contour plot, it appears that the air is being sucked in from around the body of the heat exchanger to the fan and not *through* the body of the heat exchanger
  - Scott recommends creating a well-defined boundary between the wall of the fan enclosure and the surrounding air volume, and changing the position of the fan to eliminate any leak paths