

DSG-EIC DIRC Meeting

Date: October 24, 2022

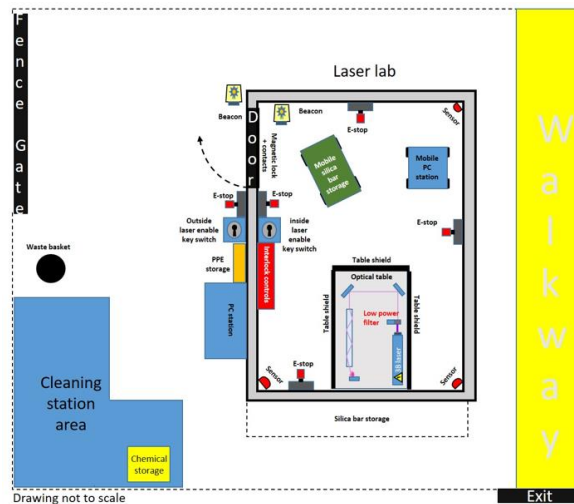
Time: 11:00 AM – 12:00 PM

Attendees: Peter Bonneau, Aaron Brown, Imani Burton, Pablo Campero, Brian Eng, Greg Kalicy, Tyler Lemon, Marc McMullen, Joe Schwiening, Jennifer Williams, and Beni Zihlmann

1. EEL 108 sub-room details and test area layout

Walt Akers, Aaron Brown, Greg Kalicy, Tyler Lemon, Marc McMullen, and Beni Zihlmann

1. Sub-room will have electrical services
2. Ceiling will be dropped, with lighting
3. Options for ventilation being considered
 - Portable AC unit with ducting
 - Window unit installed into wall
 - Ventilation fans to push ambient air into sub-room
4. Network connection ports will be available in sub-room
5. Cleaning area will be enclosed by an 8' x 8' portable, clean room
 - Clean room is a roof structure with HEPA ventilation over area, with plastic walls

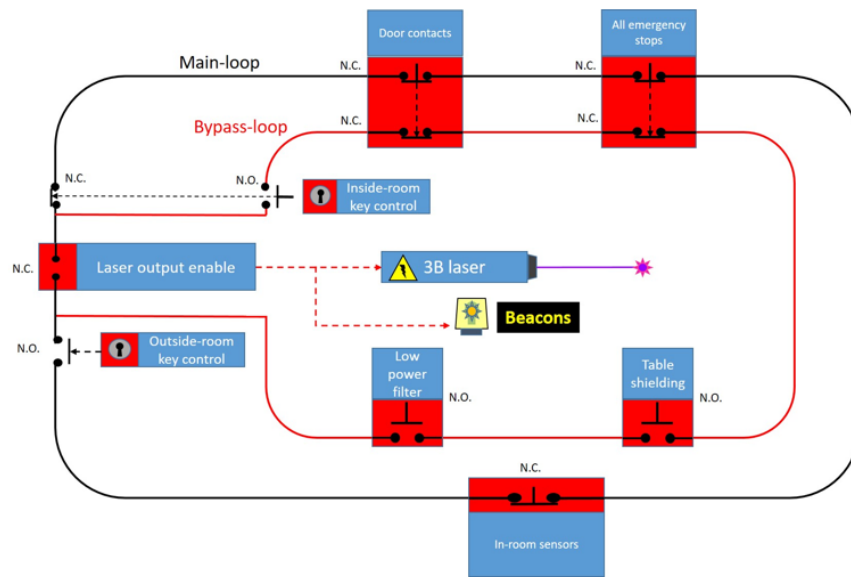


Sketch diagram of potential EEL 108 and sub-room layout.

2. Design of interlock system for laser area is in progress

Tyler Lemon and Marc McMullen

1. Initial system diagram developed
2. System will allow for a loop that bypasses the occupancy interlock and also automatically installs a filter to lower the laser power to ~0.5 mW
3. Actions that will cause an interlock and shut down system
 - Pressing any emergency stop button
 - Opening of door to sub-room
 - Low-power filter not in place with bypass loop active
 - Key is not present in outside enable switch without bypass loop active
 - Occupancy of room detected without bypass loop active
 - How to determine/control room occupancy is under investigation

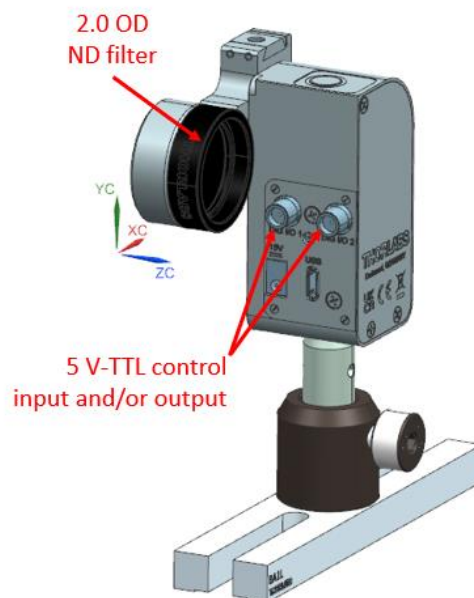


System diagram of laser interlock system showing main loop and bypass loop.

3. Low-power filter for alignment

Tyler Lemon and Marc McMullen

1. Propose using an absorptive, neutral density filter on a motorized flip mount
 - Filter will have an optical density of 2.0 to reduce laser power to 1/100th of its original power
 - Motorized flip mount will be tied into laser interlock system and automatically move into place if bypass loop is active



NX12 model of proposed filter setup. In model, filter would be in place in front of laser. When it is moved out of place, it would rotate -90° around the z-axis so filter is vertical.

4. Test station DAQ

Tyler Lemon

1. Keithley 2010 multimeter with scan card preferred due to its local readout display
 - Digital multimeter with scan card accessory for reading multiple channels with the same meter
 - Ten analog input channels that can measure voltage or current
2. Other options being investigated in case lead time of Keithley multimeter is prohibitive

5. Items to begin procuring

Greg Kalicy, Tyler Lemon, and Beni Zihlmann

1. Interlock system components
 - Beacons
 - Key switches
 - Emergency stop buttons
 - Indicator LEDs
 - Push buttons (for resetting interlocks)
 - Power supply
 - Magnetic door locks
2. Interlock circuit prototyping components
3. Tyler Lemon will send price list to Beni Zihlmann before submitting PR

6. In-person meeting will be held Monday, October 31 to discuss monitoring and/or controlling laser area occupancy