

Ionization Laser Update

Sowjanya, Jan
(LANL)

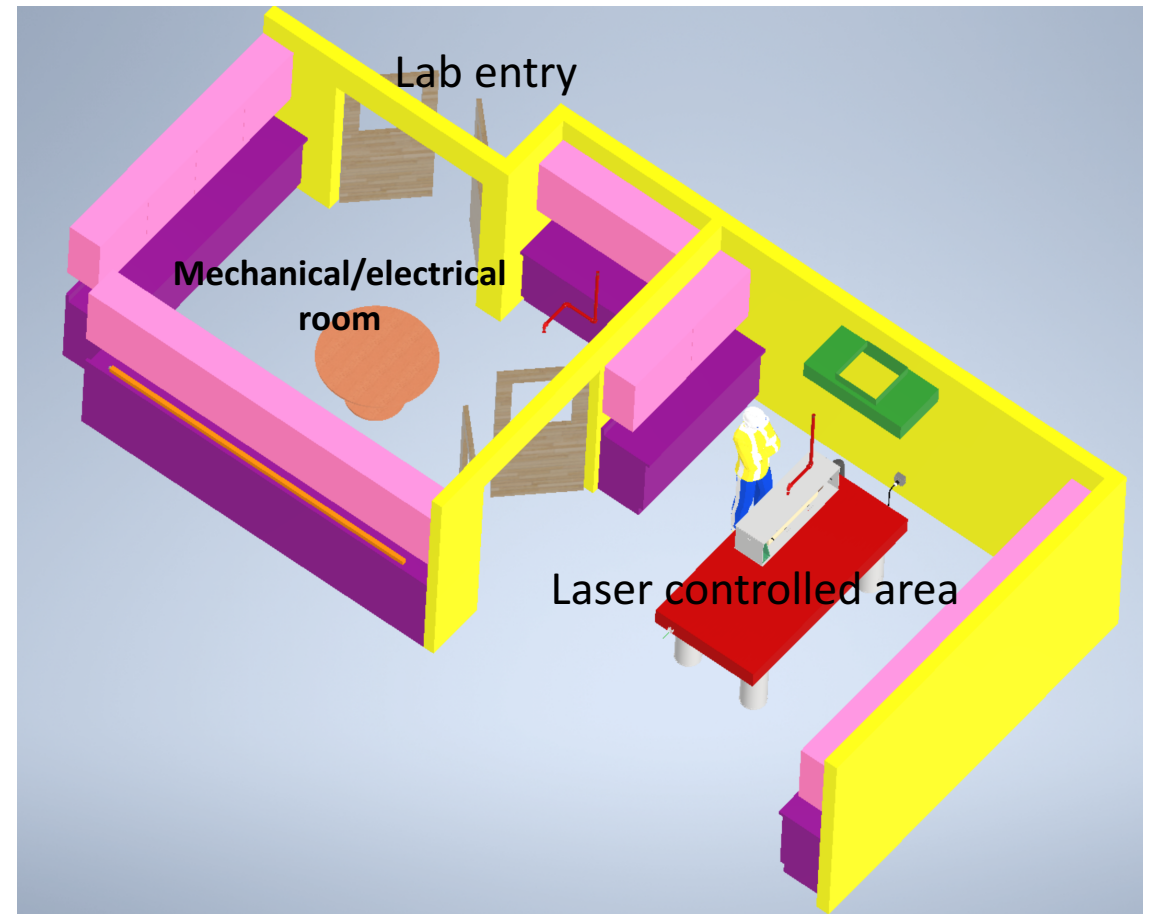
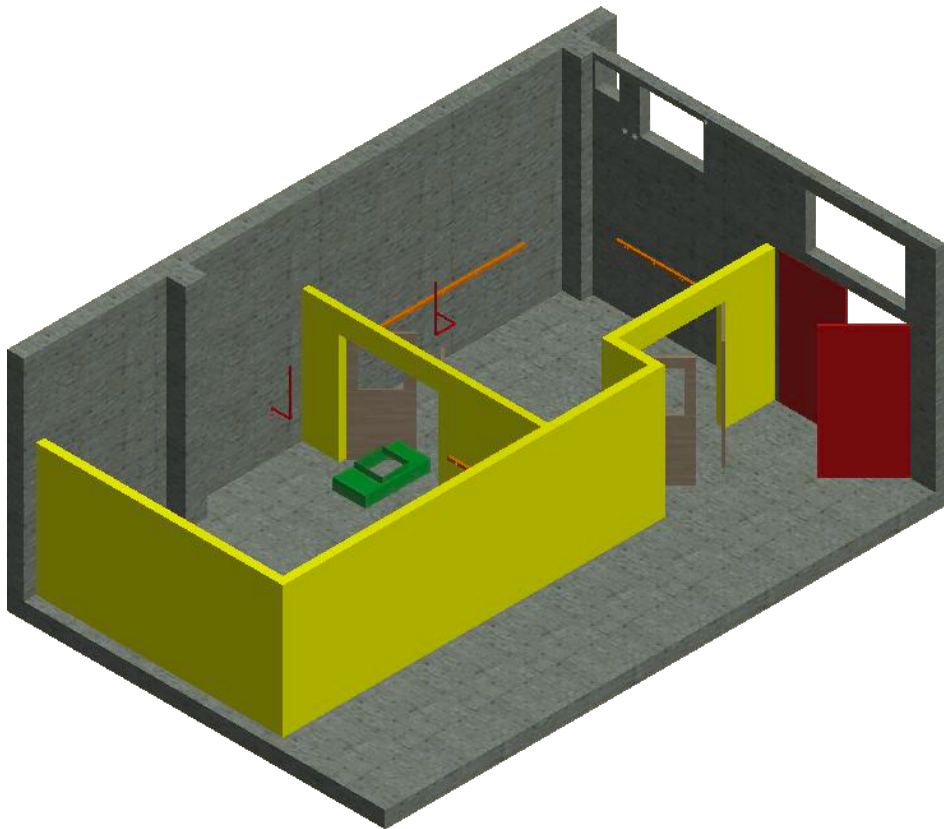
03/10/2020

Recent Work

- Recent work largely focused on laser lab work at LANL
 - Understanding laser lab requirements
 - Laser lab design
- New member joining LANL team soon: **Vern Sandberg**
 - Prior LANL employee; Later at Caltech and Hanford LIGO site
 - Brings a great deal of laser/optics (from LIGO) and electronics expertise (MiniBooNE)
- Procured some hardware for laser
- Some laser periscope design work

LANL Laser Lab Progress

- Space identified, cleaned out and going through renovation work (new walls, doors, cabinets etc.)
- New ceiling will take time, so initial laser work will proceed in a laser tent enclosure (procured for MiniCAPTAIN)



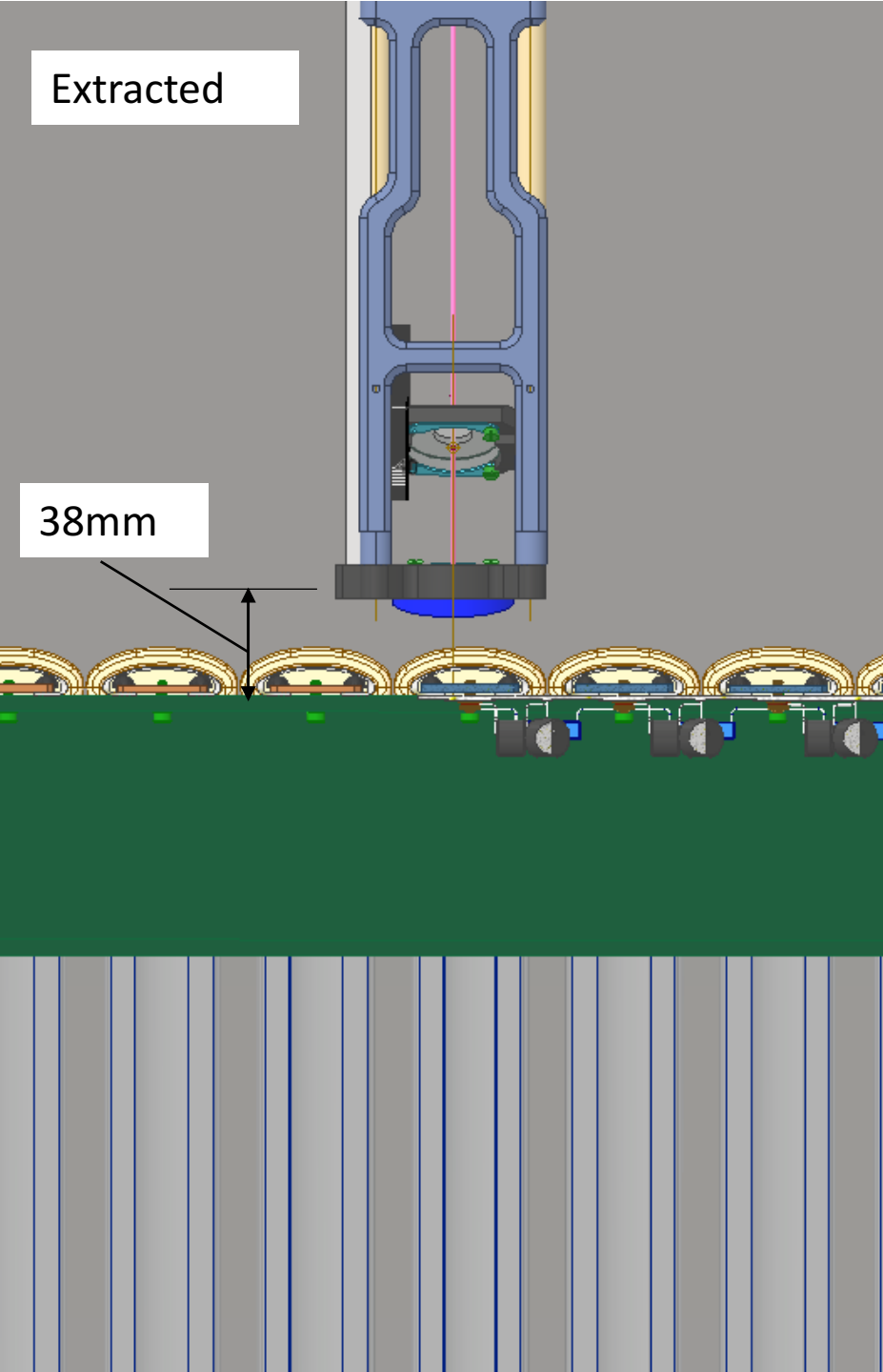
Lot of hardware being procured from MiniCAPTAIN

- Quantel “Brilliant B” Class-IV Nd-Yag laser with a power output of 90 mJ at 10Hz, 5 ns pulse width at 266 nm.
 - Need to check what condition it is in, may require some maintenance
 - Not the exact model that we want, but can come in handy for local testing at LANL
- Lot of optical components previously used by MiniCAPTAIN
- Primary optical table (4x8 ft) and a tent enclosure (~8x8x8 ft)
- An assortment of smaller optical tables also procured from MiniCAPTAIN and from other labs during cleanout

Inclinometers for ProtoDUNE

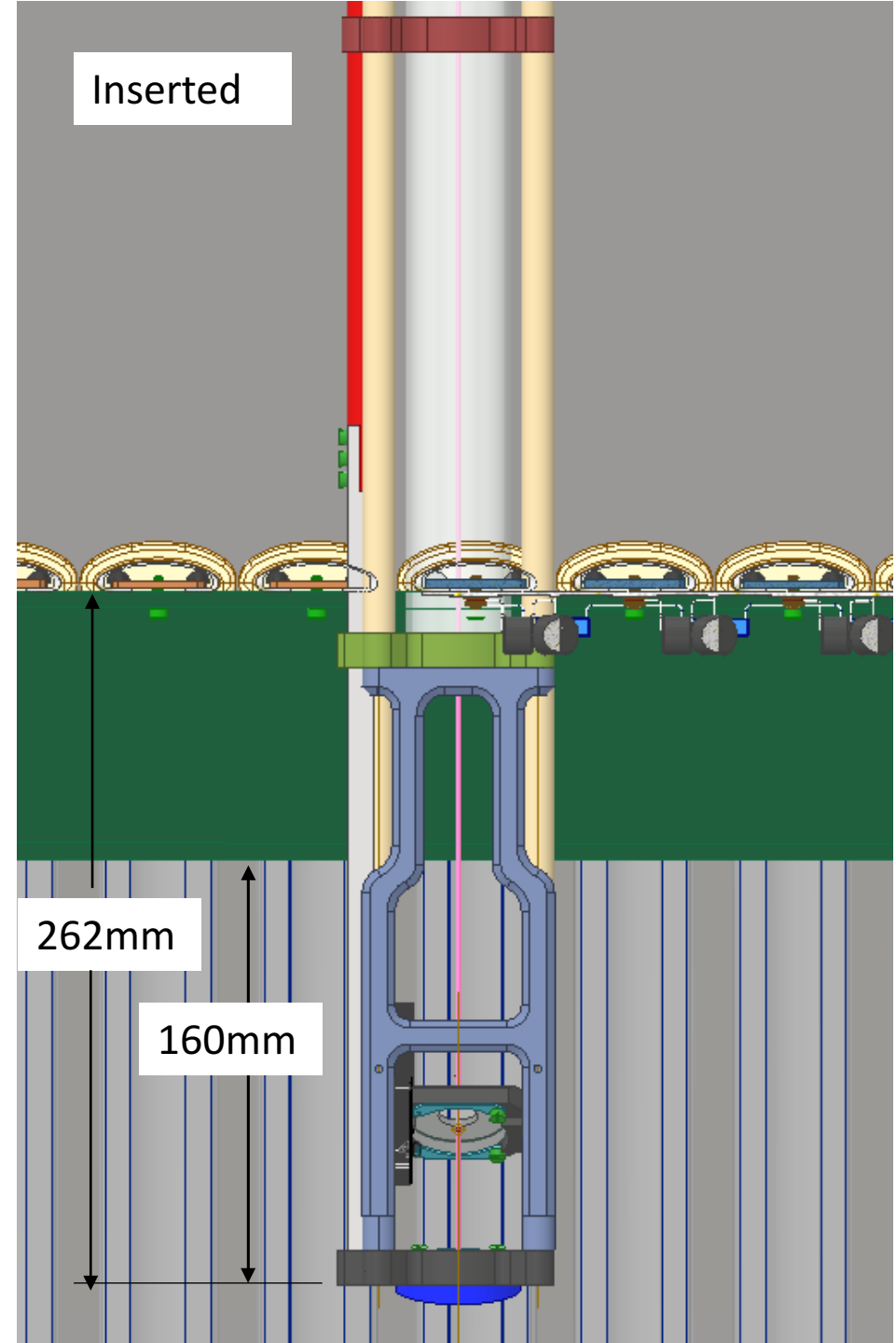
- 4 inclinometers (\$250 each) and cables from CTi Sensors are being procured at LANL to be installed in ProtoDUNE
 - Order went out yesterday, will ship in 4 days
 - After checking with vendor, decided to not go with the wireless option
- They will be sent to KSU for Glenn & team to develop the interface with a beagle bone motherboard
 - Work already in progress
- The plan is to send them to CERN before the current ProtoDUNE run ends





Current model of laser periscope installed in ProtoDUNE II

(Jan)



**Alternative idea
for electrical
insulation for the
laser periscope**

(Jan)



Vacuum
Break 6" ID

