

# Planning for the Laser Beam LocationSystem Scope Review

April 2<sup>nd</sup>, 2020

*1. Does the system have a well-justified role in safeguarding the far detectors and facilitating their operation, and if so, what is the minimum amount of system scope needed to carry out this role? (Cryogenic Instrumentation only)*

- Although aimed at cryogenic instrumentation, LBLS assures that laser beam follows expected range of motion
- Used in conjunction with the Io laser.
- Minimal scope would include dedicated detector for every two lasers within reach.

*Does the system have a well-justified role in facilitating the analysis of far detector data, and if so, what is the minimum amount of system scope required to fulfill this role?*

- Justified by the Io laser
- Minimal scope includes ability to detect beam spots from two lasers.

*Have all technical issues related to the feasibility of the system (including those raised in the previous workshops) been resolved?*

- Positioning of the system on the detector floor needs to be finalized
- Routing of the cables along the floor
- Exit ports for the cable signals

*Are there any risks to overall detector performance associated with the implementation of the system, and if so, is there a plan in place for mitigating these risks?*

- This is a passive system that does not require power source.
- No risk on the detector performance anticipated

*Is there a credible plan in place for demonstrating system performance in ProtoDUNE-II?*

- Plan under development. Requires:
  - Dedicated locations, close to APA (because of HV), under the field cage, out of the ground plan (should be OK)
  - Attachment method to the floor – cryogenic glue? (should be OK)
  - Routing of cables on the floor and along the wall (needs work)
  - Allocating (sharing) exit port for the cables (needs more work)
  - Read out system for the LBLS that needs to be integrated with the Slow Control (needs work)

*Does the functionality of the system justify its overall cost?*

- The cost of the system is modest.
- We will finalize the cost in the next couple of weeks.