Update on the Laser Beam Location System(LBLS)

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CALCI Meeting
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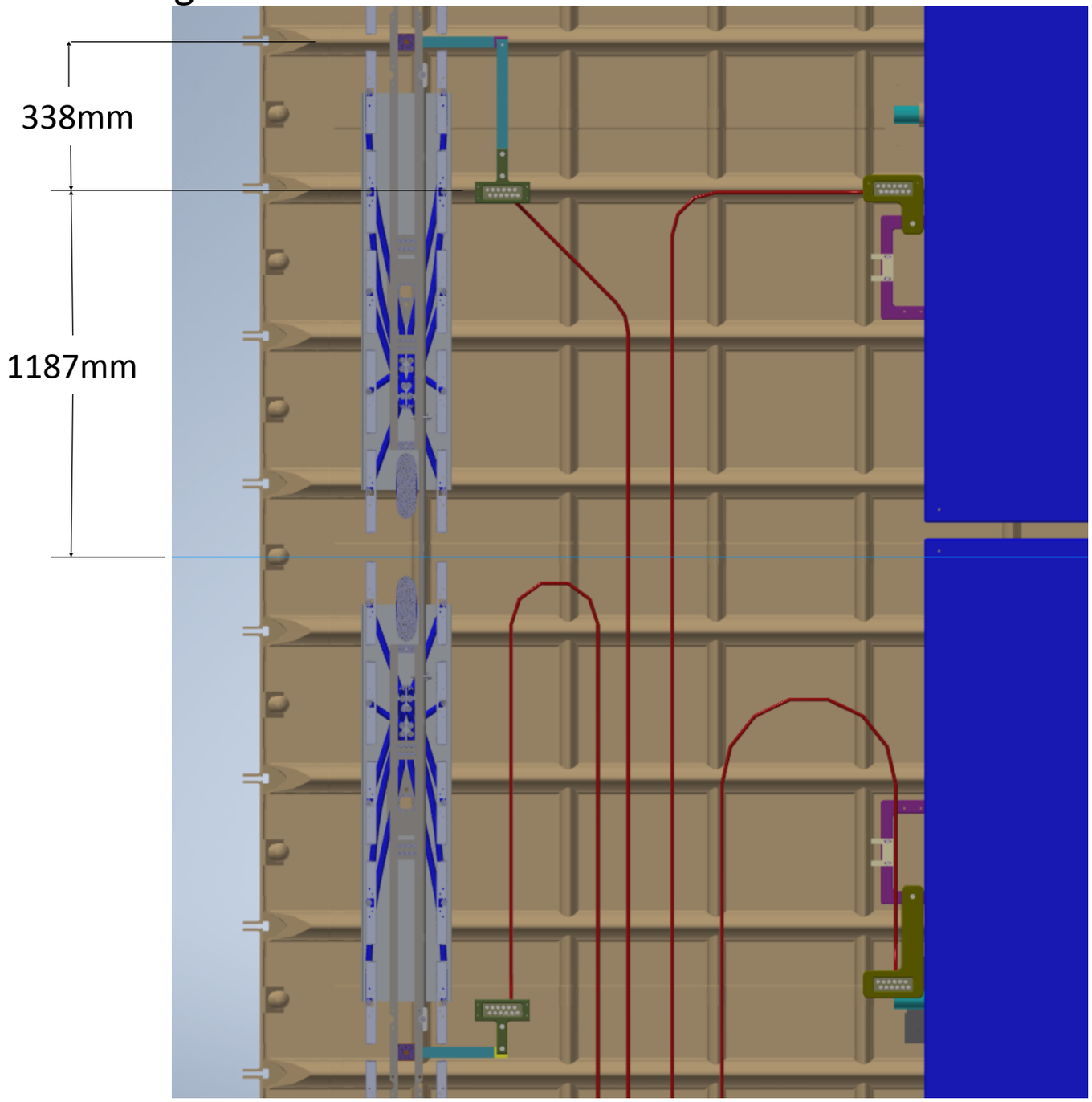
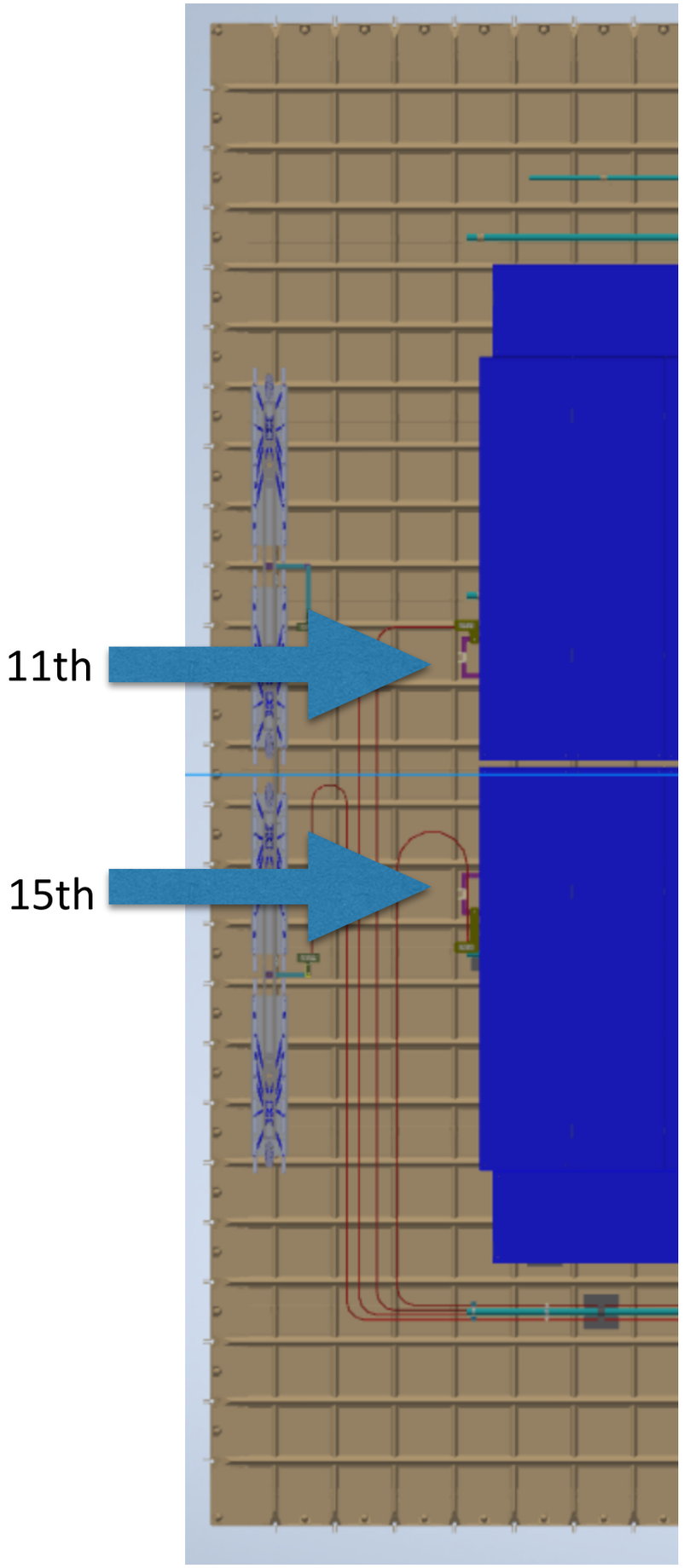
Travel and Installation Plan

- Current estimate end of Oct 31 week or Nov 7. In email contact with Daniela.
- Also Kevin (UH postdoc on DarkSide) and Mattia at CERN offer to help.

Installation Locations

- Only two slots for APA PIN diodes. For floor ones count the squares from edge

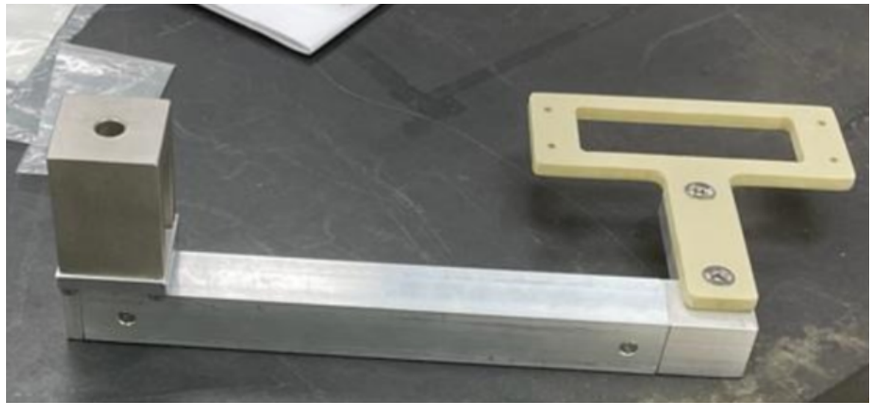


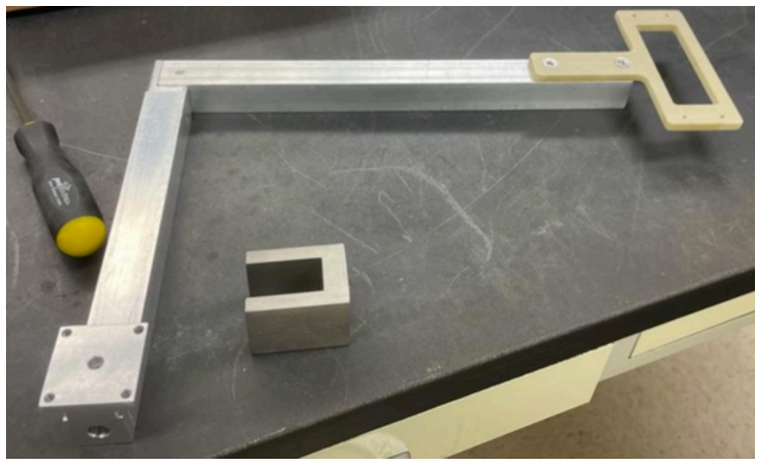


Jan Boissevain

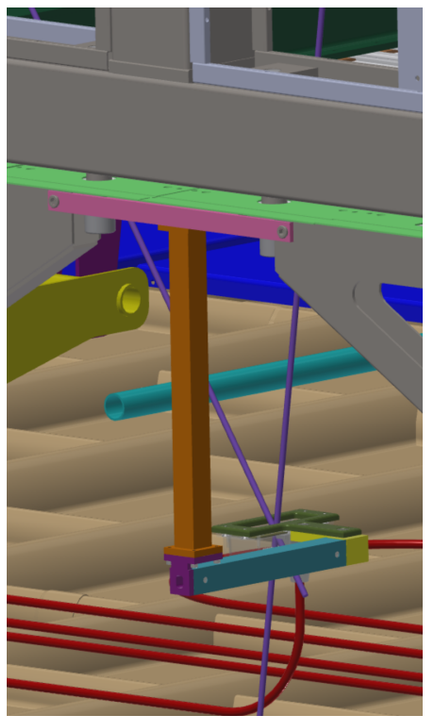
LBLS: Mounts and Diode Boxes

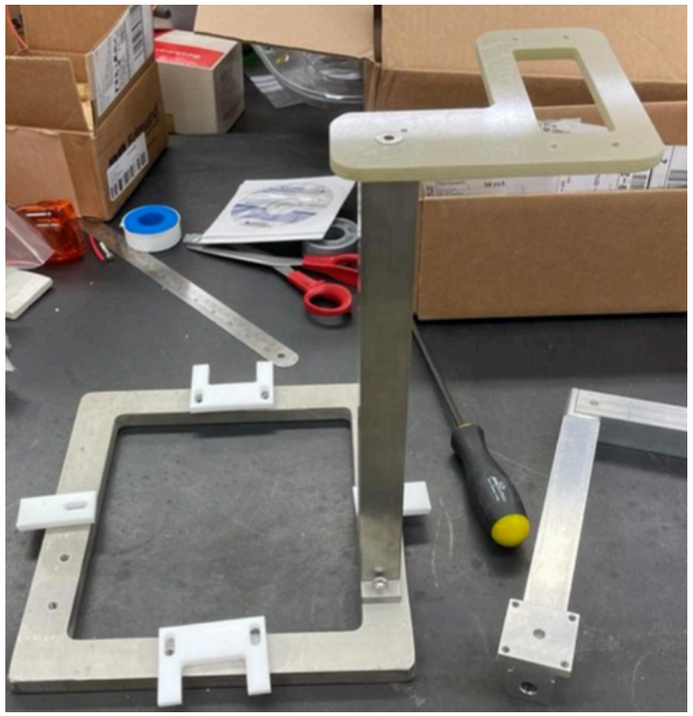
- All parts at CERN





- APA LBLS needs to be modified back from cold-box test

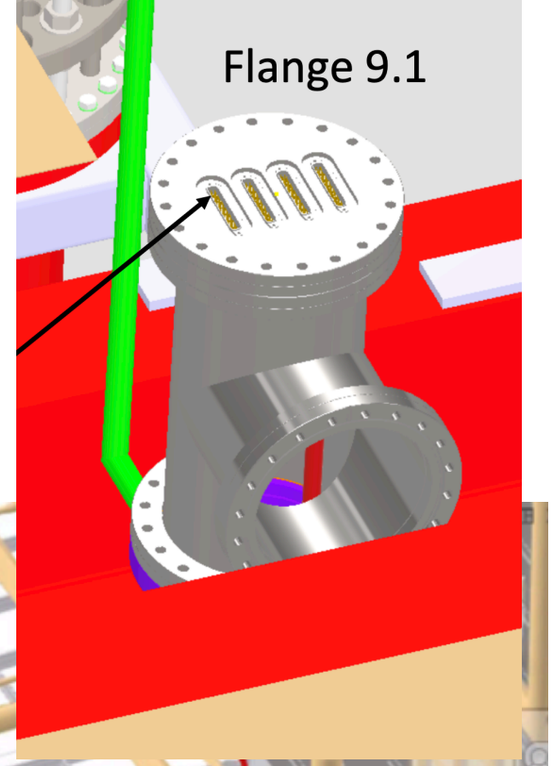




- Floor LBLS needs to be assembled and installed. Plan to glue to floor.

LBLS: Cables

- Done in May by Valencia crew.
- Replace T on port 9.1 with 4-way cross. Put pin diode flange. Remove and put back T-sensor flange from the T to 4-way cross
- Cross and flange at CERN



LBLS: Commissioning/ Testing

- After connecting to port 9.1 we will test all 4 pin diodes with a Cylon tester made by Matt.

Portable LED flasher on the PIN diode

readout with amplified for testing with a scope

LBLS: Readout plan

- Matt and Gary think that an in-house solution for readout is possible.
- We will have ON/OFF as well as some amplitude information for each individual diode.
- Interfacing with LIP and LANL to integrate it to the existing Laser CPU box

> The back-of-the-envelope version of my plan is for each channel to have a fully differential amplifier with the output sent directly into an FPGA pin pair. Data from each differential ISERDES primitive would be sent into an 8-bit wide memory continuously. Upon a hit, the memory would be scanned for the length of the run of 1s to measure the time-over-threshold. Hits would be queued up and sent to a raspberry pi on a parallel bus. Then, a UDP packet would be generated for each hit and sent over the network.
>
> Some details still to be worked out of course...
>
> If we can additionally have a signal synchronous with the laser firing, we could potentially apply a veto to suppress out-of-time hits (and/or false positives).

- Matt Andrew