

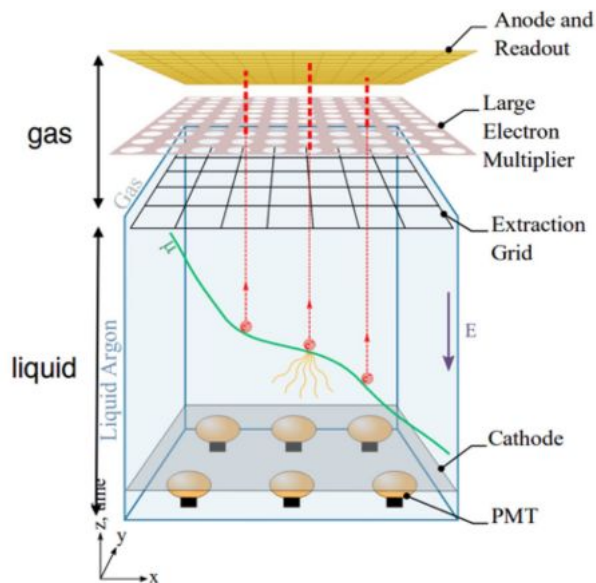
# VD ColdBox hardware setup

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CERN

DUNE DAQ Meeting  
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# Vertical Drift (VD)



liquid instability at liquid-vapour interface, close to LEM  
 Long drift-path, 12 m and 600 kV in DUNE  
 f.e. electronics in chimneys, short cables

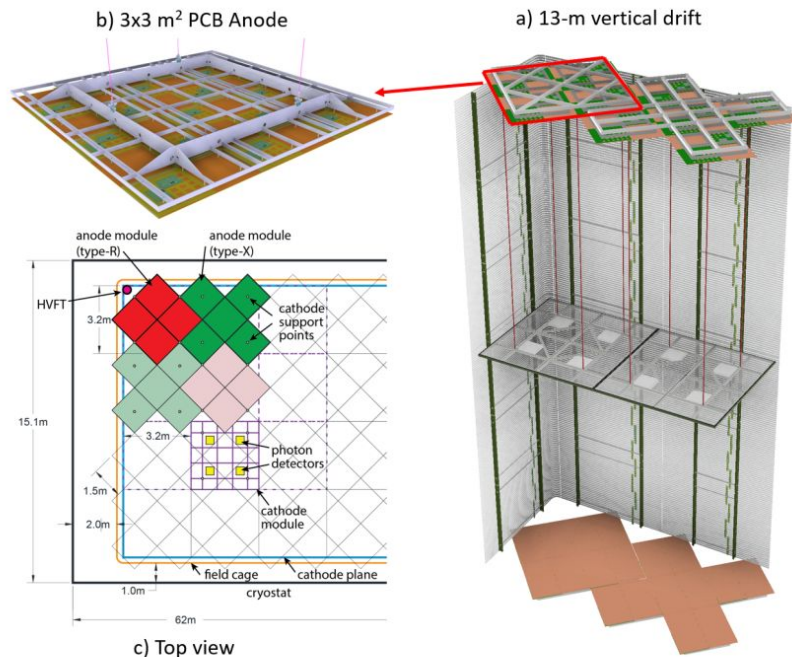
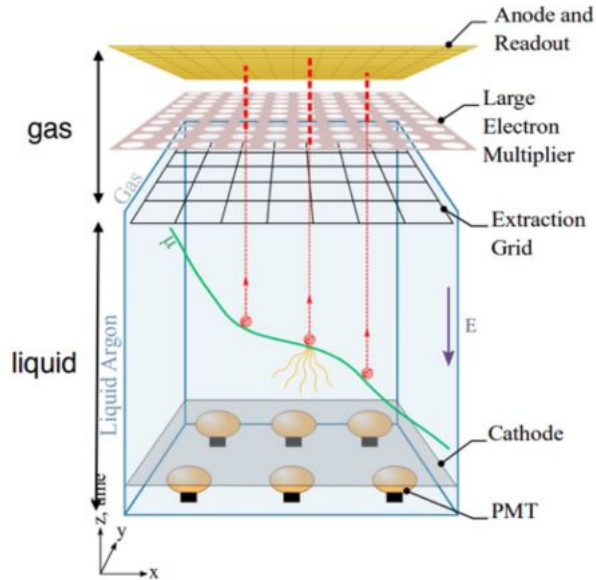
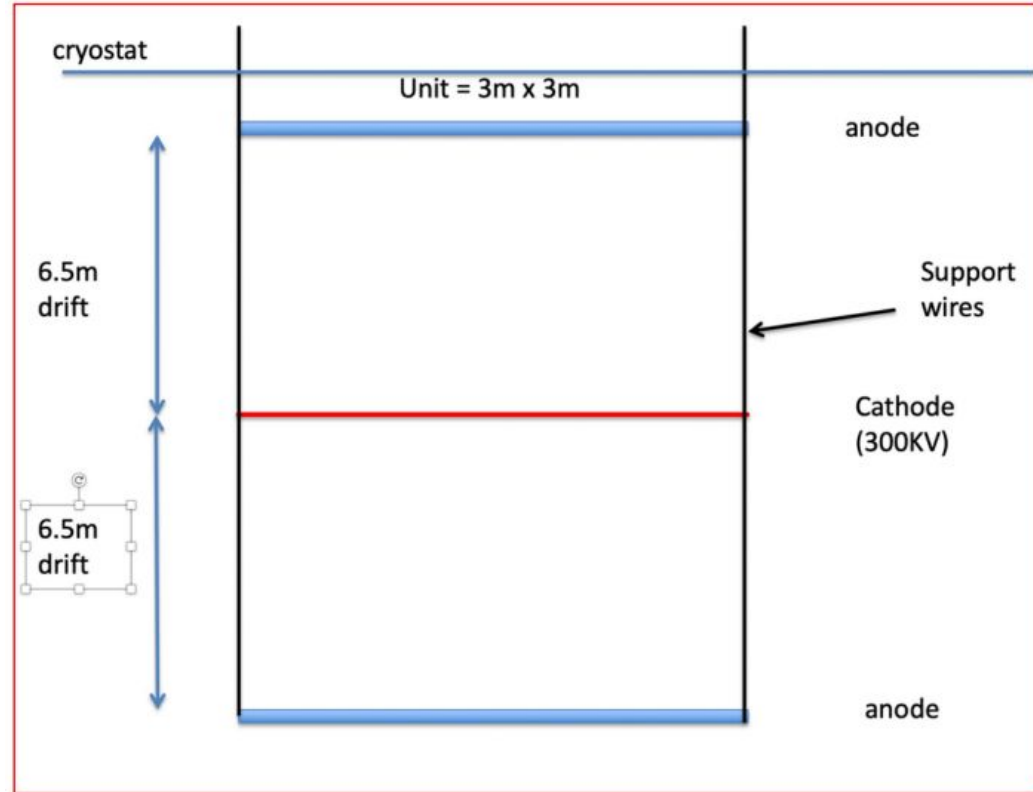


FIG. 1. Next-generation LArTPC concept: a Vertical Drift Solution with the PCB Anode Readout.

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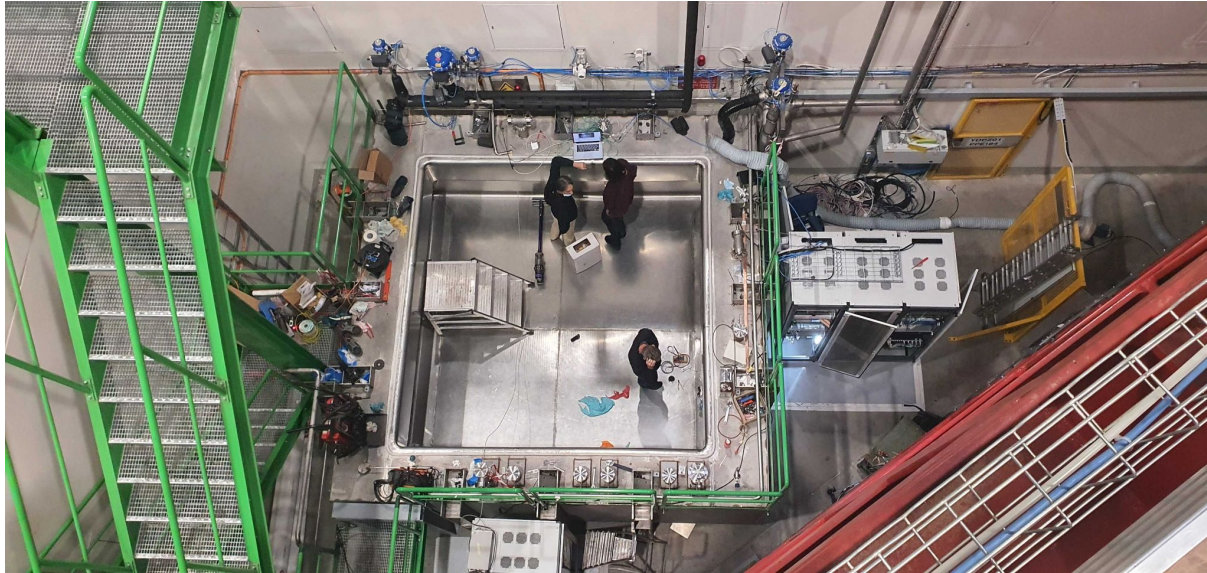
# VD ColdBox

- ColdBox = For testing the detector technology and its required subcomponents
- Needs full integration with detector subsystems
  - Facility, DCS, front-end electronics, DAQ
  - Frontend: 4 x WIB-1

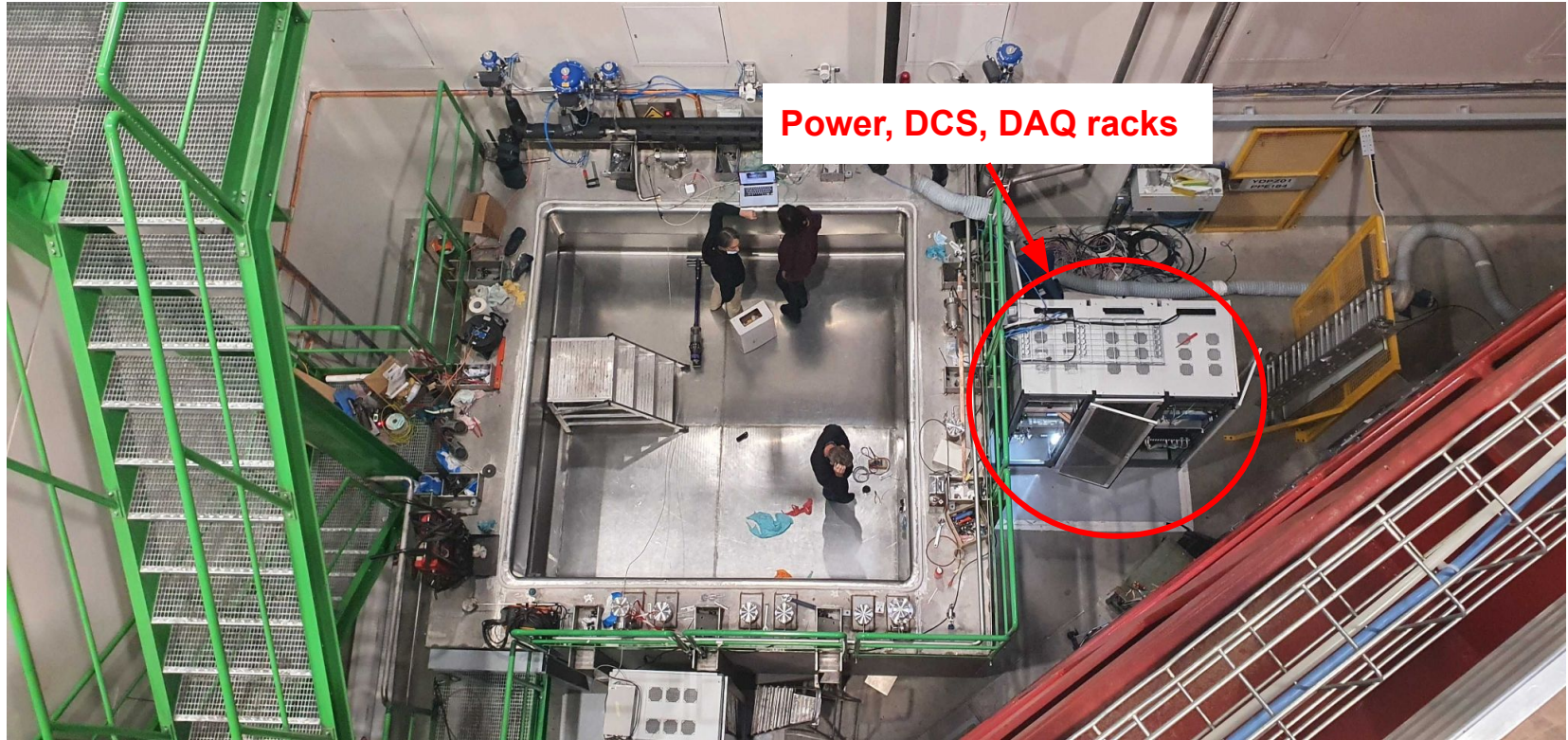


# Location

- Located at the Neutrino Platform (NP) at CERN
- Right behind the NP02 cryostat in the trenches
- Unfortunately, it's quite far from the DAQ barrack



# Location



# DAQ rack



Optical fiber pulled from CB to DAQ barrack for connectivity to NP04 network.



# Network

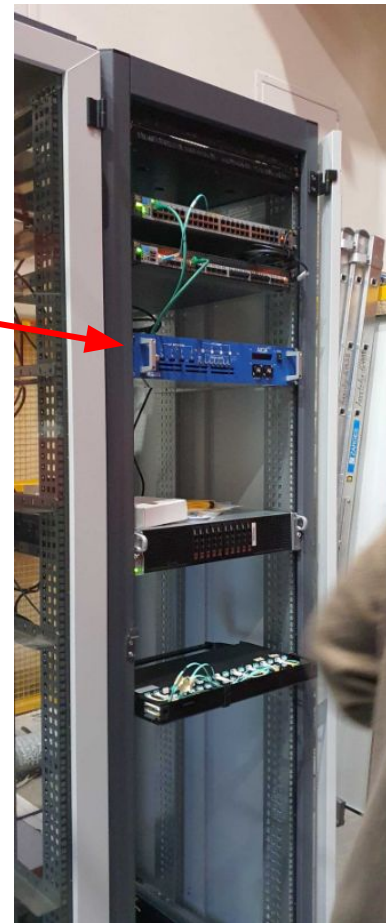
- Network switches
  - 1Gb and 10Gb switches installed
  - 10Gb connects to NP04 network
  - 1Gb connects to 10Gb switch
  - Configuration is ongoing by Giovanna





# Timing

- TLU moved from NP04
- Firmware design called BOREAS
  - Runs at 50 MHz for WIB-1 FE
  - Timing master + HSI combined
  - Can be used for real hardware pulse or HSI in emulation mode
- Thanks for Stoyan for the info and support



# Readout

- np04-srv-026 moved from NP04
- I/O card: FELIX BNL-712
  - Firmware: dune-v1
    - First in-house FELIX build on top of ATLAS phase2 fw
    - Ex. TPG
  - Software: dunedaq-v2.8 and v2.8.1
    - Included software TPG capability
    - Upcoming consolidation release with improvements on raw recording and debug streaming domain



# Patch panel

- Moved from NP04
- For FE (WIB) to FELIX connectivity
- WIBs are not yet present, and therefore not connected to the readout yet.



# Summary

Despite the front-end electronics are not yet present in the system, we wanted to carry out the hardware setup of the DAQ to avoid missing important equipment or detail.

Also, configuration of the slice is not yet carried out fully, but it's ongoing.