

Installation / Integration WG Update

Jack Fowler for the Installation / Integration WG

Far Detector Meeting

22-Sept-2015

Working group news

- Convener : Marvin Marshak, Univ. of Minn.
- Deputy Convener : Roxanne Guenette, Oxford Univ.
- W3 Manager : Jack Fowler, Duke Univ.
- Working group charge in work (see next slide)
- Tentative meeting time : Detector weeks on Tuesdays at 9 am CT
- Email list : dune-fd-install@fnal.gov

Working group charge

- Draft is circulating between the WG leaders
- Need to interact with other WGs to define the boundaries of each group
- Charge will include:
 - protoDUNE
 - FD
 - Racks & Cabling (DAQ/Electronics)
 - Far site facility
 - CERN facility
 - Installation Tooling
 - Handling and Storage
 - Global testing plan and facilities
 - Transport underground
 - Commissioning

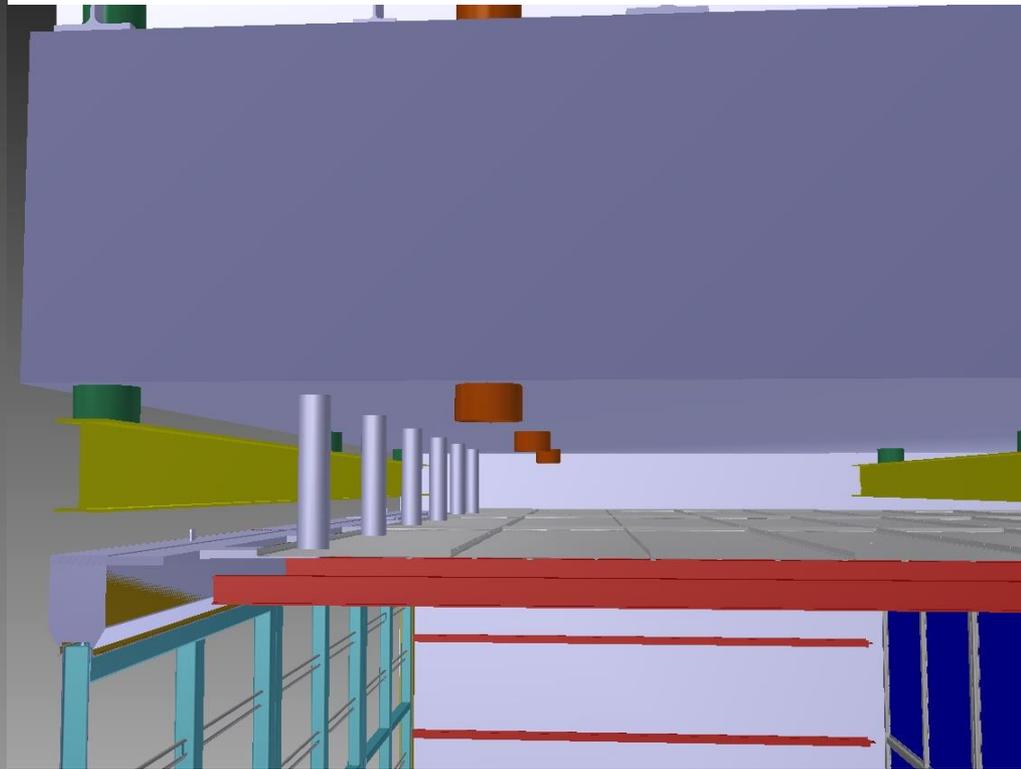
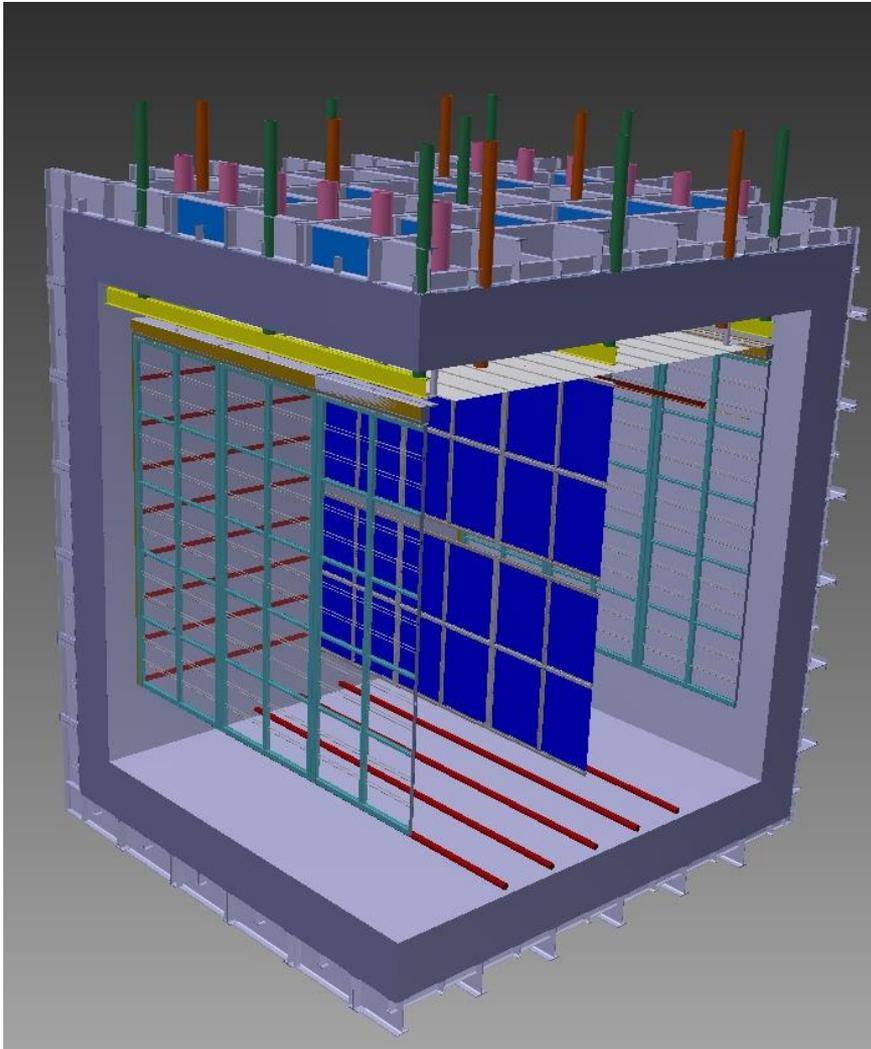
Near term goals

- Complete charge for working group and coordinate with other WGs.
- Organize work packages for possible collaborative tasks.
- ProtoDUNE TPC, cryostat and cryogenics integration.
- Prepare for ProtoDUNE cryostat review in December.
- Prepare for Directors and DOE CD3A CF reviews in Oct and Dec.

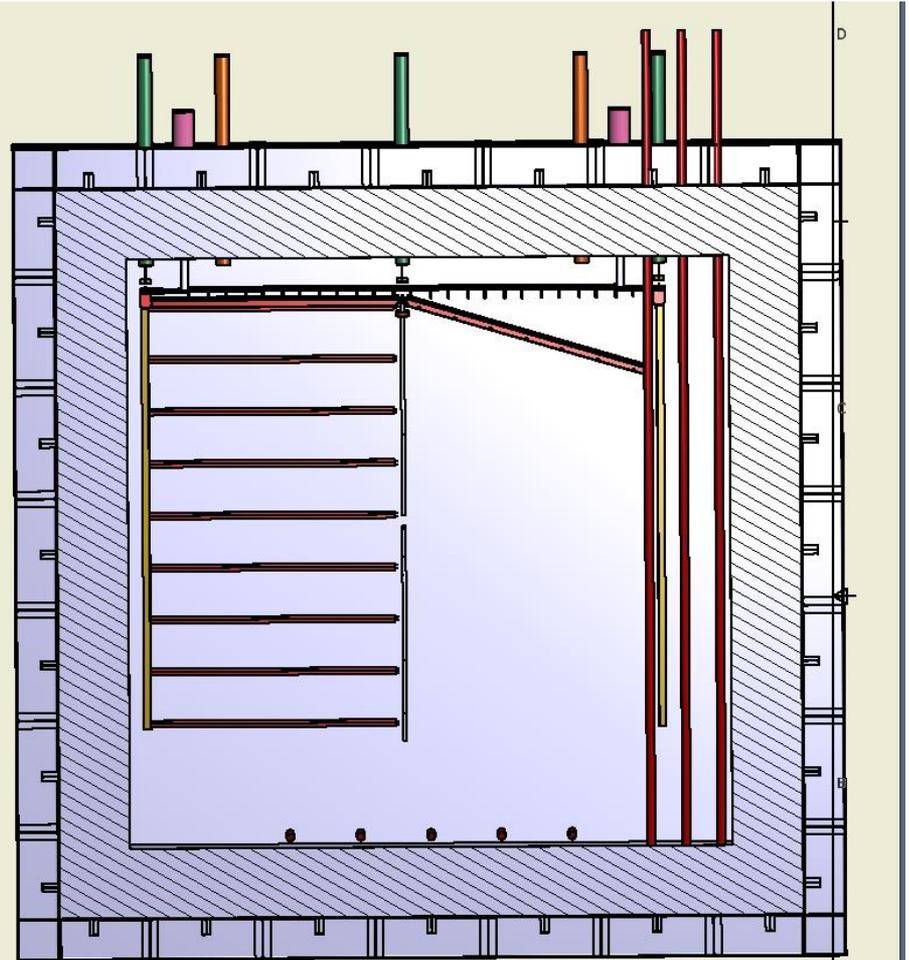
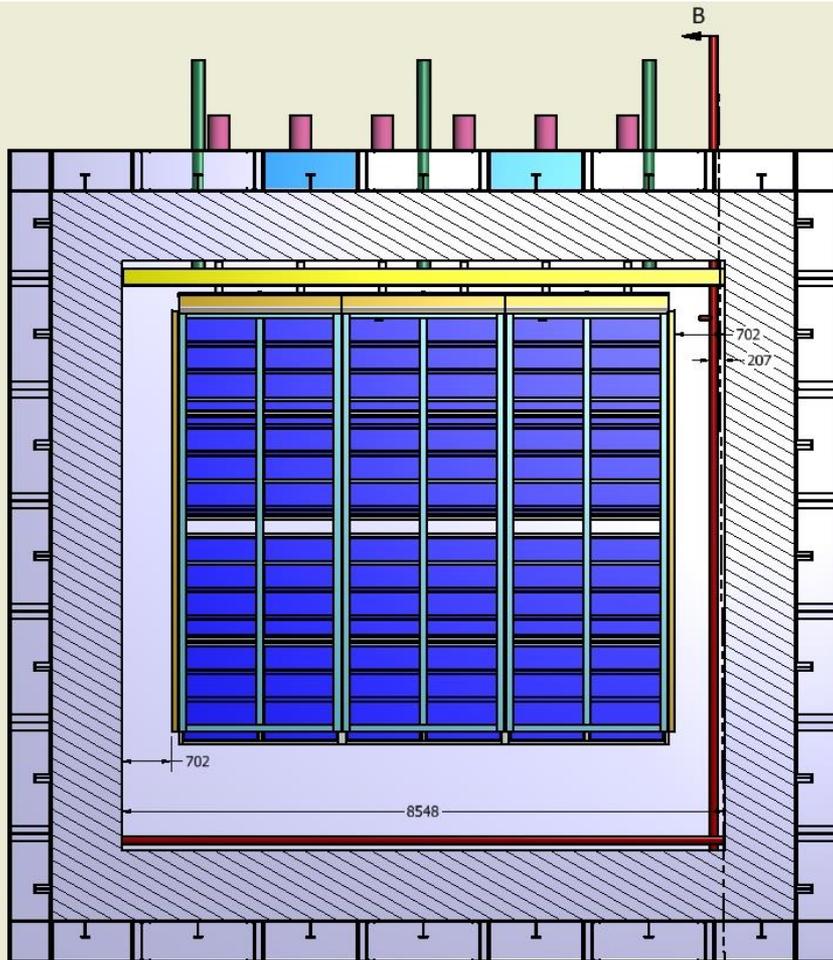
Current work – ProtoDUNE

- There was an engineering meeting at BNL with CERN and DUNE the week of Sept 7.
- The goal was to concentrate on the designs of the single phase TPC and cryostat to identify the interfaces and constraints between the two.
- This is needed quickly as components for the cryostat and exoskeleton need to be placed in early CY 2016.
- All interfaces with cryostat must be defined.
- Working envelopes for the TPC, cryogenics piping, instrumentation, electronics and cryostat must be established and agreed upon.
- A design review of the cryostat and interfaces is planned for early Dec '15.

Current work – ProtoDUNE



Current work – ProtoDUNE



Current work – DUNE CF

- Preparing for upcoming CD3A Directors and DOE review for CF
- Working through list of interface issues identified at CF workshop at SURF in August.
- Reviewing both Logistics and 100% preliminary design reports from ARUP.

CF interface issues

- Ground and shielding requirements throughout campus
- Power and cooling requirements for electronic racks
- Underground control room requirements
- Liquid Argon temperature stability requirements
- Liquid Argon flow requirements (Need for bi-directional pumping)
- Cavern space for detector installation and cryostat pumps
- Detector/cryostat/cavern alignment tolerances
- Detector/cryostat/cavern level tolerances
- Requirements for cryostat bridges
- Clean room interferences
- Utilities and cryostat piping ground isolation (closed)
- Cavern mezzanine requirements
- Detector requirements on potential shaft modifications
- Detector requirements on drift cross-sections
- Detector requirements on monorail locations and functionality
- Ventilation requirements around cryostat annulus and base
- Need for ventilation barrier wall between adjacent caverns