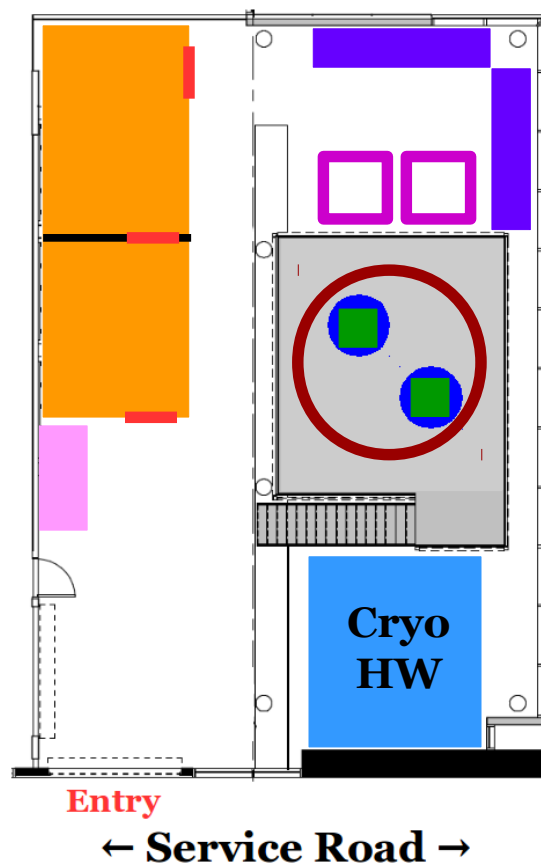# ND-LAr Assembly and Testing: Moving Forward

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DUNE ND-LAr Assembly and Testing Meeting

October 20th, 2021

Entry

← Service Road →

♦ Recent focus has been on cryostat design (FSD/MATF)

♦ Moving forward: focus more on Assembly and Testing (A&T)

  • Scope at both FSD and MATF – discuss both in this meeting

Module Assembly

- ♦ Module assembly has been planned out in some depth
  - See Jay's talk at ND-LAr Internal Review
- ♦ However, need to revisit for multiple reasons:
  - Full-scale TPC module has undergone some design changes
  - MATF testing plan still up in the air, and there may be impact on how modules are assembled (and packaged)
- ♦ Also need to determine assembly fixture and working space needs both at MATF and FSD
  - Fixturing built/tested by CSU, shipped to SLAC/FNAL
  - Need to think about assembly space, desks, tables, tools at both places – also storage space (including tested modules from MATF)
- ♦ Are there any special concerns for FSD compared to MATF?
  - e.g. difference in signal/HV feedthrough on top of cryostat

Module Testing

- Still not clear what ND-LAr module testing plan will be
  - Focus of Module Testing Task Force, which is not getting appropriate feedback from all ND-LAr subsystem leads
  - Options include testing some or all modules in LAr, LN2, or GN2
- Important for us to understand (i.e. write down) what our equipment will look like for each potential testing configuration
  - Are all options affordable? Testing timescales in all cases?
  - Ideally we can make plans that allow for all possible testing configurations (e.g. use current cryostat design if possible and affordable)
- Also must determine baseline run plan at FSD
  - Single run? Multiple runs? How long? Modes of data-taking?

BACKUP SLIDES

Relative Time [Days]	Cryostat #1 Activities	Cryostat #2 Activities
0	Module #1 Insertion	
0.5	Evacuation	
1	Cool-down	
1.5		
2		
2.5		
3	Fill	
3.5	Physics	
4		
4.5		
5		Module #2 Insertion
5.5	End Physics	Evacuation
6	Drain	Cool-down
6.5		
7		
7.5		
8		Fill
8.5	Warm-up	Physics
9		
9.5		
10	Extract Module #1 & Module #3 Insertion	
10.5	Evacuation	End Physics
11	Cool-down	Drain
11.5		