

Horizontal Drift Design Reviews

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FD Technical Board Meeting

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ProtoDUNE-II Design Reviews

- Back in April, we discussed the idea of a mid-June ProtoDUNE-II design review covering all sub-systems
- Idea was to review documentation (final drawings and QA/QC plans, for example) prior to initiating production of module-zero components
- Clear from subsequent discussions with consortia leadership teams that this “one size fits all” model did not work for everyone
- Instead, spread out the documentation reviews for the individual sub-systems based on production start dates

Schedule (ProtoDUNE-II Reviews)

- APA Consortium: Targeting having majority of required documentation posted by end of May -> **June Review**
- HV Consortium: Targeting having required documentation posted by end of June -> **July Review**
- PD Consortium: Targeting having required documentation posted by end of July -> **August Review**

Special Cases (ProtoDUNE-II Reviews)

- TPC Electronics Consortium prefers to incorporate the review of ProtoDUNE-II designs into its Final Design Reviews for DUNE (see upcoming slides)
- CALCI consortium is already in the process of procuring components for the ProtoDUNE-II laser system, which will be assembled and tested this summer
- Most logical time frame for reviewing this system is in the fall (after these activities have been completed)
 - September/October 2021 time frame
 - Review focus on readiness to move forward with implementation in ProtoDUNE-II (incorporating review committee with focused charge)

ProtoDUNE-II Review Process

- We will ask members of the Integration Office and Technical Coordination engineering teams to review the posted documentation
- Engineering team will review documentation and possibly schedule a zoom call with consortium representatives if further discussion is warranted
- Engineering team will prepare short write-up to be incorporated in final report on document readiness including any issues that need to be addressed

Documentation

- Mechanical Engineering and Assembly Drawings – Jack, Dimitar, and Kyle (need to be consistent with integrated 3D CAD model)
- Electrical schematics and board layouts along with specifications of cable & wire connections and plans for compliance with grounding/shielding plan – Terri and Steve C.
- QA/QC plan, manufacturing/procurement plan, and specification of fabrication, inspection, and test procedures – Kevin, Jim, Mike, and Duane

Final Design Reviews

- DUNE Final Design Reviews need to be completed in advance of initiating component procurement for the Far Detector
 - APA component procurement needs to get underway this Fall
- Production Readiness Review should at a minimum occur in advance of any actual construction activities
- Final Design Reviews for all sub-systems also need to be completed in advance of DOE CD-2 review covering Far Detector 1 (targeting Summer 2022)

Proposed Schedule (Final Design Reviews)

- APA :
 - July 27-29, 2021
 - Production Readiness Review in Late September 2021
- TPC Electronics:
 - Early July 2021 (ASICs)
 - Late September/Early October 2021 (All other components)
- HV:
 - Late October/Early November 2021

Proposed Schedule (Final Design Reviews)

- Photon Detection :
 - Late September 2021 (Rails & Cables)
 - April 2022 (All other components)
- DAQ:
 - January 2022 (currently targeting Preliminary Design Review)
- Detector Support Structure (DSS)
 - Early September 2021 (Preliminary Design Review)
 - May 2022 (Final Design Review)

Proposed Review Calendar

- CE FDR (ASICs) – Early July 2021
- APA FDR – July 27-29, 2021
- DSS PDR – Early September 2021
- APA PRR – Late September 2021 incorporating PD FDR (rails & cables)
- CE FDR (main) – October 2021
- HV FDR – November 2021
- DAQ PDR/FDR – January 2022
- PD FDR (main) – April 2022
- DSS FDR – May 2022

August Cold Box Test at CERN

- Previously, we had discussed the idea of testing the first new ProtoDUNE-II APA in the EHN1 Cold Box in September
- This was felt to be an important input to the APA Production Readiness Review planned for Late September
- Due to other scheduled EHN1 activities, there is a strong preference for us to complete this test in August

Needed Input from Consortia

- What would be the proposed scope for your sub-system within the context of an August Cold Box test?
- What personnel would you need to get to CERN in August to execute that scope?
- On the US-side, at least, we need to develop a comprehensive proposal detailing all the people who would need to travel to CERN through which we can seek DOE approval