

Planning for Pre-TDR R&D

David Warner, Ettore Segreto and
Leon Mualem

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General Outline

- The focus of this discussion is to begin to develop a consortium-based international R&D plan for the Photon detector as we move past the ProtoDUNE phase
 - We have received guidance from project management that US project funds for ProtoDUNE will end at the end of March, 2018.
- Following the completion of an initial draft for the project WBS (Thank you for all your help!) we need to focus next on the R&D Plan for the PD.
- This plan will consist of a list of all tasks required to be ready to gather the information needed to complete the TDR. These items ARE NOT part of the WBS.
- Completion of the R&D phase must allow for a down-select to a single PD technology, or selection of a primary and ranked alternate(s), by the time of the TDR.
 - Clearly priority in our R&D plan will be given to items assisting in this down-select.
- It is not currently clear what resources will be available when for this effort, but it is important that we have a proposal together shortly.

Plans for R&D Resource request

- We expect that there will be significant competition for the limited resources available during the R&D phase of the project
- Given this, it is critical that the resources available be distributed to the tasks most critical to each WG
- US project management (Eric) has requested that the PD consortium leadership provide US project management with a ranked list of R&D opportunities/requirements.
- We would like to follow the same plan for all contributing funding sources, providing each national representative and through them their funding agency or agencies with a ranked list of R&D requests.
 - The procedure for selecting national representatives is under discussion with project management (and may vary from country to country)
- Individual institutions will then contact their funding agencies with specific requests for funding as guided by their national representative

Generating the R&D Requests

Step 1: Discuss within the Working Groups.

- Discuss the R&D requirements required within the working groups. Suggestions for discussion include
 - Present a summary of the current status of the WG responsibilities
 - Identify a list of risks faced by the WG (ranked by priority)
 - Identify a list of opportunities requiring additional R&D to bring to fruition (ranked by priority)
 - Brainstorm within the WG to develop a list of specific R&D tasks needed for these risks/opportunities

Generating the R&D Request

Step 2: Generate requests for specific R&D tasks

- WG conveners should assign specific R&D tasks to individual institutions within the group who will write up “detailed” R&D proposals (Suggestion-- WBS institutional interest lists should be helpful here). Proposals should include:
 - Description of the task
 - Description of risk/opportunity addressed by the task
 - Rough list of resources required by the task
 - Financial
 - Personnel
 - Other (e.g. access to Tallbo)
 - Possible schedule for the task
 - Inter-WG requirements (e.g.-- will a photosensor test require help from electronics WG?)
 - Other benefits
 - How will the task assist us with simulation?
 - ...

Generating the R&D Request

Step 3: WG Conveners collect task lists, rank them, and present them to Photon Detector Consortium Management

- WG conveners collect R&D task lists
 - Prepare ranking of tasks
 - Assign tasks to interested institutions within WG
 - Prepare suggestions for resource sources
 - Present list to PD consortium management

Generating the R&D Request

Step 4: Photon Detector Consortium Management prepares ranked list of tasks

- Consortium Management (PDCM) will prepare a ranked list of P&D tasks
 - Discuss within consortium and agree
- PDCM will provide national representatives with a ranked list of R&D opportunities to present to funding agencies
- Individual groups will present requests for funding to funding agencies at the direction of the national representatives.

R&D Preparation Milestones

- 12/15/17 Initial R&D tasks to WG conveners
- 1/18 WG leaders present R&D task proposal to consortium at Collaboration meeting
- 2/18 PDCM present ranked R&D task lists to national representatives
- 2/18 National representatives present lists to funding agencies
- Funding received (?)

General comments

- It is understood by PDCM that some R&D work is already underway and that funding should be identified to continue that work until the full plan is in place. We will work with Project Management to try to facilitate this as far as is possible within funding constraints.
- One of the main R&D efforts will be head-to-head comparisons of PD technologies, probably in Tallbo
 - 2 Tallbo tests will probably be required prior to the TDR
 - Summer 2018
 - Winter 2019
 - As these dates converge, working groups should try to tailor their plans to take maximum advantage of these tests.
 - We should probably establish a Tallbo Test Task Force and leader to optimize these tests.
- Given that we will likely not have the resources required to support all of the R&D prototyping which might be desirable, working groups should try to tailor their R&D requests to providing information needed to tune simulations as far as possible.