

US DUNE ND UTA Meeting

- Three objectives:
 1. By end of the year: written “proposal” for US DUNE Near Detector construction sub-project.
 2. By early summer: operational US DUNE ND project with a level 2 element and L2 manager in the US DUNE WBS.
 3. By end of UTA meeting: “a plan of the plan” for each of the four task groups to achieve objective 1 and coordinate with objective 2.
- Challenges in balancing:
 1. Bottoms-up process with strong university and lab components.
 2. Integrating with DUNE NDDG.
 3. Supporting and engaging international partners.
 4. Need for speed in the DOE world.
 5. Resource realities.
- Initial view from the project: “build out” from Ar-Cube.

The need for speed

- LBNC asserts ever more loudly a need to understand the ND before they can fully endorse the FD.
- US DUNE needs to operate within the DOE system. Total project cost must be finalized. A WBS structure must be defined. A L2 manager needs to be selected.
- Some elements of the most well defined ND component (LAr detector) require near-term decisions on support.
- Implications:
 - A concrete written proposal for US contributions to the ND must be produced this year, on the same time scale of the ND CDR.
 - Proposed US DUNE contributions must be developed in parallel with the DUNE NDDG process; working assumptions may need to be adopted.

Seeding the bottoms-up process

- To start, the US DUNE Project will recognize four ND tasks that appear to be solidly established in the NDDG:
 - Argon Cube pixel LAr detector.
 - High pressure gaseous argon TPC.
 - 3D scintillator tracker.
 - DUNE Prism.
- Other tasks can be developed, within constraints.
 - Viable within NDDG.
 - Support international involvement.
 - Sufficient interest to plausibly move forward.

Launching tasks—we're serious

- To get things going, four sets of individuals have agreed to serve as “facilitators”.
 - Organize initial efforts at this meeting and the UTA meeting.
 - Serve as points-of-contact to US DUNE project.
- Initial task facilitators
 - ArCube: Jonathan Asaadi (UTA), Dan Dwyer (LBNL).
 - 3D tracker: Chang Kee Jung (Stonybrook), Steve Manly (Rochester).
 - DUNE Prism: Kendall Mahn (Michigan State), Mike Wilking (Stonybrook).
 - HPGArTPC: Alysia Marino (Colorado), Jen Raaf (FNAL).
- Note that task groups can reorganize later on their own if they wish.

Expressions of interest

- Thank-you to Hiro, Kendall, and Marvin for organizing the EOI process for US ND efforts.
- 37 responses!
- Thanks to all of you and your colleagues for responding.
- The EOIs will be very useful to the task facilitators and are extremely helpful for the project.

Management: we're really serious

- We have activated the US DUNE WBS level 2 task for the Near Detector.
- We have asked Dan Dwyer of Lawrence Berkeley Lab to serve as the L2 manager for US Near Detector contributions, and we're happy to report that Dan has agreed to take on the job.
- Dan will organize the project (L3 elements , etc.) based on an initial model where we build out a US effort starting from US support for Argon Cube.
- Dan will need your help!
- DUNE Technical Coordination also anticipates bringing on a ND Project Engineer in the very near future.

Milestones (I)

- April 18-19 UTA meeting: initial scope discussions.
 - How would each entire task, international and US, break into components?
 - What are realistic candidate US components?
 - How do they leverage international contributions?
 - What US groups are interested in contributing?
 - What are the capabilities of the groups?
 - What's missing from the US side?
 - What work over the summer needs to be done?
- We're hoping that all task groups leave UTA with at least a "plan for a plan".

LBNC is tough

- They are not completely convinced of the need for any component in the current design up to now except for LAr (maybe).
- They currently see NDDG as putting hardware first, physics second; they want the order reversed.
- Physics == CP violation.
- If LBNC cannot understand the direct connection between a detector element and CP violation, they are unlikely to endorse construction of the detector element.
- The better story is likely a simpler story.
- The US project will not support a detector element that lacks the backing of LBNC.

Milestones (II)

- May collaboration meeting/DUNE ND workshop.
 - Progress reports.
- Summer 2019: develop US proposal at task level.
 - Mid-summer workshop?
- Dan will report on US ND to the DOE Independent Project Review in late July.
- Fall collaboration meeting 2019: present task-level proposals.
- Fall-Winter 2019: consolidate task-level proposals into integrated US proposal.
- December 2019: US DUNE Project must define and report a total project cost (TPC) for all US DUNE activities, including ND, at the Far Detector CD-2 review. The US ND effort will have to be baselined to first approximation.

Opportunities

- A big thank-you to Kendall, Hiro, and Marvin for helping get the ball rolling, and to Jae and Jonathan for putting this workshop together on very short notice.
- We have a chance to make something happen. Let's get started!