Planning for the Next Year (and beyond)

Dave Newbold

DAQ Consortium Meeting #4, 3-Apr-18

Where are we?

- DAQ design
  - Requirements, specifications and overall strategy agreed
  - Multiple possibilities for implementation of some parts (i.e. SP TPC front end)

- Documentation (schedule / interfaces / requirements / WBS / cost / risks)
  - Everything completed for LBNC review – we have so far not missed a deadline
  - Technical proposal not yet complete, but well under way

- LBNC review (first formal review of DAQ consortium)
  - Positive comments made at meeting; findings positive but not very detailed
  - Still waiting for report to be released…

- Consortium structure
  - Seems to be working reasonably well, but not enough active people
  - Parallel work with ProtoDUNEs will continue for at least six months

- Now need to plan for the next phase, up to our TDR in 2019

DAQ (Public) Pre-TDR Schedule

- M1 (Dec 2017) Interface documents complete (DONE)

- M2 (Jan 2018) Functional specifications complete (DONE)

- M3 (Mar 2018) Cost and infrastructure requirements complete

  ‣ Basically done – infrastructure requirements being formalised soon

- M4 (Mar 2018) Technical Proposal

- M5 (Aug 2018) Preliminary (internal) review of TDR baseline

- M6 (Oct 2018) First prototype HW / FW / SW available

- M7 (Nov 2018) TDR structure and institute responsibilities defined

- M8 (Jan 2019) Slice demonstrators complete

- M9 (Feb 2019) Full (external) review of TDR baseline

- M10 (Mar 2019) Technical Design Report

  ‣ We may wish to review this date in the coming weeks

  ‣ TDR date driven by FA processes; may wish to go later, giving more time for preparation

TP Update

- Many thanks to our editors, who really have been editing

  ‣ And also writing…

- Single-phase contribution in very good shape

  ‣ Dual-phase contribution by construction has a very large overlap

- Overall DUNE FD installation planning now available

  ‣ Allows us to construct the related sections of the DAQ chapters

- If you didn't read the TP sections yet, now is the time!

- Now appears that detailed costs will *not* go into the TP

  ‣ But the information is required for other reviews on the same timescale

    • e.g. RRB, where the new cost estimates were valuable information

  ‣ Will soon need to iterate on the risk register in preparation for LBNC

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What Next?

- Where we need to be by the DAQ TDR

    ‣ ProtoDUNE programme completed and successful

    ‣ Baseline implementation plan for the FD DAQ agreed and documented

        • At a far greater level of detail than would be possible today – see public ATLAS / CMS TDRs

        • All 'new' technologies demonstrated, costed; interfaces agreed, documented, demonstrated

    ‣ A complete understanding of who is doing what and paying what

    ‣ Ready to embark upon a substantial three-year construction project

- How do we get there?

    ‣ Need to use next period productively; much concrete technical work to do

    ‣ Make informed decisions about implementation and responsibilities

    ‣ Converge with ProtoDUNE activities

    ‣ Build the teams who will design and deliver the DAQ subsystems

R&D Programme

- A set of focussed parallel R&D studies to take us to the TDR

- Goals

  ‣ Demonstrate (in practice) the key aspects of the proposed DAQ design

  ‣ Allow 'new' ideas to reach a better state of maturity, get better understood

    • Such that we can make later decisions on the basis of proper evidence

  ‣ Provide firm basis for TDR cost and resource estimates

  ‣ Provide concrete framework for institute and national activities

  ‣ Align groups with activities, work towards final responsibility matrix

- A potential final goal for the programme

  ‣ Build a complete DAQ slice for ProtoDUNEs

    • Operating them as self-triggering detectors

  ‣ Converge current ProtoDUNE and FD activities

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Planning R&D

- Would like to make this a 'bottom-up' exercise

- WG leaders put together short lists of critical R&D tasks

  ‣ Presented at DAQ meetings on 19th / 26th March

- Consortium MB filters input and arrives at final task lists

  ‣ Currently under discussion – clearly some integration / filtering will be needed

  ‣ We do seem to have general agreement on what the key tasks will be

- Expressions of interest requested from consortium by April 6th

  ‣ Preferably from groups of institutes collaborating in a particular area

    • What is to be done; why it's necessary for the TDR; who will do it, and on what schedule; what the deliverables will be by October 2018, March 2019. One or two pages only!

  ‣ 'Matchmaking' also possible / necessary; if there are gaps, will address them

- Today: asking for consortium sign-off on this strategy

  ‣ Full EoI-based R&D programme will be presented for approval when defined

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In Parallel: Management Tasks

- A long list of tasks for management

  ‣ Organise R&D programme definition and reviews

  ‣ Liaise with FD technical coordination on all issues affecting interfaces

  ‣ Liaise with infrastructure / installation team to define detailed installation schedule

  ‣ Liaise with ProtoDUNE management on 2018 / 19 activities

  ‣ Iterate on system costs and construction planning

  ‣ Work towards responsibility matrix / resource commit. (incl. liaison with funding agencies)

  ‣ Define and produce the TDR

  ‣ Participate in the ongoing review process for the programme and experiment

- Propose to slightly re-structure the consortium leadership tasks

  ‣ R&D projects to be largely self-contained, but with defined contact persons

  ‣ Technical lead (Georgia): coordinate consortium R&D, liaise with technical board

  ‣ Integration contact (Alec): coordinate schedule, liaise with installation team

  ‣ Consortium lead (Dave): liase with institutes, DUNE management, project office

  ‣ These roles are 'flexible', and will evolve; all decisions go via the MB

    • MB has proved to be an effective body; would like to continue with the current membership up to the TDR

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Actions

- Seeking approval for overall strategy from you
  - ‣ Happy to take input (positive or negative) from all consortium PIs - you are the boss

- R&D programme
  - ‣ We hope to receive EoIs in the coming days
    - If you are heading in this direction, but not quite ready yet, let us (Dave / Georgia) know
  - ‣ R&D plan to be defined and approved as rapidly as possible

- Management tasks
  - ‣ Would like to start another round of discussion with institutes after EoIs: expect a call
    - To be discussed: short- and long-term plans, resources, funding agency position
    - Important that we understand your FA's position w.r.t. TDR approval date
  - ‣ Now is the time to explicitly discuss our plans with ProtoDUNE contacts
  - ‣ Preparation for LBNC review (May 22nd-24th) begins soon
    - In light of new management plan, Georgia will present the DAQ status
  - ‣ Continue to iterate on construction / installation plans in increasing detail

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