

The DUNE Hardware Database survey

Dear Colleagues, the DUNE Database Group is assessing the needs and requirements of the DUNE Consortia with regards to database and other information systems used in the design, manufacture, QC, delivery and installation of the various systems in DUNE, i.e. essentially the full life cycle.

The general name we'll use to describe such information systems in this context is "Hardware Database". Your feedback is crucial in increasing our preparedness for Run 2 of protoDUNE as well as starting to gear up for DUNE. There is a free-form comment field in the end of this survey which you can use to make suggestions or add necessary details.

* Required

Your Name *

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Your e-mail *

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Name of the Consortium of which you are a member *

Dual Phase Photon Detection (DPPD)

Your role in your Consortium *

Leader

Liason

Participant

Please provide the name and a brief description of the system which is the focus of your Consortium

DPPD - TPB coated photomultiplier tubes and associated electronics, mechanics and calibration system, reflector/WLS panel assemblies

Documentation links: if possible, please provide links to documentation describing your system, its status and the process of its manufacture (procurement) and QC. *

Please refer to the TDR chapter

What other systems (if any) depend on the units or products provided by your Consortium?

HV and cryogenic instrumentation

What are the dependencies of your Consortium's product on other Consortia, if any?

Reflector/WLS panels will be installed on the field cage modules. Therefore, both consortia should agree on the design and installation of the panels, which was rigorously and accurately done during TDR preparation phase.

What types of data will be collected and stored during the QC process? What formats are currently used or planned for such data? What is the anticipated volume of the QC data? *

The QC data will include:

1. PMT performance data measured at production/assembly facilities and the Coating, Testing and Storage Facility
2. Results of continuity tests and resistivity/capacitance measurements of the cables
3. Results of transmission measurements of the optical fibers and connecting assemblies
4. The electronics test results of the high voltage distribution boxes and the high voltage modules and crates at the procurement/production facilities
5. Visual checks of the reflector/WLS panel assemblies and the installation hardware.

We have not planned the data format yet. The volume should be at the order of a few 10MB.

Approximate timeline of your system's manufacture, procurement, delivery and installation, if applicable? Provide estimates for both protoDUNE and DUNE if necessary. *

PMT procurement will start in June 2024, installation will be in April 2026.

What is your current understanding of how the hardware database records specific to your system will be used? *

All the components and the coupling between the components should be tracked precisely from the very beginning. This would allow tracing back any potential problem to its source and mitigation based on previous QC data.

Are you currently using any form of database to support the manufacture/procurement/QC process? This may include DB services, spreadsheets, other form of records (please specify). *

Not for DUNE-DP yet. But a system for ProtoDUNE-DP exists.

Is your group discussing database schemas to be used in the Hardware DB going forward? *

Yes

No

How can the DB group help you in this process? *

Provide information on the supported/requested format, possible limitations, etc.

Comments

Your general comments if you have any. You may skip this.