

DUNE Preliminary Design Review

Charge

Data Acquisition System

11–12 January 2022

The committee is requested to review the DUNE Data Acquisition System (DAQ) design and determine if it meets the requirements of preliminary design as outlined in the LBNF/DUNE Review Plan ([edms-2173197](#)) and the DUNE Far Detector PDR deliverables in ([2374096](#)). The committee should provide answers to the following questions:

1. Are the full specifications of the DAQ system and components available in EDMS?
2. Have interfaces with other detector components been addressed and documented? Do risks of design changes in other systems have appropriate mitigation strategies?
3. Does the proposed system design address detector requirements: performance, installation, testing, commissioning, operation and maintenance? Have design choices been fully identified and do they meet detector requirements? In particular:
 - a. Does the system meet the requirement of delivering up to 30PB/year?
 - b. For the Supernova stream, does the system maintain synchronicity between the corresponding trigger primitives from the CRPs, APAs and the different PDS, and does it guaranty the way they will be "stitched together"? Will the full Supernova data be readout and analyzable in a timely fashion?
 - c. Is there a reasonable plan for reading out all detector systems with appropriate time stamps for offline analysis?
4. Have lessons learned from ProtoDUNE been implemented both for the overall system design and design of the individual components?
5. Are plans for prototyping reasonable and sufficient?
6. What is the status of the procurement strategy and of the manufacturing and testing plan?
7. Are quality assurance and testing plans sufficiently developed to proceed to final design?
8. Have appropriate cost estimates and schedule been determined? Are plans for required technical resources consistent with scope of remaining work?

Review Findings:

The committee should present its findings, comments and recommendations in a closeout meeting with DUNE Technical Coordination on January 12. The committee should provide a final written report by January 30.