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# The ProtoDUNE-SP Prompt Processing System

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The Deep Underground Neutrino Experiment (DUNE) will employ a uniquely large Liquid Argon Time Projection chamber as the main component of its Far Detector. It will include four 10kt modules which will include single and dual-phase Liquid Argon technologies.
In order to validate its design, an experimental program been initiated which includes a beam test of large-scale DUNE prototypes at CERN in 2018.
The volume of data to be collected by the protoDUNE single-phase detector will amount to a few petabytes and the sustained rate of data sent to mass storage will be in the range of a few hundred MB per second. In addition to careful design of the Data Acquisition, Online Monitoring and Data Handling systems, the protoDUNE experiment requires substantial Data Quality Monitoring capabilities in order to ascertain the condition of the detector and its various subsystems. To this end, a Prompt Processing system has been designed which is complementary to Online Monitoring and is characterized by lower bandwidth, substantial CPU resources and end-to-end latency on the scale of a few minutes. We present the design of the ProtoDUNE Prompt Processing system, the current status of its development and testing and issues related to its interfaces and deployment.

## Experimental Collaboration

DUNE

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