

DUNE Digital Data Management Plan

DRAFT Date

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Deep Underground Neutrino Experiment (DUNE)

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1 About DUNE Data

The data to be collected by the DUNE experiment will be unique and will be the result of a large, long-term investment of effort, and financial and material resources. As a principal funding agency and stakeholder of this experiment, the Department of Energy requires that an effective data management plan be put into place to preserve the data and make it available to scientists outside the collaboration for validation of results.

In the near term (as of 2015), the DUNE Collaboration is focused on designing and prototyping the near and far detectors and optimizing the neutrino beam components. Large-scale collaboration-wide prototypes, namely the 35-ton prototype, protoDUNE, and WA105, are included in this Data Management Plan. Data from prototypes and test equipment developed by participating institutions are covered in their respective Data Management Plans.

2 About the Plan

This data management plan is designed to meet the requirements of the Department of Energy given in <http://science.energy.gov/funding-opportunities/digital-data-management/>. The DUNE Collaboration will evaluate and monitor the costs of implementing this plan. The plan may be modified in the future to meet the requirements of other funding agencies contributing to DUNE.

3 Access to DUNE Data

The DUNE Collaboration desires to first make maximal use of the data it collects to achieve its science goals, namely, to explore the properties of neutrinos, nuclear interactions, astrophysical objects, as well as exotic particles and interactions not yet imagined. Following that, the DUNE data will be released in appropriate formats for interpretation by a broader community.

Published results will be accompanied by public data releases. In its publications, the DUNE Collaboration will make every effort to provide complete documentation of the analysis procedures used

to obtain the results discussed, such that the procedures and results can be understood in their contexts and applied in other contexts. Additional numerical data that would be too unwieldy to include in a journal publication will be supplied in appropriate machine-readable digital formats that will be referenced in the journal publications and available from the DUNE publications web site. This information will be provided, and archived in the long term, by trusted third parties such as INSPIRE and HEPData, through the supplemental data features provided by journal publishers. These data will be released simultaneously with the corresponding publication.

Due to the complexity of event-level data, general access is not expected to be practical. Without the specific consent and collaboration of DUNE, access is only provided to the publicly available data releases. Any use of DUNE data releases or associated work must acknowledge the DUNE Collaboration and appropriate funding agencies.

4 Preservation of Experiment Data, Simulation Samples, Software, and Documentation

As Fermilab is the host laboratory for DUNE, Fermilab will provide the long-term preservation of the data collected from the experiment, its prototypes, and corresponding simulated data samples. The software necessary for simulating and reconstructing DUNE data will be stored, versioned, and tested at Fermilab. Long-term maintenance of the documentation for the use of the software and interpretation of the data will also be provided on Fermilab-maintained documentation databases and servers. The data, simulation samples, software, and documentation will be distributed freely to DUNE collaborators.

5 Security

DUNE data do not contain any personal identifiable or other confidential information, and therefore do not require special security measures to protect confidentiality.