

DUNE DAQ R&D planning

University of Edinburgh Expression of Interest

Franz Muheim, Peter Clarke, Silvia Gambetta, Miquel Nebot

Possible contributions from Edinburgh

Noise studies

Studies on the noise levels and its effect on trigger and data rates for the hit finding algorithms, including coherent noise, radiological, actual protoDUNE noise...

Studies of possible software filter depending on the noise.

Translate to FPGA/GPU/CPU implementations.

Deliverable: trigger algorithm.

Work force: M.Nebot (in collaboration with B.Abi, J. Martin-Albo, J.Wang), P. Clarke.

Schedule: October 2018

This task engages with **4) Algorithm development** from G.Barr's mail task list

And to be included in the **Data selection investigations R&D activity** from the Consolidate Activities list.

Run control

Study possible configurations, design and development of the DAQ processes monitoring (possible data quality monitoring) and run control.

Deliverable:

Work force: S. Gambetta, M.Nebot, P.Clarke

Schedule: March 2019

This task engages with **5) Back-end software architecture** from G.Barr's mail task list

And to be included in the **Higher-level software: Run control R&D activity** from the Consolidate Activities list.

Possible contributions from Edinburgh

PD requirements from DAQ

Studies on the PD performance for possible trigger capabilities and DAQ requirements.

Deliverables: DAQ requirements.

Work force: F. Muheim, +student

Schedule: October 2018

This task engages with **7) Photon detectors** from G.Barr's mail task list
And to be included in the **Data selection investigations R&D activity** from the
Consolidate Activities list.