

ATHENA DAQ WG task list

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ATHENA DAQ Task list

- abstract for DIS
- update the documentation on the public wiki
- Figure out the status of the data volume from the synchrotron radiation
- Set up a way to make some progress on studying frameworks
- Set up a way to make some progress on the protocols on the fibers. I was thinking a first step towards this would be to compile documentation on the raw data formats of the various asics... at least the versions that exist so we can start figuring out the common information.
- the availability of the IpGPT components and the development (in particular the memory) in the FELIX
- Document to define protocols and data structure for DAQ (timestamp, headers, beam information)
- Start thinking about breaking up the simulation data in a way to actually address the daq needs with respect to data formats, event building & segmented data sources for trigger/AI/ML algorithms.
- Possible tasks for students

Simulation work / data rates / data reduction

- Mainly for SiPMT RICH
 - Electronic noise model
 - Superimpose physics signal
 - Zero suppression / time clustering / AIML
 - Front end
 - Concentrator level
 - L3 farm
- Evaluate data rates at each level -> Cost
- Evaluate efficiency / rejection of different methods

Possible task for student

- Software
 - Continue work on background
 - Data reduction algorithm standard or AIML based
 - Simulation of data coming out from detector
 - Analysis
- Hardware
 - Implementation algorithm on FPGA eval board or FELIX
 - Implementation of clock distribution and data transfer on FELIX