WP4
Data monitoring plan

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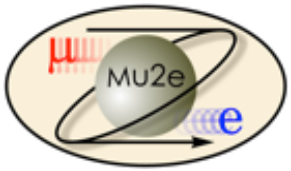

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Data Monitoring Introduction

Following level of monitoring needed:

- Online: real time monitoring of data taking and slow control
- Near-line: a limited look at the data with a latency of 30 min - 2 hr
- Keep-up: close to full reco with a latency of 12-24 hr

Discussion on define the broad properties on each monitoring level, and understand the synergies and responsibilities between online and offline just started

Slow Control

- Slow control is managed by EPICS and its dedicated server (code, data persistency, tools)
- Slow control information written directly to EPICS server or via TDAQ DCS node
- daq will access and display data from the EPICS server
- The TDAQ group is responsible for providing the generic infrastructure to access and display EPICS information
- The trigger group is responsible for customizing the generic tools and display slow control information relevant to the experiment

Slow Control
Online data monitoring

Monitor data as they are acquired to provide information on data quality and detector status. Otsdaq provides the generic architecture to read and display histograms, and the collaboration is responsible for customization

Two possible strategies:

- Produce histograms within artdaqs thread as they process the trigger streams by adding a (prescaled) analyzer
  - PRO: unbiased sample, analyze all events before trigger
  - CONS: costs CPU and reduces trigger performance
- Use a dispatcher after the data logger node to sample events and produce histograms
  - PRO: only sees triggered events, and will likely see a fraction of events to keep up with rate.
  - CON: does not impact trigger performance

For each strategy, we can either:

- Save the data to a network drive, subsequently read by otsdaq
- Directly send the data to otsdaq via network

Near-Line

- Near-line should be a limited look at 100% of the data within 30 min – 2 hr
- Need to define what “a limited look” means. Something similar to offline data validation with simplified algorithms

Summary

- A plan for slow-control monitoring has been developed
  - Already an acceptable plan
  - Some part must still be clarified
    - define the scope / purpose of online monitoring data
    - Near line monitoring

- We should try to find synergies with Offline monitoring tools to reduce the development costs