

# EIC Detector 1 DAQ WG

April 28th 2022

# Detector 1 interim DAQ WG

The overall goal of the detector WG's is to optimize the ECCE reference design towards a technical design within the constraints listed above. In working towards this goal, the DWG's should collaborate with existing detector consortia (EICSC, EEEMCAL, MPGD, DIRC, DRICH, AC-LGADs, etc.), all detector R&D efforts relevant for Detector-1, and any additional efforts within the EIC scientific community.

- All working groups will work closely with the Global detector / integration working group and the EIC project towards a technical design that optimizes the global detector performance, taking into account global integration and physics performance.
- Each joint WG should hold at least one kickoff meeting where the designs of each proposal are presented in detail. It is critically important that WG members understand the scientific and technical reasoning behind different design choices before engaging in optimization discussions.
- The WG conveners will lead a discussion to identify any non-trivial differences and/or aspects in need of further optimization.
- For each non-trivial difference working groups will then work to prepare a pro/con list accounting for technical performance, risk and cost. The resolution of non-trivial differences should be discussed in close consultation with the Global detector/integration WG, physics working groups, the EIC project, relevant detector consortia and R&D efforts.

# Meeting time(s)

- Tuesdays 3 to 4 PM Eastern time
- Thursdays 9 AM to 10 AM Eastern
- Maybe bi-weekly

# Indico, Wiki and mailing list

- [Indico](#)

[DAQ / Electronics / Readout · Indico \(bnl.gov\)](#)

- Wiki

[https://wiki.bnl.gov/eic-project-detector/index.php/DAQ](#)

- Mailing list

<https://lists.bnl.gov/mailman/admin/eic-projdet-daq-l>

# Agenda

- Summary Tuesday meeting : comparison ATHENA/ECCE DAQ
- Discussion WG charge

# DAQ WG additional charges

- evaluate expected data rates ( physics ) including possible backgrounds ( physics and detector noise )
- gather detectors and electronics associated requirements
- (set up dialog with each individual detector to define protocols and requirements of readout) and add to each WG charge
- specify early data format and protocol (data format and physical signal ) to be commonly used (Specification and standardization as much as possible protocol, signals, electronics )
- ((Develop clock/time system for streaming readout and high resolution TOF ( 10 ps )))  
2 points : fast control for synchronization , flow control , timestamp busy  
timing resolution : 10 ps is difficult everywhere, only TOF require – could have two systems and one dedicated for TOF
- update and refine cost estimate, work with project to finalize design with cost envelop (market survey : have estimates of potential solutions ( commercial or custom ))
- (Prepare for drafting DAQ preTDR)
- How organize with interim WG and actual future WG . What do we need to accomplish by July ? Maybe main charge of group is creating final WG