Dear Colleagues,

The TIC meeting held on Monday, August 21st focused on the Far-Backwards detector systems and their integration both in ePIC and the EIC beamline and was highly informative. The excellent presentations were greatly appreciated. Some specific notes and points which require attention and follow-up include:

1)   Far-backwards integration

There has been substantial evolution and improvement of the designs for the luminosity monitor (location further down the beamline and the additional of a sweeper magnet) and the low-Q^2 tagger (the possibility of a secondary vacuum and impact on beam impedance) as a result of the excellent work of the DSC's. These design revisions need to be integrated with the beamline design and questions about the impact on beam impedance, the required thickness of exit windows, etc. answered in order to proceed to a detailed technical design. At the present time, engineering resources for the project are heavily subscribed and the work done is prioritized. The far-backward DSC's should not expect substantial engineering progress until December at the earliest due to the limited engineering resources.

2)   Far Backward Pair Spectrometer

Optimization work is underway to determine the optimal number of planes in the pair spectrometer, given the good position resolution of the planned 2D W/SciFi calorimeters. This effort should be seen as part of the work important required to map the requirements to the detector performance specifications and we look forward to the results of these ongoing studies.

It should be noted that the addition of a sweeper magnet should be seen as a refinement of the conceptual design, and should not need a change control process to proceed.

3)   Far-Backward High Rate Calorimetry

Unfortunately there was no presentation from high-rate calorimeter due to the short notice and vacation schedules. It should be remembered that the high rate calorimetry is important not just to ePIC as an experiment, but is a key piece of instrumentation for the EIC machine as well. The high rate calorimetry DSC should work to integrate not just with ePIC (as a DSC) but with the luminosity monitoring group on the EIC machine side as well.

4)   Far Backward High Rate Tracker

There was some discussion during the meeting about how events with backgrounds included are created for simulations. For the high-rate tracker, the TimePix will generate hits with a ~400ps

timing resolution and therefore will be able to separate backgrounds from preceding and following bunch crossings. Currently the events are created by adding background events flat in time without respecting the time structure of additional crossings, but in a way that is perfectly reasonable for studying detectors in the central barrel that have a long (10us) integration time. Events created this way are not necessarily appropriate for studying backgrounds in the far-backward detector systems, but the framework used is flexible and it should be possible to create an appropriate sample for the far-backward detectors. Simon will follow up with the Background Task Force to discuss the details.

Regards,
John

John Lajoie
he, him, his
Harmon-Ye Professor of Physics
Iowa State University

(515) 294-6952
lajoie@iastate.edu