News

- **TOF DSC organization**
  - Collect interests in R&D and construction query
  - Connect institutions with working groups list
- **ePIC Simulation (next campaign starts on June 1, next next one on July 1)**
  - TOF in tracking – Nicolas: fix the issue with full forward TOF geometry in tracking
  - TOF PID in reconstruction – Oskar/Zhenyu: reconstruction, validation plots
  - TOF digitization – Adam/Souvik: charge sharing and detector noise
  - TOF service in simulation – TBD: implement the missing material for mechanical support structure, cooling and cabling
- **EIC Project Detector R&D (eRD112/109)**
  - Latest updates: Indico pages May 16 and June 6
  - FY23 report and FY24 proposal due on **July 7 (internal deadline June 20)**: Overleaf view link (for editing, please contact Zhenyu)
- **EIC Project Engineering Design (TOF PED)**
  - Presentation on updated mechanical engineering proposal by Andy et al. today (**May 30**)
  - Meeting on integration with project engineer team **tentatively in the week of June 5**
- **EIC Project Review on ePIC PID detectors on July 5-6 8am-2pm EDT**
  - To assess the current state of all PID detectors, serve as a status report for Project Management and DOE
  - Peter Krizan (Ljubljana), Chair Floris Keizer (CERN), Ana Amelia Machado (UniCamp), Koji Nakamura (KEK), Justin Stevens (W&M)
- **EIC User Group Meeting @ Warsaw on July 23-31** https://indico.cern.ch/event/1238718/

EIC Project Review of PID Detectors in July 2023

Incremental Design and Safety Review of the EIC Particle Identification Detectors

Charge to the Committee

The scope of this review includes all aspects of particle identification detectors (but not those that are calorimetry-based) in the central EIC detector, which includes the barrel, the forward endcap, and the backward endcap regions. This includes five detector systems. In particular, a proximity-focusing RICH in the backward region, a high-performance DIRC and AC-LGAD to augment particle identification with TOF in the barrel region, and a dual RICH and AC-LGAD in the forward region. The review may include design and fabrication choices and their cost-effectiveness, the construction schedule, considerations for safety and quality assurance, levels of redundancy, front-end electronics and interface to the data acquisition system, commissioning and calibration procedures, considerations for materials and labor, operational reliability and longevity, and any other considerations that may influence the construction, maintenance and operation of these particle identification detectors.

You are asked to address the following questions:

1. Are the technical performance requirements appropriately defined and complete for this stage of the project?
2. Are the plans for achieving detector performance and construction sufficiently developed and documented for the present phase of the project?
3. Are the current designs and plans for detector and electronics readout likely to achieve the performance requirements with a low risk of cost increases, schedule delays, and technical problems?
4. Are the fabrication and assembly plans for the various particle identification detector systems consistent with the overall project and detector schedule?
5. Are the plans for detector integration in the EIC detector appropriately developed for the present phase of the project?
6. Have ES&H and QA considerations been adequately incorporated into the designs at their present stage?

Please address these questions point-by-point.

You will be supplied with the detailed schedule and manpower assumptions, drawing packages, copies of presentations relevant to this subject material, and the project milestones extracted from the most current EIC resource loaded P6 schedule as part of the pre-brief material.

Note that several aspects of the EIC detector including its electronics, and data acquisition systems have been reviewed previously. Along with your briefing materials, you will also be supplied with the reports from earlier reviews (e.g., on the magnet design, electronics and data acquisition, calorimetry).

Internal Structure

- Barrel TOF
  - Sensor: sensor, sensor-ASIC integration
  - Frontend electronics: ASIC, service hybrid
  - Detector Module: module structure, module assembly
- Forward TOF
  - Sensor: sensor, sensor-ASIC integration
  - Frontend electronics: ASIC, service hybrid
  - Detector Module: module structure, module assembly
- Common systems
  - Backend Electronics: power supplies, DAQ system
  - Mechanics: support structure, cooling system
  - Alignment system
- DPG:
  - Simulation and reconstruction, Physics cases, Database, …

Call for FY24 R&D Proposals

Dear current and future R&D participants,

It is time to discuss the next steps in our path, i.e., the FY24 projects. We are trying to get the R&D program fully in sync with the FY boundaries.

Proposals

1. Please submit your proposals and progress reports (where applicable) to us by July 7, 2023. We aspire to have a DAC meeting well in time to prepare for contracts at the beginning of FY24.
2. We expect progress report from all ongoing projects eRD101 to eRD113. What milestones were achieved. How did our understanding improve. What is left to do?
3. eRD102, eRD103, eRD104, eRD106, eRD107, eRD108, eRD109, eRD110, eRD111, eRD112, and eRD113 may submit continuation proposals if and only if technical risk milestones remain.

These new proposals should be relatively straightforward to write. Keep them short and concise. List whatever technical risks remain, the milestones, deliverables, and two money matrices showing cost/item and funding/institution to close those remaining risks. Also list the representatives for each institution. List all participating members and institutions on the front page. Please also give, if applicable, an outlook for the years past FY24.

Be aware that R&D should not be mixed with PED. If you are not sure, talk to us. The proposals should concentrate on detector R&D tasks that mitigate project detector technical, risk.

DAC Review Meeting

With the project detector R&D expected to dwindle down at CD-2, we will limit the meeting to a two-day review meeting in the July-August period. The FY24 proposal goals of all continuation projects should be presented as well as a short status report of all FY22/FY23 proposals. More details on this meeting will be announced soon.

Best regards,
Elke, Rolf, and Thomas