EIC Silicon Consortium mtg.

July 11, 2022

Today:

- Meeting logistics:
  - Is our meeting day/time still the better compromise for the Summer period or should we revisit?
    - End of semesters, start of Summer, contributor (un-)availability,
  - Sharp deadline to respond to generic R&D of Monday July 25, 5pm EDT
    - Consider dedicated meetings e.g. upcoming Monday July 18 and 25 (if Mondays at this time are still optimal)?

- News on vertexing and tracking layout re-optimization for detector-1,

- eRD104, eRD111
  - Status of statements of work necessary to set up the contracts,
  - Dedicated updates in a future meeting (?)

- Generic R&D call

- Updates — no “targeted” updates this week, but

- AOB

Proposed ECCE Tracker – now reference for Detector 1

(ECCE proposal)

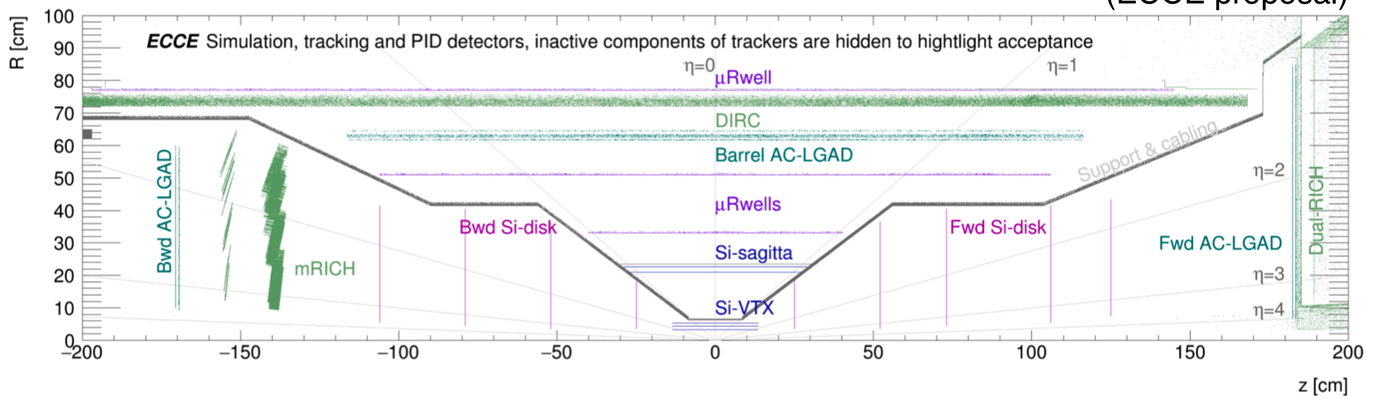

Figure 2.5: Schematic view of the ECCE tracker, including silicon, μRWELL, AC-LGAD, DIRC, mRICH and dRICH detector systems.

(Likely) updates to reference concept:

- Innermost silicon vertex barrel radii adjusted to ~36 mm based on current understanding of sensor size and beam bake-out needs — impact on single-track DCAs quantified in simulations; fwd/bckwd acceptance understood but not yet reoptimized,

- Two outer barrel-tracker re-configurations considered towards recovering YR performance;
  - Low-mass sagitta layers using vertex-like ITS3 large-area sensors and kapton-encapsulation,
  - ~120 mm radius (third) outermost “vertex” layer complemented with a single ~270mm sagitta and ~420mm radius barrel layers — picked for initial general simulation campaign this month, which aims to make a start also on incorporating various backgrounds,

- Reconfigurations of forward and backward disk arrays to follow,

- c.f. Tracking WG mtg past June 23, https://indico.bnl.gov/event/16261/

Generic R&D Call — Proposal deadline July 25 (!) at 5pm EDT

- Main website: https://www.jlab.org/research/eic_rd_prgm

- *"This program will support advanced R&D on innovative, cost-effective detector concepts which reduce risk and that either the one detector in the project scope or a second detector could incorporate."*

- Proposal deadline is quite tight — July 25, 2022 at 5pm,

- Overall size of the program ~2M USD for FY23 (October 1, 2022 - September 30, 2023),

- Similar to and different from earlier generic R&D program — c.f. https://wiki.bnl.gov/conferences/index.php/EIC_R%25D —

- Proposal guidelines: https://www.jlab.org/sites/default/files/eic_rd_prgm/docs/EIC_RandD_ProposalGuidelines_JLabFY2022DRAFT.pdf
  - Research consortia are explicitly encouraged,
  - 3 budget scenarios — baseline, -20%, -40% — and clearly delineated roles and funding by institution,
  - All proposals will be considered new, that is, no continuation from, say, from our eRD25 or needs for associated progress reports,
  - Preferably one and at most two contact persons; PIs and proponents to be explicitly listed,
  - Postdoc support is not excluded
  - Committee review indicated; no details (yet) on committee composition and/or review dates, etc.

- Some possible candidate topic areas:
  - Mechanical R&D — e.g. kapton-encapsulated sensors towards low-mass larger-area coverage,
  - Aluminum conductor development — almost certainly needed in view of world-situation; might be a candidate also for SBIR (in the U.S.),
  - Sensor development towards fast MAPS — O(20 ps) ToF; EIC-ITS3 sensor R&D itself are essential, but may find/have a better home within project R&D (?)
  - Cooling R&D — ^{4}He, microchannels, …
  - Other?

- Probably most natural to consider a "grass-root" approach from within the consortium rather than more of a project-need driven top-down approach for this call (?)