Requests to the DWG Subgroups (short term activity for June 15 meeting)

All Detector Working Groups

- Review material from PWGs presented at the Pavia meeting. Document the requirements relevant to your group and any concerns or missing information and present it at our June 15 meeting;
- Document the current status of your working group, e.g. based on the Pavia meeting summaries in the DWG Wiki by June 15
- Start thinking about the outline for your YR section and present a scheme at our June 15 meeting;
- List all suitable technologies for all applicable regions of the detector in the DWG Wiki by June. 15.

Suggestions to the DWG Subgroups towards the 3rd EIC YR Workshop (longer term activity)

DAQ/Electronics

- Continue and increase active communication with other DWGs, e.g. gather further information on detector types, expected rates, and readout electronics; a compilation of the specific FE needs of detectors is also needed;
- Identify and document the technologies required for 100 Gb/s streaming
- Interact with the software/detectors WG to identify the requirements for the online/offline reconstruction software, expected physics/background data rates and computing requirements

Calorimetry

- Determine, as much as possible, the power generated by the readout for all calorimeter technologies.
- Evaluate the impact of material in front of the calorimeters on performance. What is the maximum radiation length that can be tolerated in front of the calorimeters? Are there position constraints for this material?
- Explore additional technology solutions, e.g. HCAL technologies that can provide <40%/sqrtE as required by large-x physics.
- Examine cabling requirements for all calorimeter technologies and assess material budget.

Tracking

- Continue evaluation and performance studies of different technologies.
- Evaluate material budget.
- Implement realistic material for the services for all tracking technologies
- Determine, as much as possible, the power generated by the readout for all tracking technologies

PID

- Continue work in the direction chosen addressing e-pi separation and PID detector space requirements
- Estimate quantitatively benefit of vertex shift for technology selection with limited space. Evaluate the cases of additional longitudinal space +25cm, +50cm, and +100cm and the cases of less longitudinal space -25cm.

- Evaluate alternative readout options to minimize the impact on electron detection in the electron endcap
- Determine the impact on electron identification in the central region if there is no help from dE/dx in an all silicon-vertex tracker scenario
- Determine, as much as possible, the power generated by the readout for all PID technologies

Polarimetry/Ancillary Detectors

- Follow your plan towards choosing optimal technology for the polarimeters
- Continue optimization of simulations and system layout for the luminosity monitor

Forward Detectors/IR Integration

- Follow your plan to evaluate the geometric acceptance with baseline IR design
- Propose baseline detector concepts for far forward hadron and photon detection and study resolutions, e.g. beam pipe design in the forward region to further determine space constraints and effects on acceptance.
- Work out options for forward detectors: calorimeter in B0, roman pots, and ZDC (sizes, dimensions, resolution)
- Use studies to help inform second IR design to potentially cover gaps in the baseline IR

Central Detector/Magnet

- Evaluate the central solenoid magnet options discussed, new 3T or new 2T with sufficient bore. This includes documenting the physics studies and the engineering studies of these options.
- Evaluate cases for bore being +20cm, -20cm, +40cm radially and document the impact.
- Collect information provided by subgroups in a central place. Material budget tracking and limitation requests.

Joint Forward Detector/IR Integration and Central Detector/Magnet Integration

- Communicate with accelerator design about shifting the interaction point (~0.5m) for maximum space for detectors as space in the forward region is at a premium.
- Determine the impact on accelerator and performance if magnet shifts an additional 0.5m (beyond the ~0.5m IP shift in the first point for a total of 1.0m)
- Work on optimizing the region between central and forward regions, e.g. beampipe, material budget, exit window for B0, the aperture of the B0 magnet to maximize detector space and adding a possible photon detector.
- Decision on rear side on layout of quads - impact on electron measurements and Q2 range

Complementary Detectors

- Continue meetings with other subgroups to collect ideas for complementarity.
- Continue communication with subgroups about each group generating cartoon layouts for different detector options that maximize the complementarity functionality
- Similar, work with the Central Detector/Magnet and Far-forward Detector/IR integration for magnet and IR variations that could provide complementary science functionality.