MEMO

Date: April 27, 2022

To: Wolfram Zeuner; Gerrit van Nieuwenhuizen; Fulvia Pilat

From: Rolf Ent; Elke Aschenauer

Subject: Technical Review of the EIC IR Integration and Auxiliary Far-Forward/Far-Backward Detectors

This review takes advantage of the 3D CAD layout of the RCS, ESR and HSR beam lines in the interaction region. This allowed to make the next step integrating the auxiliary detectors along the beam line: the backward small-angle electron tagging detectors, the Zero-Degree Calorimeter, the off-momentum detectors, Roman Pots, and the detector systems in the B0 magnet. This review also includes aspects of the integration of the detector with the interaction region such as expected vacuum and backgrounds, and ongoing beam pipe and detector support structure concepts. This review is mainly to check progress and ensure no scope or interface is forgotten.

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 for detectors and electronics readout likely to achieve the performance requirements with a low risk of cost increases, schedule delays, and technical problems?

4. Are the sub-detector fabrication and assembly plans consistent with the overall project and detector schedule?

5. Are the plans for detector integration in the interaction region appropriately developed for the present phase of the project?

6. Have ES&H considerations been adequately incorporated into the designs at their present stage?

Please address these questions point-by-point.

You will be supplied with a 3D pdf file of the IR layout, 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.

Cc:
A. Lung
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