EIC Accelerator Collaboration Charter

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This document represents a draft Charter for the EIC Accelerator Collaboration. The document will be reviewed by the EIC partner labs and EIC project, and will be presented at the kick-off meeting of the EIC Accelerator Collaboration in May of 2024.

# Background

The Electron-Ion Collider (EIC) will be a discovery machine for unlocking the secrets of the “glue” that binds the building blocks of visible matter in the universe. It will be constructed at Brookhaven National Lab on the basis of the Relativistic Heavy Ion Collider (RHIC) and consist of two intersecting accelerators: one producing an intense beam of electrons, the other one a high-energy beam of protons or heavier atomic nuclei, which are steered into collisions.

The EIC was conceived as an international project from the very beginning, and attracted larger number of collaborators from all around the world, both for experimental detector and accelerator facility. The 2020 and 2021 EIC accelerator workshops, which attracted hundreds of participants from more than 20 countries, as well as numerous technical meetings with representatives from national and international institutions, are examples of such collaboration.

The Electron-Ion Collider (EIC) partner host labs, Brookhaven National Laboratory and Jefferson Lab, are now establishing a formal international collaboration, with the purpose, structure, and operating principles as defined below.

The EIC Accelerator Collaboration functions will be largely defined and conducted through the activities of its Institutional Collaboration Board and Collaborating Working Groups. This Charter describes the purpose, structure, principles, operations, and outputs of the EIC Accelerator Collaboration.

The EIC Accelerator Collaboration Charter is:

* A living document to be maintained and modified by the Institutional Collaboration Board and its Co-Chairs.
* A procedural guide, describing the operation of the EIC accelerator collaborative work and how EIC accelerator collaboration members commit to interact constructively in good faith, and which is accompanying the EIC Accelerator Collaboration MOU, that can optionally be signed by the partner institutes who reached the stage of design and hardware contribution to the EIC.
* An informal agreement among EIC Accelerator Collaboration members that does not have any legal standing.
* A public document, available for anyone to read and review. Comments about this document should be addressed to the Co-Chairs of the EIC Accelerator Collaboration.

# Purpose of EIC Accelerator Collaboration

The EIC design, construction, and future upgrades have many exciting scientific and technical challenges, creating opportunities for a worldwide accelerator collaboration to become part of this exciting endeavor. The EIC Accelerator Collaboration will benefit the EIC project, collaborating partners, and the wider community of accelerator experts. The EIC Accelerator Collaboration will also enhance the developments of the evolution, upgrades, and the ultimate performance of the EIC facility.

# Accelerator Collaboration Structure

The EIC The EIC Accelerator Collaboration consists of individuals from the partner institutions interested in EIC, and has the following structure. Representatives of participating institutions form the Institutional Collaboration Board. The individuals can join Collaborative Working Groups. The meeting of Accelerator Collaboration and Institutional Collaboration Board are coordinated by Co-Chairs of Accelerator Collaboration. This structure is described below in more details.

**Institutional Collaboration Board** consists of representatives appointed by the institutions. The initial membership of the ICB established at the Accelerator Collaboration kick-off meeting, from the institutes willing to join the Accelerator Collaboration. Further expansion of the collaboration and acceptance of the new institutional partners will be done via a simple majority vote by the ICB representatives. The meetings of ICB are coordinated by Co-Chairs of Accelerator Collaboration. The ICB meets at least once per year.

**Collaborative Working Groups** are topical groups that are established to cover variety of activities related to EIC. Activities of the Working Groups are coordinated by leaders, who are appointed by Co-Chairs of Accelerator Collaboration in coordination with ICB and EIC project Technical Director. The Working Groups are meeting frequently, as defined by their leaders. It is foreseen that the following Working Groups will be created:

1. Beam dynamics, beam optics
2. Beam-beam effects
3. Beam cooling at collisions
4. Beam polarization generation, preservation and diagnostics
5. Second IR
6. EIC commissioning
7. EIC upgrades
8. In-kind accelerator contributions
9. Synergies with other projects (e.g. FCC, MC)

The list of working groups will evolve as needed for EIC and its partners.

**Co-Chairs of Accelerator Collaboration** are initially appointed, at the formation of the collaboration, for a period of one year, and once the Collaboration and ICB are established, will be elected by ICB. A staggered approach to their appointment will be chosen and their term likely extended to two years as standard.

# Operating Principles

The EIC Accelerator Collaboration will strive to create open and inclusive environment where all talents will flourish, and decision making process will be collegial and aimed at reaching consensus.

# Operating Timeline

The EIC Accelerator Collaboration is intended to function during the EIC project construction, and also after, during EIC commissioning, operation for science, and during possible upgrades.