

## The EIC Computing and Software Joint Institute (ECSJI)

Brookhaven National Laboratory (BNL) and Thomas Jefferson National Accelerator Facility (JLab), as EIC host Labs, are creating a joint structure, the EIC Computing and Software Joint Institute (ECSJI), incorporating parts of BNL and JLab facilities to support the EIC and computing and software needs and activities. ECSJI will leverage complementary expertise at the two Labs and provide needed visibility to the respective Lab management and stakeholders. The advantages of such a structure also include increased reliability and availability of resources for the ePIC collaboration.

The success of the EIC, an international scientific endeavor, will benefit from contributions from international partners towards its computing effort. To facilitate efficient coordination, the institute will administer the EIC International Computing Organization (EICO), which will include all the contributors to the computing effort.

### Scope of the EIC Computing and Software Joint Institute

*This institute will provide for EIC computing and software matters:*

- 1) A single entity to interface with the EIC project and the ePIC collaboration,
- 2) Maintains Service Level Agreements and statements of work outlining the host labs' contribution to the ePIC collaboration concerning computing resources, services, and personnel assigned to work on ePIC computing and software deliverables,
- 3) A coordinating body for interacting with international partners providing computing resources as in-kind contributions. This includes assessing resources, managing the MOUs with the sites delivering resources (including service levels), and facilitating and assessing the delivery against the MOUs,
- 4) Execution of host Lab responsibilities as detailed below.

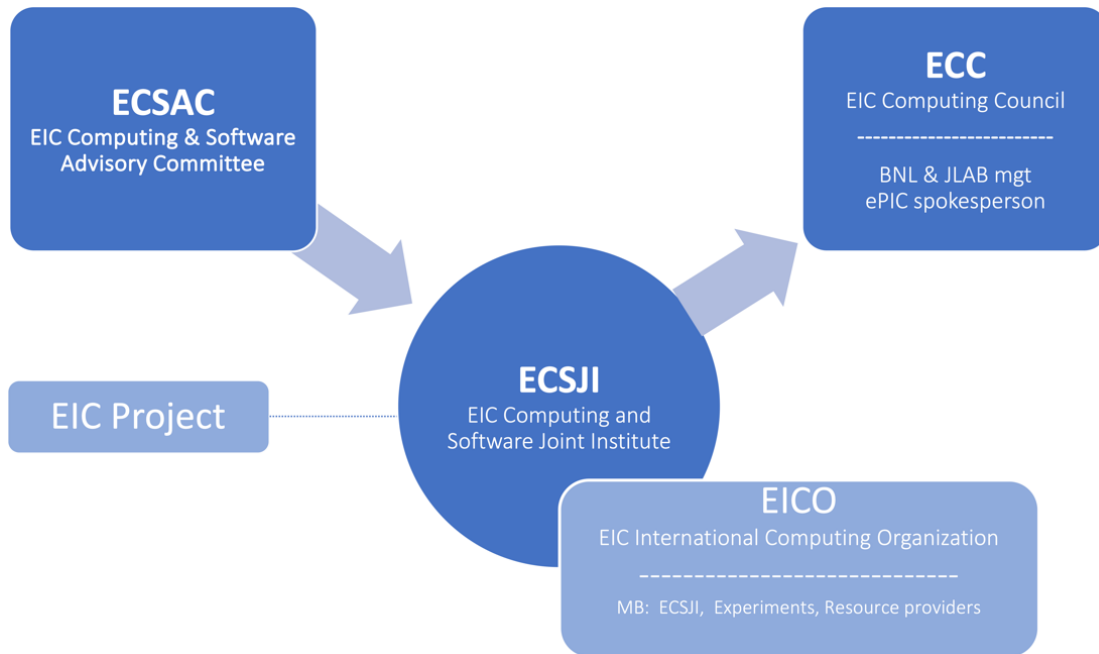
### Organization & Governance

The institute aims at providing efficient support to the EIC while acknowledging the differences in the organization at the two Labs. The proposed governance model ensures that the EIC experiment(s) are well supported in matters of computing and software, the institutes' performance is monitored, and reporting is clearly defined.

#### The Institute Management

- **Composition:** the management will comprise two co-Directors; each is nominated by one Lab. The co-directors are currently Eric Lancon (BNL) and Amber Boehnlein (JLab).
- **Reporting:** the institute's management will report jointly to the two host Lab management.
- **Duties and accountability:**
  - The management will be responsible for organizing the institute to deliver on the responsibilities defined above.
  - The management will maintain a multi-year operation plan for the host Labs, providing matrixed staff members to support the activities.
  - The management will provide a yearly report to the host Lab's management.

The proposed governance structure is composed of two central bodies and is designed to facilitate communication, coordination, escalation of issues, and conflict resolution.



### The EIC Computing and Software Advisory Committee

The EIC Computing and Software Advisory Committee (ECSAC) is chartered to propose advice, guidance, and counsel on the strategy and objectives of the Institute and of the EIC International Computing Organization. The ECSAC reports to the ECSJI management. The ECSAC chair and committee members include external managers and experts in the field appointed by the Institute management in consultation with the host Lab’s management. It will initially meet at least twice a year or as requested by the Institute management. The ECSAC serves as the Institute management’s external advisory committee; it will submit a report to the Institute management after each meeting.

*The proposed responsibilities are:*

- Review the strategy and objectives of the Institute to support EIC Computing and Software,
- Evaluate the adequacy of the infrastructure and resources to meet the computing requirements of the ePIC collaboration,
- Evaluate proposed technical solutions and their implementation,
- Identify opportunities to increase effectiveness and efficiency,
- Provide recommendations on technical and organizational matters.

If conflicting requirements affect the operation, planning, or budget, the ECSAC will be asked to provide recommendations to the Institute management, who will escalate them to the EIC Computing Council.

### The EIC Computing Council

The EIC Computing Council (ECC) is chaired in alternation by the Associate Laboratory Director for Nuclear and Particle Physics of BNL and the Deputy Director for Science of JLab. It comprises the ALDs/ADs and deputies involved in the EIC science program and the Institute management. The ePIC collaboration spokesperson or deputy is an ex officio member of the ECC.

- *Responsibility:* Review the ECSJI strategic direction and support leadership in managing effective interfaces of the ECSJI to the EIC project and ePIC collaboration.
- *Authority:* Approve the ECSJI strategic direction, leadership changes, annual budgets, resource allocations, and performance milestones.

*Additional proposed responsibilities are:*

- Oversee the development and implementation of EIC Computing and Software and review future computing needs,
- Oversee synergies between the host Labs in EIC scientific computing area and provide institutional strategic direction,
- Resolve high-level issues between different stakeholders.

The ECC will initially meet at least twice a year or as requested by the management of the Institute and hear reports from the Institute management.

### The EIC International Computing Organization

The EIC International Computing Organization (EICO) is led by the Institute's co-directors and administered by the ECSJI. This organization exists to provide computing resources and infrastructure to the ePIC collaboration and potentially other EIC computing needs. As the EICO becomes established, its structure will be formally documented in an EICO charter.

*The proposed responsibilities include:*

- Document and maintain agreements with international contributors to EIC computing,
- Collect requirements from the ePIC collaboration,
- Produce accounting reports of EIC computing,
- Accounting report to the EIC Resource Review Board (EIC-RRB<sup>1</sup>) detailing service delivery with respect to agreements,
- Supervise Service Level Agreements,
- Propose members for ECSAC.

The EICO is managed by a board that includes representatives from ePIC and international partners. The Management Board (MB) will meet at least quarterly and hear regular reports from the ePIC experiment.

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<sup>1</sup> The purpose of the Electron-Ion Collider Resources Review Board (EIC-RRB) is to provide coordination among the different funding partners during both the detector development and construction phase of the project and during the operations of the experiments that follow.

## Responsibilities

### The Host Lab's Responsibilities

*The primary technical responsibilities of host Labs include and are not limited to the following:*

- Oversight for ePIC software and computing designs and execution to provide assurance functions for the host Labs and DOE,
- Provisioning and operating standard infrastructure solutions consistent with supported Lab infrastructures and with community best practices,
- Support for the EICO,
- Interface for local resources and policies at the respective Labs,
- On-going computing operations in support of the accelerator and detectors design and construction,
- Operational Support Functions for:
  - Experimental data curation,
  - First-pass processing,
  - Data analysis,
  - Support of collaboration(s) and users,
  - Accelerator and detector simulations.

### ePIC Collaboration Responsibilities

*The ePIC collaboration responsibilities include and are not limited to the following:*

- Developing and documenting a cost-effective computing model tailored to the experiment's needs, with the concurrence of the host Labs,
- Developing and maintaining multi-year resource plans,
- Report ePIC status in computing and software to the EIC-RRB,
- Identifying with input from the host Labs, a Computing and Software coordinator who serves as Point of Contact to ECSJI,
- Developments of Software Algorithms,
- Production operations.

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