

# Introduction

**EIC Silicon Consortium meeting**

**December 5, 2022**

Giacomo Contin, Laura Gonella, Ernst Sichtermann

# A few reminders

- Past November 7, we discussed a baseline configuration for the MAPS-based tracking and vertexing subsystem for the EPIC experiment, c.f. <https://indico.bnl.gov/event/17713/>. *The* baseline is becoming:
  - increasingly defined in terms of geometrical layout of barrel layers and disks, as well as
  - increasingly understood in terms of sensor layout for barrels and disks.
- Past November 21, we discussed considerations for the EIC Large-Area-Sensor design, an update on mechanics, and services, c.f. <https://indico.bnl.gov/event/17765/>
  - services, as expected, are a critical item for the EPIC experiment,
  - power is likely to dominate the inactive material for the MAPS-based tracking and vertexing subsystem,
- Today, Jo Schambach will give an update on the ITS3 test setup and tests at ORNL and discuss DAQ,
- Looking ahead to the immediate future, we plan for an update on powering at our December 19, 2022 meeting (last general meeting in 2022),

# A few reminders

- Recent reviews:
  - Project R&D review past October 19-21, 2022, c.f. <https://indico.bnl.gov/event/17159/>
  - Generic R&D review past November 15-16, 2022 , c.f. <https://indico.jlab.org/event/658/> and <https://indico.jlab.org/event/659/>understandably drew attention to ongoing R&D phase. Awaiting outcomes beyond close-outs at the reviews themselves
- Most recent and reviewed estimates of construction cost and schedule date back to the ATHENA, CORE, and ECCE proto-collaboration proposals, approximately 1 year ago, c.f. <https://www.bnl.gov/dpapanelmeeting/>
- The EPIC collaboration and the project are conducting subsystem reviews; anticipate a tracking subsystem review in early 2023 (see e.g. Silvia Dalla Torre's talk at the most recent EPIC general meeting <https://indico.bnl.gov/event/17767/> and, for general reference, also consider the draft-charge for the upcoming barrel electromagnetic calorimeter review at today's GD/I meeting <https://indico.bnl.gov/event/17881/>)
- Other (project) reviews and proposals are imminent as well,
- It is timely to revisit cost, schedule, institutional interests, and planning for construction. Pertinent inputs include:
  - EoI (2020), c.f. <https://indico.bnl.gov/event/8552/>; ATHENA, ECCE, and CORE proposals (2021),
  - EPIC institutional interests, c.f. survey (<https://indico.bnl.gov/event/15784/>) and results (2022),
  - EIC Silicon Consortium meeting past October 10, 2022, c.f. <https://indico.bnl.gov/event/17418/>

# EPIC Survey (Input received)

Id	Institution	Contact Name	Software Wc	Tracking Silico	Tracking AC-LGA	Tracking MPG
10	Brookhaven National Laboratory	Steinberg, Peter	Yes	Yes	No	No
11	Brunel University London	Teodorescu, Liliana	Yes	Yes	No	No
15	CEA-Saclay	Bossu, Francesco	Yes	Yes	Yes	Yes
16	Central China Normal University	Wang, Yaping	No	Yes	No	No
18	Central University of Tamil Nadu	Behera, Nirbhay Kumar	No	Yes	No	No
24	Czech Technical University in Prague	Adam, Jaroslav				
25	Daresbury Laboratory	Lemmon, Roy	No	Yes	No	No
36	Goa University	Palni, Prabhakar	Yes	Yes	Yes	Yes
39	IIT Madras	Pujahari, Prabhat	No	Yes	No	No
41	Indian Institute of Science Education and Research (IISER) Tirupati	Jena, Chitrasen	No	Yes	No	Yes
43	Indian Institute of Technology Bombay	Mukherjee, Asmita	Yes	Yes	No	No
46	Indian Institute of Technology Patna	Shah, Neha	Yes	Yes	No	Yes
49	INFN Gruppo Collegato di Salerno and Dipartimento di Fisica "E.R. Caianello", Università di Salerno	De Gruttola, Daniele				
52	INFN Sezione di Bari, Dipartimento Interateneo di Fisica, Università di Bari and Università di Foggia	Elia, Domenico	No	Yes	No	No
57	INFN Sezione di Padova and Dipartimento di Fisica e Astronomia "Galileo Galilei", Università di Padova	Turrisi, Rosario	No	Yes	No	No
58	INFN Sezione di Pavia	Radici, Marco				
62	INFN Sezione di Trieste and Dipartimento di Fisica, Università di Trieste	Dalla Torre, Silvia	Yes	Yes	No	No
64	Institute of Physics, Academia Sinica	Chang, Wen-Chen	No	Yes	No	No
67	Jazan University	Bukhari, Masroor	Yes	Yes	No	No
68	Jefferson Lab	Higinbotham, Douglas	Yes	Yes	No	Yes
73	Lancaster University	Dainton, John	No	Yes	No	No
74	Lawrence Berkeley National Laboratory	Sichtermann, Ernst	Yes	Yes	No	No
77	Los Alamos National Laboratory	Liu, Ming	No	Yes	Yes	No
78	Massachusetts Institute of Technology (MIT)	Hen, Or	Yes	Yes	Yes	Yes
82	MPI Munich	Abt, Iris	No	Yes	No	No
83	National Central University	Kuo, Chia-Ming	Yes	Yes	Yes	No
86	National Taiwan University	Lu, Rong-Shyang	Yes	Yes	Yes	No
90	Nuclear Physics Institute, Czech Academy of Sciences	Bielcikova, Jana	No	Yes	No	No
91	Oak Ridge National Laboratory	Read, Kenneth	Yes	Yes	Yes	No
93	Old Dominion University	Hyde, Charles	No	Yes	No	No
97	Pusan National University	Lim, Sanghoon	No	Yes	No	No
103	Rutherford Appleton Laboratory	Iain, Sedgwick	No	Yes	No	No
109	Southern Methodist University	Olness, Fred	No	Yes	No	No
112	Taras Shevchenko National University of Kyiv	Aushev, Volodymyr	No	Yes	No	No
119	University and INFN Bari	Elia, Domenico	Yes	Yes	Yes	Yes
121	University of Birmingham	Jones, Peter	No	Yes	No	No
122	University of California, Berkeley	Jacak, Barbara	No	Yes	No	No
123	University of California, Davis	Cebra, Daniel	No	Yes	No	No
135	University of Manitoba	Deconinck, Wouter	Yes	Yes	No	No
137	University of Michigan	Aidala, Christine	No	Yes	No	No
141	University of Oxford	Gwenlan, Claire	Yes	Yes	No	No
145	University of Tennessee, Knoxville	Natgrass, Christine	No	Yes	No	No
148	University of Wuppertal	Ellinghaus, Frank	Yes	Yes	No	No
158	Yale University	Caines, Helen	Yes	Yes	No	No
160	Yarmouk University	Al-bataineh, Ayman	No	Yes	No	No



# Reminder - EIC SC meeting October 10, 2022

<https://indico.bnl.gov/event/17418/>

## Interests expressed

- **Sensor design**  
RAL, BNL, LBNL
- **Sensor assembly & testing**  
INFN (Bari, Trieste, Padua), UK, LBNL, LANL, Wuhan, Korean groups?
- **Mechanical support**
  - Vertex layers**  
LBNL, INFN(Trieste, Bari, Padua), UK
  - Sagitta layers**  
ORNL, LBNL, UK
  - Disks**  
LANL, LBNL, UK
- **Cooling**  
LBNL, LANL, ORNL
- **Data Cabling**  
BNL, ORNL
- **Power distribution**  
UK, ORNL, LANL, BNL, JLab?

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## Interests, continued

- **Readout**  
ORNL
- **DAQ interface**  
BNL, ORNL
- **Slow controls**
- **Interlocks**  
BNL
- **Integration**  
JLab, BNL

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# A few reminders and requests

- It is timely to revisit cost, schedule, institutional interests, and planning for construction. Pertinent inputs include:
  - EoI (2020), c.f. <https://indico.bnl.gov/event/8552/>; ATHENA, ECCE, and CORE proposals (2021),
  - EPIC institutional interests, c.f. survey (<https://indico.bnl.gov/event/15784/>) and results (2022),
  - EIC Silicon Consortium meeting past October 10, 2022, c.f. <https://indico.bnl.gov/event/17418/>
- Obviously,
  - construction is a multi-institution effort (see e.g. Nicole Apadula's talk at the 2020 SVT workshop, <https://www.jlab.org/conference/SVT-EIC>, for an overview on ALICE-ITS2),
  - all tasks will need to be covered,
- Plan to make this an item for the agenda for our December 19, 2022 meeting,
  - Your further input is sought and welcome; specifically, updates to the previous slides, ideally also including finer granularity to (sub-)tasks — we will also be reaching out,
- EPIC is organizing a (hybrid) collaboration meeting at Jefferson Lab upcoming January 9—11, 2023, c.f. <https://www.jlab.org/conference/EPIC>
  - Participation from within this group?
  - Shall we pair this with an adjacent working meeting / mini-workshop on the EPIC SVT?

# Today's Agenda

## EIC SC General Meeting



Monday Dec 5, 2022, 1:00 PM → 2:30 PM US/Eastern

**1:00 PM** → 1:20 PM **Introduction**

🕒 20m



**Speakers:** Ernst Sichtermann (Lawrence Berkeley National Laboratory), Giacomo Contin (Universita' di Trieste e INFN Trieste), Laura Gonella (University of Birmingham)

**1:20 PM** → 1:40 PM **Readout and DAQ for ePIC SVT**

🕒 20m



**Speaker:** Joachim Schambach (Oak Ridge National Laboratory)

 MAPS\_Readout\_JS...

**1:40 PM** → 1:50 PM **AOB**

🕒 10m

