UNIVERSITY OF BIRMINGHAM

UK participation in the EIC SC activities

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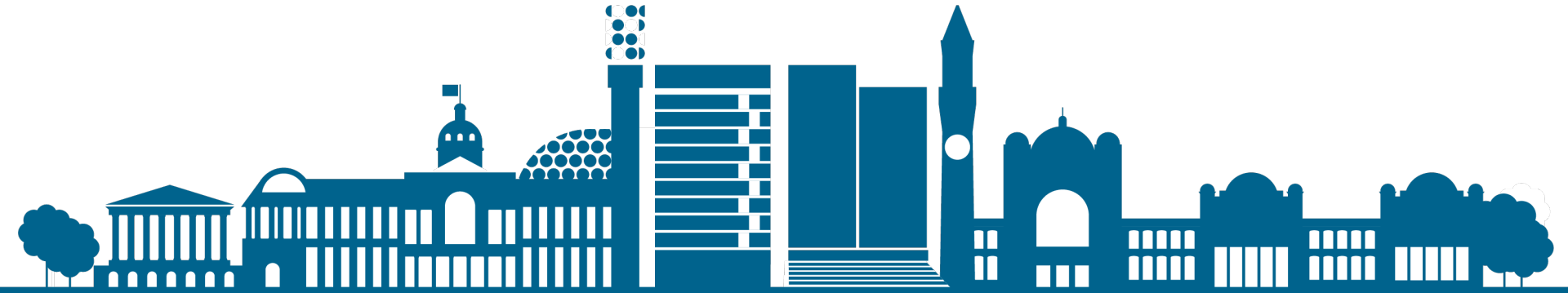
26 July 2021



Introduction

- UK funding to work on EIC detector R&D has recently been confirmed

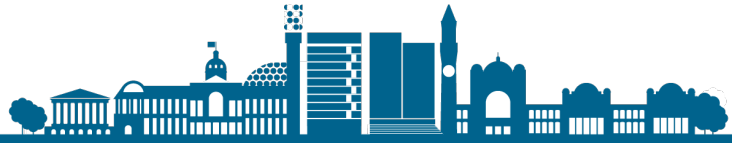
- Funding will be available 1/10/21 to 31/3/24 to work on
  - High-precision tracking of charged particles
  - Detection of particles extremely close to the beam line
  - Measurement of particle polarisation

- High-precision tracking of charged particles
  - Birmingham, Brunel, Lancaster, Liverpool, STFC Daresbury, STFC RAL TD & PPD
  - Complementary expertise and interest of the groups allow to work on most aspects of detector development
  - UK groups will work within the EIC Silicon Consortium and in collaboration with ITS3
  - *Link to UK EOI: https://indico.bnl.gov/event/8552/contributions/43225/*

EIC UK MAPS Work Breakdown Structure Proposal

- **WP1. Sensor design – RAL TD & Brunel**
  - Participation in ITS3 ER1 already ongoing, submission Q1 2022
  - Continue participation in ITS engineering runs
  - Work on EIC ER1 (sub Q1 2023) and EIC ER2 (sub Q1 2024)

- **WP2. Sensor Characterisation & DAQ – Birmingham & RAL PPD**
  - Characterisation of sensor prototypes and IP blocks in clean rooms and beam tests
  - NIEL, TID, SEE irradiations and characterisation of irradiated devices
  - Development of DAQ for sensor characterisation and IP blocks testing



EIC UK MAPS Work Breakdown Structure Proposal

- **WP3. Modules and system tests – Daresbury & Liverpool & Lancaster**
  - Design, assembly and testing of demonstrator modules and ladders
  - System level tests (electrical, mechanical, and thermal performance) of prototype modules and ladders
  - Carbon fibre structure prototyping

- **WP4. Physics performance simulations – All**
  - Implement realistic detector configuration based on work on WP1/3
  - Selected physics processes based on people's interest (DIS, heavy flavours, ...)