Science and Technology Facilities Council

Particle Physics Technology Advisory Panel terms of reference

1   Background

1.1   The purpose of the Particle Physics Technology Advisory Panel (PPTAP) is to provide a link between Executive Board, Council, the Technology and Accelerator Advisory Board (TAAB) and the community to produce a coherent UK position on the development of the R&D Roadmaps related to the European Strategy for Particle Physics Update.

1.2   The European Strategy for Particle Physics Update, which was published in June 2020, identified the immediate need for active R&D programmes for future detectors and accelerators. The establishment of R&D roadmaps was entrusted to European Collaboration for Future Accelerators (ECFA) in the case of detector R&D and the European Laboratory Directors Group (ELDG) for the critical technologies associated with accelerators.

1.3   The work on both roadmaps will start in early autumn 2020 and is expected to be completed and report to CERN Council by summer 2021. Each activity will draw on input from a number of working groups made up of experts from Member States.

1.4   It may not be possible for the UK to be active in all areas of R&D and as a consequence, it may be decided that the UK should not have representation in every aspect of the road mapping exercises.

1.5   It is recognised that the UK will benefit from a coherent and strategic approach to future R&D in this field that plays to the UK's strengths.

1.6   The lifetime of the panel will coincide with that of the European roadmapping process, expected to conclude in summer 2021. It is therefore expected to complete its activities and its final report to TAAB by October 2021.

2   Terms of reference

2.1   The PPTAP is tasked to:

- Develop a coherent, strategic and holistic approach to planning of particle physics and the associated accelerator R&D activities within the European context
- Consult and interact with the wider community (university groups and NLD departments) to ensure its views are canvassed and there is an appropriate and effective route for communication with STFC
- Work to establish the need for UK particle physics and associated accelerator R&D activities, in the context of the overall PP projects roadmap, as well as the current level of expertise and relevant activity within the UK,
- Maintain an overview of the ECFA and ELDG road mapping activities, and participate in road mapping expert panels
- Liaise with other advisory panels as appropriate.

2.2   The ongoing work of the panel will be reported to Executive Board as required.

2.3 The panel will produce a final report given an overview of the R&D needs of the STFC particle physics roadmap and existing areas of related expertise. This should provide options based on evidence for UK participation in each area explaining their relevance to the European roadmaps, the benefits and risks of engaging/not engaging from both a science and technology perspective, and UK community strengths. In addition, the panel will provide advice or response to specific questions from TAAB.

3 Membership

3.1 The PPTAP should be chaired by a knowledgeable and independent senior member of STFC's communities

3.2 The membership will comprise UK representatives to ECFA and ELDG working groups, plus a small number of other UK stakeholders as appropriate. The UK representatives will be established experts in the relevant fields, drawn from the National Laboratories and university communities

3.3 UK representatives are expected to commit to:

- Engage actively with the European working groups to provide expert input on their field
- Develop a comprehensive understanding of ongoing work, interests and needs in UK particle physics, including work outside STFC where relevant
- Act objectively and in accordance with the developing overall UK position, and not to engage in advocacy for particular areas of work
- Engage actively with the Advisory Panel to ensure that all members of the Advisory Panel are well informed.

3.4 PPTAP should include observers from the computing (HTC and HPC) communities, in order to ensure a coherent future approach across all technology areas.

4 Support

4.1 Programmes Directorate will manage PPTAP and provide support for meetings.