

## **BSBF miniseries: a look into the future of Big Science infrastructures**

On 4-7 October 2022, the top European Big Science research facilities will be meeting together with industry in Granada (Spain) in the [Big Science Business Forum 2022](#) to present their business opportunities for industry in the period 2022-2026. In this congress industry will learn about the Big Science investments in the coming years in different technology areas and benefit from the unique opportunity of networking with key representatives from the Big Science organisations and other stakeholders.

But what will come next? In this webinar series we take a leap to glimpse what the future might bring in terms of new facilities, experiments or upgrades and what challenges lie ahead of us. Representatives from different Big Science facilities will lay out in three episodes their research and development plans and future projects, providing industry a picture of their technology needs and opportunities for collaboration which will drive the Big Science market in the decades to come.

### ***Episode 3: Strategic view, roadmaps and development programmes of high-energy accelerators and synchrotrons research infrastructures***

Particle Physics tries to provide answers to some of mankind's most basic questions nature hides the secrets of the fundamental physical laws in the tiniest nooks of space and time. By developing technologies to probe ever-higher energy and thus smaller distance scales, particle physics has made discoveries that have transformed the scientific understanding of the world. Nevertheless, many of the mysteries about the universe, such as the nature of dark matter, and the preponderance of matter over antimatter, are still to be explored.

The European Strategy for Particle Physics (ESPP) proposes a vision for both the near-term and the long-term future. Considering that strategy the particle physics community should ramp up its R&D effort focused on **advanced accelerator technologies, in particular that for high-field superconducting magnets, including high-temperature superconductors and high-gradient accelerating structures**. Other technologies such as **vacuum and cryogenic** technologies need to be pushed beyond present performance to deal with high intensity, high brightness and high-energy beams.

Europe, together with its international partners, should investigate the technical and financial feasibility of a future hadron collider at CERN with a centre-of-mass energy of at least 100 TeV and with an electron-positron Higgs and electroweak factory as a possible first stage. Such a feasibility study of the colliders and related infrastructure should be established as a global endeavour and be completed on the timescale of the next Strategy update.

In this webinar we take a step ahead and identify the technologies that will drive these and other organisations' future projects, taking a look at their strategies for the future and their research and development programmes, and how industry can get involved.

**Date: 30th November**

**Webinar ZOOM**

**Agenda**

9:30-9:45	<b>Welcome and introduction to speakers</b> Manuel Moreno – Spanish ILO for CERN, ESS, ESRF and XFEL, CDTI, E.P.E.
9:45-10:00	<b>CERN R&amp;D Development Programme and future plans</b> José Miguel Jiménez, , Head of Accelerator Technology Department
10:00–10:15	<b>ESS R&amp;D Development Programme and future plans</b> Mats Lindroos – Head of accelerator technology division
10:15–10:30	<b>ESRF R&amp;D Development Programme and future plans</b> Jean-Claude BIASCI, Head of Technology and R&D Division
10:30-10:45	<b>FAIR R&amp;D Development Programme and future plans</b> FAIR Speaker TBD
10:45-11:00	<b>XFEL – R&amp;D Development Programme and future plans</b> Dr. Thomas Tschentscher, Scientific Director
11:00-11:30	<b>Round table with audience participation</b> Moderated by Anne Hall, Sweden ILO for CERN, ESS, ESRF and XFEL
11:30	<b>Closing of the webinar</b> Manuel Moreno – Spanish ILO for CERN, ESS, ESRF and XFEL, CDTI, E.P.E.