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31 October 2012

MAJOR EVENTS AND EXHIBITIONS PROGRAMME 2012-13: UPDATE

Executive summary

1. This Paper seeks the SPCB's views on an additional major exhibition to the 2012-13 Major Events and Exhibitions Programme as approved at its meeting on Wednesday 21 December 2012.

2. The Science and Technology Facilities Council (STFC) have requested the use of the Main Hall to display their Roadshow exhibition 'Celebrating the UK's activities in the world's largest experiment, CERN's Large Hadron Collider' from Monday 4 until Saturday 9 February 2013.

Discussion

3. The STFC is one of 7 UK research councils. It is operated under Royal Charter as an independent, non-departmental public body of the Department for Business, Innovation and Skills. STFC's remit is to keep the UK at the forefront of international science. It also represents the UK in international collaborations to plan future strategy.

4. The Large Hadron Collider at the European particle physics laboratory CERN, near Geneva, is the world's most powerful particle accelerator. Through the STFC's CERN subscription the UK is one of the biggest investors in the project. The Collider is one of the largest laboratories in the world and lets scientists reproduce the conditions that existed within a billionth of a second after the Big Bang.

5. The Roadshow, which launched on 12 March 2012, has already toured successfully to a number of venues including Westminster (3 to 6 September). Two further venues before the Scottish Parliament at the National Assembly for Wales (27 November to 2 December 2012) and University of Reading (2 to 5 January 2013), are confirmed. The Northern Ireland Assembly has also been approached to host the Roadshow.

6. The target audiences for the exhibition are MSPs, policy makers, local primary and secondary schools and members of the public visiting Parliament. The aims to communicate to visitors the scale and complexity of the experiments at The Large Hadron Collider, including the discovery announced in July this year of a new particle, other resulting discoveries, spin-off technologies and benefits for the UK, and what they mean for the future.

7. It aims to give visitors a hands on experience of what it is like to work on the largest ever experiment in the world by walking through a life sized replica of the tunnel, which is out of bounds to the general public and located 100 metres beneath ground in Switzerland. It also presents an opportunity for visitors to meet some of the scientists and engineers who

work on the experiment, especially those based at Scottish universities and institutions. The exhibition also seeks to demonstrate how the £80m of UK taxpayers money invested in the experiment has been used.

8. The Roadshow consists of interactive exhibits, science images and a 6 metre model of a section of the Large Hadron Collider tunnel. Further information is attached at **Annex A**.

9. There have been three parliamentary motions (S4M-03606, S4M-03594 and S4M-02213) relating to the outstanding contribution of Professor Peter Higgs and the discovery of a new particle at the Large Hadron Collider.

Exhibition related activity

10. If approved by the SPCB it is proposed that the Presiding Officers should host an evening event on Wednesday 6 February to which all MSPs and target audiences will be invited. In addition to viewing the exhibition MSPs would also be to express an interest in visiting CERN during 2013.

11. STFC would publicise the exhibition to local primary and secondary schools to encourage them to visit. The Parliament's Outreach Services team would facilitate by providing details of existing school visits taking place over the proposed exhibition duration.

12. STFC have requested access for PhD students from local university particle physics departments to staff the exhibition and deliver exhibition tours. The students' role would be to encourage visitors to use the exhibition interactives, explain the UK's involvement with the CERN experiment and its benefits to everyday life and the UK economy. Tours would need to be scheduled in liaison with Visitor Services around existing Parliamentary tours and use of the Main Hall during business days.

Media activity

13. This exhibition is likely to secure good media coverage and the Scottish Parliament would be name checked as the host venue. A preview piece highlighting the exhibition could be sought and a media launch opportunity could be organised for Monday 4 February, hosted by the Presiding Officers on behalf of the Scottish Parliament, possibly involving Professor Peter Higgs if available and the STFC.

14. Additional Parliament-related coverage could be generated should a committee decide to take evidence on science or the funding of science, or support a Chamber debate on science. Such activities would allow MRO to weave greater Parliamentary context into any coverage generated.

Resource Implications

15. All costs associated with this exhibition including install, derig, publicity etc will be met by STFC.

16. Staff resources to support this exhibition would be minimum. The Events and Exhibitions Team would work with STFC to facilitate the necessary planning for the exhibition with support from Security and Facilities Management. Media Relations Office would work with STFC to facilitate publicity of the exhibition.

Governance issues

17. An Equality Impact Assessment has been carried out on the design of the exhibition. There are no Health and Safety or Equalities issues.

18. As with all partner exhibitions, the SPCB would be required to enter into an exhibition agreement with STFC to cover public liability, employers' liability, H&S, insurance, copyright and publicity considerations.

Publication Scheme

19. This Paper can be published once the exhibition has been publicly announced.

Next steps

20. If approved, the Events and Exhibitions Team will work with the STFC and colleagues across the Parliament to facilitate the necessary planning and organisation of the exhibition, evening event and exhibition tours for schools and the public.

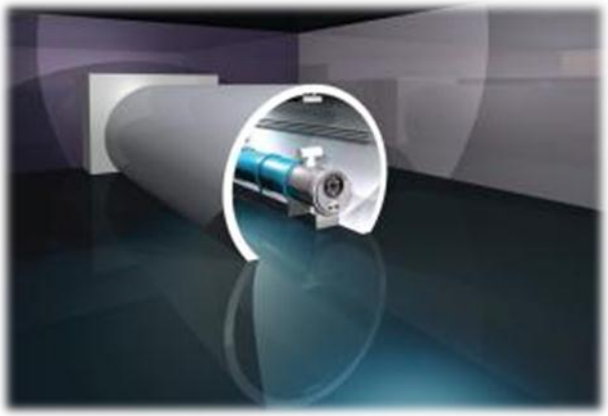
Decision

21. The SPCB is asked to consider this paper and to agree that the exhibition is added to the Major Events and Exhibition Programme for 2012-13.

EVENTS AND EXHIBITIONS TEAM
October 2012

ANNEX A

A **mock-up of the Large Hadron Collider** tunnel at CERN.



This 6m long x 3.8m wide 'walk through' exhibit will demonstrate the size of the LHC and the cavern itself. On the external walls will be a number of WOW facts relating the science back to everyday life.

Freestanding displays focusing on:

- *'What is the LHC?'* –highlighting the inspirational international endeavour that pushes technology to its limits in order to advance science
- *Spin-out'* – highlighting the number of spin-off technologies developed as a result of preparing for the LHC and the many new applications identified
- *Innovation'* - Particle accelerators, like those at the heart of the LHC, are now being adopted for cancer therapies using protons

Freestanding light box displays focusing on:

- *'Engineering'* –highlighting the scale of the engineering project including the excavation of the tunnel, collaborations involving more than 10,000 scientists and engineers from over 100 countries, hardware and how UK Universities helped build the highly sensitive detectors at the heart of the LHC's experiments
- *'Inspiration'* – highlighting the positive rise in the popularity of Particle Physics, how Physics graduates are highly valued throughout the UK economy
- *'Industrial'* – highlighting how the UK's membership of CERN enables British companies to bid for lucrative high-tech contracts benefiting both the economy and the UK's science base.

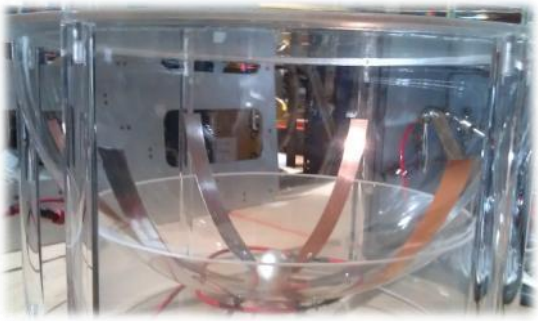
Cosmic Ray Detector Exhibit

- Demonstrating how cosmic rays from outer space were the first high energy particles ever studied, giving a tantalizing glimpse of the subatomic world before accelerators were invented

An Old-School Television, or a **simple particle accelerator** interactive exhibit

- A simple demonstration of how a particle accelerator works by relating it to how the picture on an old television is formed when a beam of electrons is fired at the screen through a Cathode Ray Tube (CRT)

Particle Accelerator interactive Exhibit



- A simple demonstration how a particle accelerator works this model uses electric fields to accelerate the particles. This demonstrates how the Large Hadron Collider steers a beam of particles around the synchrotron by large magnets, in order to increase their speed and energy.

Dual 42inch LCD display Unit

- 10 minute guide to the LHC?

  CERN video featuring Tara Shields , looped with subtitles

- Live LHC data possible stream of live data from CERN via laptop

Popular publications

- A Tunnel to the beginning of Time - A spectacular full-colour A1 poster showing a view through the middle of the ATLAS detector and looking down the centre of the Large Hadron Collider tunnel
- Big Questions, Big Experiment: The Large Hadron Collider - A full-colour A5 leaflet that opens out into an A2 double-sided wall chart describing the Large Hadron Collider
- The Little Book of the Big Bang - A cartoon booklet that introduces particle physics, particle accelerators and the Large Hadron Collider
- Cosmic Rays - A colour A5 leaflet that opens out into an A2 double-sided wall chart describing Cosmic Rays and where they come from, what effect they have on us and how they are used in scientific applications