

Big Science: Technology Challenges and Business Opportunities

Programme Technology Workshop 28th of September 2016

Cross Border Science and Society

Setting: In combination with industry mini-exhibition and poster session.

Round table discussions around challenging technology areas. Creative session between companies, facilities, and academia.

08.30 Registration and coffee

09.00 Welcome and purpose of the day John Weisend, Deputy Head of Accelerator Division at ESS

09.15 Agenda and practicalities IUC Syd/Big Science

09.30 Breaking Barriers in Accelerator Technology –
The Challenge of Running Accelerators and Synchrotrons STFC. Focus on maintenance and production of bespoke components.

10.00 Building a position: Energy efficiency and cost savings in Cryogenic Helium Systems Sven Persson, CEO Airec

10.15 Volume Growth in the Big Science market Frank Ebskamp, CEO Danfysik

10.30 Coffee - Poster Session and Mini Exhibition

11.00 Public Procurement for the Big Science market Procurement officers at ESS and Max IV

11.20-11.40 Challenges in Sample Environment Arno Hiess, Head of Scientific Activities Division, ESS

11.40-12.00 Sample Environment – Material challenges Anders Bjermo, Head of Mechanical Design at Max IV

12.00-12.20 Precision movement SKS Sweden/Ångström Laboratory

12.20-13.10 Lunch - Poster Session and Mini Exhibition

13.10 Precision Engineering and Rapid Delivery Requirements for a Local Machine Shop -

Critical production skills for Big Science suppliers ESS/STFC

13.40-14.20 3D Printing Cern/STFC

14.20-14.30 3D Printing Hans Kimblad, Digital Metal/Höganäs AB

14.30-14.40 3D Printing Pär Nobring, CEO R.A.P.S

14.40-15.00 Control systems and electronics

Henrik Carling, Head of Integrated Control
System division

15.00-15.05 Introduction to workshop

15.05-15.20 Coffee

15.20-16.00 Workshop/ Round table discussions around seven different topics. Each participant selects one topic.

1. Precision Engineering and production

Discussion about the production of medium to large quantities of scientific and technical components for ESS, MAX IV and other research facilities. Customized design, not off-the-shelf products.

2. Precision Movement and Alignment

Actuators and systems for moving, aligning and measuring position of samples and equipment.

3. Sample environment

Systems and equipment for providing thermal, vacuum, magnetic and other physical environment for neutron science samples.

4. Rapid support

Provision of off-site capabilities for machining, welding and construction of small numbers of items with short delivery time.

5. Control and electronics

Provision of control system and electronics for Max IV and ESS.

6. 3D printing

Potential future applications for 3D printing in support of Max IV and ESS.

7. Technical Consumables and procurement procedures

Provision of Chemicals, Air products, Mechanical components and other off-the-shelf items. Involving procurement officers at ESS and Max IV.

16.00 Summary of workshop results and next steps

IUC Syd/Big Science

16.15 Study tour to ISIS and Diamond Light Source

IUC Syd/Big Science

28th to 30th of November 2016.

16.30-17.00 Poster Session and Mini Exhibition