

Big Science: Technology Challenges and Business Opportunities

Programme Technology Workshop 28th of September 2016

Cross Border Science and Society

Seminar – Industry Exhibition – Poster session – Round Table Discussions

Welcome to an interactive day where industry, research facilities and academia meet to network and discuss common technology challenges. We will focus on: Precision Engineering and production, Precision Movement and Alignment, Sample environment, Rapid support, Control and electronics, 3D printing, Technical Consumables and procurement procedures.

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 Challenges of Building, Commissioning and Running Particle Accelerators

Phil Atkinson and Andy Goulden (STFC*)

10.00 Building a position: Energy efficiency and cost savings in Cryogenic Helium Systems

Airec, CEO Sven Persson

10.15 Volume Growth in the Big Science market

Danfysik, CEO Frank Ebskamp

10.30 Coffee - Poster Session and Mini Exhibition

11.00 Public Procurement for the Big Science market

Procurement Managers: Mirko Menninga, ESS and Johan Alexon, 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 Bjeremo, Head of Mechanical Design at Max IV

12.00-12.20 Precision movement

SKS Sweden, Johan Bergqvist/Ångström Laboratory

12.20 Lunch - Poster Session and Mini Exhibition

STFC*) The facilities in UK, ISIS and Diamond Light Source, are represented by STFC - Science and Technology Facilities Council

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

Critical production skills for Big Science suppliers	ESS
13.40-14.10 3D Printing - Advanced Manufacturing for Large Facilities	STFC, Mike Curtis-Rouse, Science and Technology Facilities Council
14.10-14.25 3D Printing	Hans Kimblad, Digital Metal/Höganäs AB
14.25-14.40 3D Printing	R.A.P.S, CEO Pär Nobring
14.40-15.00 Control Systems and Electronics	Henrik Carling, Head of Integrated Control Systems 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 numbers of components or scientific and technical equipment for ESS. 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