

## **ISIS User Committee**

Friday 9 June 2017, 10:00  
The Cosener's House  
Abingdon, The Garden Room

### **Present:**

Emma McCabe (Kent)	IUG1 Crystallography
Peter Slater (Birmingham)	
Emma Barney (Nottingham, Chair)	IUG2 Disordered Materials
Paul Bingham (Sheffield Hallam)	
Tim Knowles (Birmingham)	IUG3 Large Scale Structures
Aiden Hindmarch (Durham)	
Kelly Morrison (Loughborough)	IUG4 Excitations
Christoph Salzmann (UCL)	IUG5 Molecular Spectroscopy
Roberto Senesi (Rome)	
Martin Lees (Warwick)	IUG6 Muons
Hongbiao Dong (Leicester)	IUG7 Engineering

### **Present from ISIS:**

Robert McGreevy	ISIS Director
Zoe Bowden	Head, ISIS Operations
Philip King	Head, ISIS Spectroscopy and Support Division
Sean Langridge	Head, ISIS Diffraction Division
Steve Wakefield	Head, ISIS Experiment Operations Division
Andrew Kaye	ISIS User Programme Manager
Matt North	Minutes

### **In Attendance:**

Emily Swaine	STFC
Steve Pitt	BaxterStorey, Executive Head Chef for STFC
Nick Argondellis	BaxterStorey, Accommodation mobilisation

(Nick and Steve were present only for the catering & accommodation discussion)

### **Apologies:**

Nicola Morley	Sheffield, IUG6
Catrin Davies	Imperial, IUG7
Debbie Greenfield	Head, ISIS Instrumentation Division

## 1. Welcome & Introductions

The chair formally opened the IUC meeting and participants introduced themselves.

## 2. Minutes and actions outstanding

The IUC accepted the December 2016 Minutes as a true record.

Update on December 2016 ISIS User Committee Actions:

- 1. *AK to continue to implement online user satisfaction form.***  
Complete. A Google form is now available on web. Notices provided to users in cabins and by direct email, and the questionnaire will be sent to all visiting users following each proposal round.
- 2. *AK to explore TS2 user fridge.***  
Complete. New fridge located in TS2 Café Zoom.
- 3. *PK to consider ChipIR user rep.***  
ChipIR is currently in commissioning phase. Representative will be considered when instrument is in the experimental programme.
- 4. *AK to consider short Xpress reports and how these can be captured.***  
Ongoing. ISIS hopes to provide an online reporting mechanism in the near future.
- 5. *PK to consider mechanism for feedback to users following experiment report comments.***  
Complete. IUC discussed and concluded that a general response to users providing feedback should be given noting that their feedback has been distributed to ISIS management team and IUC. A more detailed 6 month periodic report providing a user satisfaction summary should also be published.
- 6. *IUC members to think about a mechanism to filter experiment report comments for ISIS feedback.***  
See response to Action 5.
- 7. *PK to forward experiment report comments to DG.***  
Complete.
- 8. *SL to oversee distribution of draft scientific computing document to the community.***  
Baseline requirements have been captured. Strategy linked to Ada Lovelace Centre which is not currently funded.
- 9. *PK to ask about ISIS taking sandwich students in engineering areas.***  
Complete. PK discussed idea with Matt Fletcher (Head, ISIS Design Division) who agreed in principle and will consider recruitment in the next summer student intake. RMG noted that sandwich studentships are a not a long term fix to current engineering resource issues.
- 10. *SW to provide a timeline for the GEM upgrade to the IUC.***  
Complete. GEM upgrade planned for late 2017 / early 2018.

- 11. *Muon user group to provide PK with a list of photo excitation related papers.***  
Complete. There have been papers published in this field, including a Nature publication.
- 12. *PK, SW to provide a list of current and recent instrument and SE developments to the next IUC meeting.***  
Complete. See IUC\_June2017\_Projects.pdf. PK & SW welcome feedback.
- 13. *PK to publish annually, a description of successful studentships.***  
Complete. See minutes in Section 8.

### **3. User Group Reports**

User group representatives had received comments from ISIS experimental reports and user satisfaction surveys submitted by the community over the past six months.

#### **3.1. Crystallography – Emma McCabe**

User group meetings continue to be very successful. Next user meeting planned for November 6<sup>th</sup> & 7<sup>th</sup> 2017.

There is a high level of satisfaction from users regarding capabilities of the instrument suite and the quality of scientific and technical support. The community are very pleased with GEM upgrade project and very supportive for HRPD to follow. Beam reliability an issue for some users.

Out of hours food provision is a problem for users. Ridgeway House is a poor location in comparison to the R22 restaurant for evening meals and the lack of vending provision over the weekend is a common complaint.

#### **3.2. Disordered Materials – Paul Bingham**

Users are extremely satisfied with the exemplary support provided by scientific and technical staff. Proposal numbers are down due to a variety of reasons which are being discussed. The community highlight the importance of GEM and welcome the upgrade project.

#### **3.3. Large Scale Structures – Tim Knowles**

There are a lot of satisfied customers within the user community. Support from scientific and technical staff is overwhelmingly seen as very good.

There is general excitement from the community regarding ZOOM entering the science programme, particularly looking forwards to the possibility of neutron focussing capabilities in the future.

Eduroam access on the RAL site is an issue for users. STFC has started a project to upgrade wireless infrastructure.

Submission of Experimental Risk Assessments (ERAs) has been causing problems. SW noted that there had been issues with the ERA system which we believe have now been dealt with.

### **3.4. Excitations – Kelly Morrison**

User group is very satisfied with the level of scientific and technical support, especially out of hours.

The persistent MAPS flux loss was an issue but this has now been resolved. Beam reliability has been an issue for some experiments.

It should be noted that the MERLIN radial collimator upgrade is important to reduce signal to noise for future experiments.

### **3.5. Molecular Spectroscopy – Christoph Salzmann**

User group is satisfied with the support provided by ISIS staff.

User group meetings are organised at 18 month periods, the next due early 2019, and a technical report from the previous user group science meeting is available via ePubs. The 'Good vibrations' user group newsletter continues to be distributed with 3 publications per year reaching *circa* 500 recipients. A meeting is scheduled in the future regarding electron volt spectroscopy techniques.

A provision of computers in the R55 DAC would be beneficial for users. Easier remote access to JournalViewer is desirable.

The User Group would like to see further development of Sample Environment capabilities, in particular with respect to gas handling. Post TOSCA upgrade the preparation time associated with gas handling experiments can be longer than the experiment itself. Controlled humidity chamber was also noted as a future Sample Environment need.

### **3.6. Muons – Martin Lees**

The user group is very happy with the recent upgrade to the muon beamlines and support the initial work towards SuperMuSR. The user group is very happy with the level of support provided by scientific and technical staff.

A shift from scheduling cryogenic experiments starting on a Monday to the weekend would be preferable, enabling the equipment to be prepared and cooled in readiness for a Monday start when there are more support staff available. SW noted that there are currently limited cryogenic support resources. How the resource is applied is currently under review; the user group's comments will be included.

**ACTION: SW to review weekend cryogenic support options for Muon experiments.**

The user group noted the popularity of elemental analysis using muons, and the status of the RIKEN-RAL Muon Facility was discussed. In March 2018 ISIS will take over the operation of RIKEN ports under a new contract, and this is likely to provide more flexibility for UK experiments.

The user group requested an update on available laser facilities. PK noted that the HiFi laser facility is operated under a grant by Alan Drew from Queen Mary University of London. RIKEN Port 2 also has laser capabilities, but staff with laser expertise is a limit to operations.

**ACTION: PK to ensure laser capabilities on the muon instruments are publicised on the ISIS website.**

Minor MANTiD issues were reported. ISIS advice is to feedback MANTiD issues immediately to the MANTiD support team.

### **3.7. Engineering – Hongbiao Dong**

The first Engineering User Group Meeting was held on the 8<sup>th</sup> & 9<sup>th</sup> of January. The meeting was well attended and included 20 talks as well as updates on IMAT development, the ISIS Stress Engineering Centre and the potential for a new engineering instrument.

The user group is happy with the quality of technical and scientific support at ISIS.

The user group would like to know if there will be further training schools for CDT students at Diamond and ISIS? PK noted the feedback from the 2016 school highlighted that the teaching programme was too broad and not useful for all students. More detailed feedback is required before a future CDT school would be programmed.

**ACTION: Engineering user group to feedback recommendations and suggestions for the CDT training school.**

## **4. Catering & Accommodation**

The catering and accommodation contract with the new provider has been in place since June. The following issues were discussed with Steve Pitt (SP), Group Executive Chef for STFC and Nik Argondellis (NA), Accommodation Manager.

### **Ridgeway Catering**

Breakfast and dinner at Ridgeway House is less than ideal. The quality of the breakfast, which was a highlight, has declined. The quality and choice of the vegetarian meals were poor. SP agreed that provision has been poor, and steps taken to improve this.

Ridgeway House is seen as a poor location for evening meals in comparison to the R22 restaurant. SP noted that BaxterStorey are currently reviewing a proposal to bring the dinner service back to the R22 restaurant.

### **Vending Machines**

The reliability of vending machines and the variety of available food is a major concern for users.

SP noted vending machine support should now be better, and a wider range of food is being looked at. Pre-booking of meals for evening / weekends is being looked at, as is the possibility of a weekend service through the R1 coffee lounge.

Coffee machines in the target stations are unreliable. SP noted that a new maintenance contract has been put in place, but with Mon-Fri provision, so weekends will need to be looked at. Provision of supplies for users to make their own coffee should be looked at for when machines are out of order.

### **Dietary Requirements**

There was discussion of provision for users with dietary requirements. Users should let the User Office know if they have dietary requirements so that the caterers can be informed. A note will be added to the User Office webpages regarding dietary requirements and food allergies.

**ACTION AK: Add dietary requirements and food allergy notice to user office webpage.**

### **Ridgeway Accommodation**

Users have noted that the quality of rooms at Ridgeway House varies substantially between rooms and that there are times when room cleanliness is an issue. A common complaint was regarding a lack of soap provided in the rooms.

NA apologised for the issues. The lack of soap was due to a temporary supply issue that affected sourcing and delivery of soap to the premises on two occasions. On-site stock has been replenished and the supply issues have been solved.

## **5. ISIS Update – Robert McGreevy**

### **ISIS Scientific Output**

The number of proposals, year on year, is pretty much stable. Instrument publications are gradually going up per year. We expect scheduled days for industrial use to increase in the future as IMAT and ChipIr come online.

## **ISIS Operations – Study by Red Scientific**

Red Scientific have been employed to look at ISIS' operations and where best to apply resource. Initially they have concentrated on scientific resource. A summary of the report is expected to be distributed for the next IUC meeting.

**ACTION: RM to publish Red Scientific summary prior to next IUC.**

## **Facility Developments**

The build of the Harwell Facilities Building, providing much needed space for radioactive waste handling and future large projects including the TS1 Project, Linac Tank 4 replacement and ESS Instruments, is progressing well.

Guides are being installed on Mari and Maps during this shutdown, with both instruments returning to the use programme early next year, and the GEM refurbishment is due to take place over the Christmas shutdown and cycles either side of this.

The project to refurbish the ISIS first target station is progressing, and there is likely to be a 1-year shutdown 2020 – 2021 for the work to take place. Depending on the time needed to replace and commission Tank 4 of the ISIS linear accelerator, TS2 may operate for some of the shutdown period.

ISIS-2 feasibility project underway, to specify a next-generation facility. Options are to be reported on at the next IUC meeting.

**ACTION: RMG to report on ISIS-2 feasibility options at next IUC.**

The proposed ISIS Stress Engineering Centre (ISEC) will provide a unique facility combining neutron and non-neutron stress measurements. An industry day is planned for the 26<sup>th</sup> September 2017 (now postponed to early 2018).

## **European Spallation Source (ESS)**

The UK has committed €184.3M to the ESS project. ISIS will be delivering LOKI & FREIA, SANS and reflectometry instruments, & working with Italy to produce the VESPA spectrometer (a new agreement has been put in place with Italy to deliver the VESPA spectrometer). In addition ISIS is working with the ESS on MANTID, neutron detector development and support laboratory design.

## **International Collaborations**

The agreement governing the RIKEN-RAL Muon Facility ends in Spring 2018, and ISIS and RIKEN are currently in discussion regarding future agreements.

The ISIS Newton Programme, providing support for Chinese and Indian researchers, is working well. A new agreement, providing funds for ISIS instrumentation, has been signed with India and ISIS is working closely with China as the Chinese Spallation Neutron Source starts commissioning.

## **Research Councils Governance**

UKRI will be in place from 1<sup>st</sup> April 2018, and will be the new legal entity incorporating the seven research councils, HEFCE and Innovate UK. STFC will still exist as an organisation, and ISIS Users should not see any changes.

## **UK Neutron Strategy**

STFC has commissioned the development of a neutron strategy for the UK. An advisory panel has met and submitted their report which is currently being considered.

## **6. Instrument Projects**

A summary was provided of current and future instrument projects.

Currently TS2 Phase-II instrument builds are nearing completion: Larmor is part of the user programme; ChipIr and IMAT are in commissioning; Zoom has just opened its shutter for the first time.

Recent and ongoing large projects include guides for Tosca, Maps, Mari; refurbishment of the muon beamlines; LET completion; GEM refurbishment and others. A large number of smaller instrument and sample environment projects are also being undertaken.

A variety of possible future large instrument projects (new instruments or significant refurbishments) have been identified and compiled together, and ISIS will seek funding for these as opportunities arise.

The committee discussed options on how best to communicate instrument upgrade information. A variety of methods, including, user office webpages, twitter, user community newsletters, etc, were all noted.

## **7. ISIS Operations Update – Steve Wakefield**

Source availability during cycles 16/4 and 16/5 averaged around 84%, lower than for other recent cycles.

The loss of flux on MAPS was solved by changing the shutter. The precise cause is unknown, but there is currently no reason to think that other instruments might be affected by similar faults.

There is a contract agreed to replace obsolete cryogenic equipment for Muon instruments over a two year delivery period; the existing fleet of Orange Cryostats are undergoing a staged refurbishment programme; ULT gas handling systems are starting to be replaced.



The price of liquid Helium has increased a factor 5 in the last decade. ISIS now collects He gas, and is now able to liquefy this. In May 3000 litres of Helium were liquefied over a 3 week period.

The number of proposals to the support labs have increased, partly due to increased deuteration capabilities. The R55 bio lab refurbishment has been completed and the lab has been recommissioned. A new XRD and Squid have been added to the Materials Characterisation Lab. New mass spec & microwave reactors have been added to the support labs.

## **8. ISIS Studentships Update – Philip King**

ISIS co-funds studentships which have a facility development component to them. Over the past 3 years, 14, 13 & 6 studentships have been funded respectively. Another call will be made this year for circa. 6 studentships, with links to Diamond being particularly welcome.

The user groups asked if there could be further guidance from ISIS on studentship proposals to increase probability of funding success. Specifically can there be more detail provided in the calls and/or themes for proposals to be provided? The user groups noted that information on the type and scale of projects that make a good proposal would be beneficial.

Concern was expressed that engineering-related proposals may not fare as well as others, but it was noted that proposals with industrial links are particularly welcome.

**ACTION PK: Provide more detail on studentship project types to studentship update.**

## **8. AoB & Date of Next Meeting – Emma Barney**

PK noted that NMSUM is scheduled for the 27<sup>th</sup> to 29<sup>th</sup> of June at Warwick. There are currently a total of 268 registrants and a 100 registered students for the student day. Registration closes on Monday the 12<sup>th</sup> June.

Next IUC Meeting – 8<sup>th</sup> of December 2017.

## **IUC June 2017 Actions**

- 1. AK to consider short Xpress reports and how these can be captured.**
- 2. PK to coordinate user satisfaction feedback reports.**
- 3. ACTION: SW to review weekend cryogenic support options for Muon experiments.**

- 4. ACTION: PK to ensure laser capabilities on the muon instruments are publicised on the ISIS website.**
- 5. ACTION: Engineering user group to feedback recommendations and suggestions for the CDT training school.**
- 6. ACTION AK: Add dietary requirements and food allergy notice to user office webpage.**
- 7. ACTION: RM to publish Red Scientific summary prior to next IUC.**
- 8. ACTION: RMG to report on ISIS-2 feasibility options at next IUC.**
- 9. ACTION PK: Provide more detail on studentship project types to studentship update.**