FETS Meeting:

RAL, R3, CR11 – 18th December 2013

Present: J. Pozimski, A. Letchford, P. Savage, M. Dudman, S. Lawrie, S. Gibson, D. Faircloth, M. Clarke-Gayther, S. Alsari, C. Gabor J. Back, S. Jolly, M. Aslaninejad, A. Kurup

Apologies: G. Boorman, K. Kruchinin, A. Bosco, C. Plostinar, P. Posocco.

Circulation: All

Next meeting date: 19th January 2014 – RAL

Administration

1. The date of the next OSC meeting is the 10th June 2014

Ion Source and LEBT (S. Lawrie / D. Faircloth)

1. Ion source is running, doing transport and post acceleration measurements, expected to have some results to present at the next meeting.
2. Long lifetime tests (24 Hours), paper work and safety tests required. It is expected that ISIS crew will monitor these tests.
3. C. Gabor informed the group that the post acceleration gap and current levels are being investigated. Steps are being retraced to understand the changes in geometries. Initial tests have shown an understanding of alignment issues and A. Hooper has been consulted on design of more robust alignment pins.
4. D. Faircloth has been looking into the installation of a remote re-set in case of control systems crashing. It is unknown why this occurs, thoughts include issues with earth.
5. The door on the R8 exit door near the bottle store is being left open and has started jamming due to it being slammed shut. A quote for card swipe entry should be obtained. The swipe entry on the side door of R8 has not been reinstalled and should be investigated.

Beam Diagnostics

Laser (S. Gibson)

1. S. Gibson has returned from CERN where unfortunately the fibre burnt and had to be replaced, only to be burnt again. This was due to a software crash sending the laser into high duty.
2. A. Bosco is still at CERN carrying out tests hoping to get some results.
3. A diamond detector is now on line.
4. Laser should still be on schedule to be returned in March 2014.

BPM (S. Lawrie)

1. Button BPM design is progressing with assembly hoped for the end of January.

2. A pendulum wire will be used to test for quantative results.
3. G. Boorman is implementing the electronics for the BPM.
4. M. Perkins is progressing the toroid amplifiers.

BPM (S. Jolly)

1. Experimental CERN strip line BPM has been received by S. Jolly under a loan agreement not the MOU. It will be unwrapped and tested.
2. J. Pozimski suggested testing all BPMS together, originally planned for end of June, at the end of 2014. However if the test rig is manufactured earlier tests should be brought forward.
3. S. Lawrie asked M. Dudman if he could get drawings of the BPM detailed.
4. S. Jolly gave a presentation showing the progression of the BPM test frame. He asked if components could be machined at RAL or put through RAL OM as RHUL workshop is very busy. The electronics board is being populated in Oxford then sent to RHUL for hooking up to BPM. This should be brought forward if possible. The alignment of the BPM's in the MEBT need to be thought of.

RFQ (P. Savage)

1. Positional measurements of the vane tips in assembled state are being done. There is a possible machining error in vane tip modulations in each individual section.
2. NAB think they may have found a reason error is occurring, a compensation in the machines controlling system being turned off causing error during machining.
3. If verified by RAL inspection, it is possible the RFQ will need to be returned to NAB for re-machining.
4. It was discussed if a bead pull test would be beneficial prior to the RFQ being returned. It should be done if it can be completed in a short time.
5. P. Savage will give an update via email after a Visit to RAL on the 30th January 2014.

RF Amplifiers (S.Alsari)

1. The order needs to be completed before the amplifiers can be built. The company are manufacturing the amplifiers and have indicated they will be ready for shipment by the end of February2014. However delivery will not occur until order is confirmed.

RF (S.Alsari)

1. Verification of the coaxial configuration has been given to MEGA. The gap between coaxial and coupler will need to be specified and ordered from MEGA.
2. A question was raised how the chopper will phase to the RF. It was suggested the chopper be phased locked to the BPM's signal.
3. Low level RF is an issue and needs to be discussed in the next few months.
4. It has been agreed that ESS will loan FETS a second dummy load. A. Letchford will forward an email from ESS to M. Dudman so he can arrange transport.

Shielding (M. Dudman)

1. Extra blocks are being detailed ready for quote.
2. P. Wright will need to sign off shielding design prior to purchase of blocks.
3. Next meeting with P. Wright to be arranged.

RF Coupler

1. The coupler design is progressing. M. Dudman to confirm with A. Letchford the purchase of some Q200.5 for the manufacture of the window.

MEBT

1. M. Aslaninejad gave a presentation to the group outlining his findings.
2. >99% transmission and >99% extinction achieved.
3. Lattice is now finalised.
4. With all design constraints considered, 100% extinction is not possible in the first chopper.
5. Aperture and length are only variables left with the chopper design.
6. Opposite polarity and downward shift in second chopper appears to be an advantage.
7. A. Letchford noted that if the chopper pulse spec was set at 500 micro seconds it would aid the design of the beam dump and be realistic. Defining beam power would also make it easier to spec electronics and simplify things.

Organisation

8. Funding finishes in March 2015, an extension of funding for one year has been requested. The deadline for submitting funding request for one more year is August 2014.
9. Thought should be given to where FETS will be and what will it need.
10. Potential to loose colleagues, P. Savage and M. C. Gayther, from FETS in the coming months which will impact on FETS and the remaining tasks. It was thought that S. Alsari could work on the chopper electronics but the progression of the mechanical side is unclear. M. C. Gayther may carry on working on a part time basis.
11. Where does FETS sit in the accelerator alliance?
12. Recruitment at RAL is difficult at the moment incurring lots of paperwork.
13. People were asked to think of applications for FETS. Options include a training facility, neutron force, whilst maintaining its R and D status and target work with dump.

Actions:

1. D. Faircloth to presents ION source test results at the next meeting.
2. S. Jolly to test the CERN BPM.
3. M. Dudman to look at getting quote to fix, upgrade R8 Bottle rack and side door.
4. M. Dudman to get quote for RHUL BPM test rig components.

5. M. Dudman to get S. Lawrie's BPM drawings detailed and put into team centre.
6. M. Dudman to arrange transport of ESS dummy load.
7. P. Savage to looking in RFQ machining errors and arrange re-assembly for bead pull test.