

## **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, A. Bosco, C. Plostinar, P. Posocco.

**Apologies:** G. Boorman, S. Jolly, J. Back, C. Gabor, K. Kruchinin, M. Aslaninejad

**Circulation:** All

Next meeting date: 22<sup>th</sup> January 2014 – Imperial

#### Administration

1. As a result of the OsC committee meeting it was found that FETS had no technical issues but needed to concentrate on project management. A Gantt chart will need to be generated, resource effort looked at and work package managers identified.
2. Conferences in 2014 were discussed including IBIC, LINAC and NIBS.

#### MOU

1. ISIS has not yet signed the MOU as it has to be someone from the legal department or a director.
2. S. Gibson had some questions regarding RHUL signing the MOU as he feels that RHUL is in a position to sign and obtain agreement number. J. Pozimski offered to go with him to speak to personnel at RAL.

#### Finances

1. Possible extra funding from ISIS was turned down, with the reason giving as no more funding available for ASTEC.
2. Shielding blocks could possibly be subsidised by ISIS.
3. S. Lawrie suggested splitting the order for the quads and offsetting it over two financial years. He has encountered issues with the order as procurement informed him one supplier should be used over another even though this may not be the best choice. In this case PPM missed the deadline and ETPS was cheaper compared to Glassman. A decision was made to place order with ETPS.
4. Some spending could be brought forward to add scope.
5. To date the MEBT cooling and pipework is not accounted for.

#### Minutes

1. None

#### AOB

1. None

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

1. Extractor is fixed but post acceleration gap has increased resulting in less current. The gap will be reduced.
2. A question was raised about the recording of changes made on the ion source. C. Gabor has a record of changes made, but it was suggested that this information be made available to everyone. This highlighted the importance of letting everyone know when changes are made and then recording them where everyone can locate them.
3. M. Dudman suggested that it may be possible to look into getting drawings updated and stored on the system at ISIS.
4. There was a discussion on the 'success' of the Ion source in terms of the OsC. It was thought that goals should not be set too tightly as FETS is a test stand and it could affect future funding. S. Lawrie and D. Faircloth were asked to write a paragraph defining success and outlining goals to the end of 2015.
5. Everyone was asked to consider their own goals / success as the science programme office will need to be given a reason to continue funding.
6. A meeting in January organised by J. Pozimski will invite an external person for advice / opinion.

### RF / Shielding (M. Dudman)

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

### RF Amplifiers

1. Amplifier order was being generated. The company is waiting for the purchase order from ISIS.
2. MEGA, the RF component supplier, have asked for confirmation of male / female connection location on ordered components.
3. The low level control system details should be thought of in connection with the chopper.
4. The RF coupler design progress was shown and discussed.

### Beam Diagnostic

1. Button BPM in production with estimated January / February 2014 completion.

### BPM (S. Gibson)

1. Drawings have been obtained from CERN and they will ship the strip line BPM to S. Jolly. He will produce a test rig, with possible effort from summer student.
2. The front end electronics have been obtained from CERN for population.
3. CERN have built their electronics but are experiencing problems.
4. J. Pozimski asked S. Gibson to see if S. Jolly will give a presentation with timescales and costs.

### Laser (S. Gibson)

1. Linac four bellows have failed which cancelled the planned visit to CERN. It is estimated they will be replaced early in the New Year. The next visit will hopefully take place week commencing 20<sup>th</sup> January 2014, but this may be subject to change.
2. G. Boorman was at CERN last week installing trigger and confirmed the borrowed PXI crate is working.
3. Question was raised about the bead pull test. At present it is intended to use Imperial Colleges test rig at RAL, either in inspection or clean tent in R8. A procedure to do a full four meter test on the rails needs to be found. RHUL will give an update on the feasibility of this test.
4. Tank 4 is developing a bead pull test at RAL which FETS could gain knowledge from.
5. Simulations from S. Lawrie using P. Savages end flanges should be done.
6. RFQ Section 1 should be used to practice tuning.

### MEBT

#### MEBT Layout (S. Jolly)

1. J. Pozimski informed the group that P. Savage has finalised the lattice with all components placed.
2. M. Aslaninejad to give presentation at the next meeting.
3. Transmission did not change when components were moved by one centimetre.
4. A. Letchford talked about the aluminium dump and the fact that sputtering has been an issue on other beam line.

#### Chopper hardware manufacturing plans (M. C. Gayther)

1. M. C. Gayther gave a presentation showing project helical prototype chopper. He has conceptualised the design in Microsoft studio. The results obtained seem to suggest better results than those published but not necessarily compared to others.
2. There is little or no 'wiggle' room so pulse distortion cannot be tolerated. Planar and helical strip line designs are the only ones that can deliver the spec for FETS.
3. It was proposed to make prototypes for both and test for best option.
4. M. C. Gayther is retiring in the summer of 2014, therefore consideration needs to be given to who will carry on the chopper development. This person should be in place as soon as possible in order to get up to speed with progress so far.

### Cavity (P. Savage)

1. Prototype cavity being machined at Imperial.
2. B. Drumm is continuing his re-buncher design and will be using NITEC for plating after tightening up the specs. FETS should be able to benefit from his experience.

### RFQ (P. Savage)

1. P. Savage gave an update of the RFQ inspection at RAL. It is anticipated that the top major vane will be removed to enable full length vane measurements.

2. Finance has been invoiced from NAB for the machining tasks and it was not sure what this is for. P. Savage said he would investigate this at NAB and inform A. Letchford of the outcome.

**Actions:**

1. M. Dudman to talk to I. Mitchell with reference to creating a Gantt chart for FETS.
2. S. Gibson and J. Pozimski to talk to consult ISIS staff on RHUL MOU agreement.
3. S. Lawrie to progress quad order with ETPS.
4. Thought should be given to cataloguing the changes on the ION source.
5. S. Lawrie and D. Faircloth to write a paragraph defining success and outlining goals to the end of 2015.
6. A. Letchford to arrange next meeting with P. Wright.
7. J. Pozimski to organise a meeting in January and invite an external person for advice / opinion.
8. S. Alsari and M. Dudman to confirm RF configuration for MEGA.
9. RHUL to give an update on the feasibility of a full four meter bead pull test on the rails.
10. Simulations from S. Lawrie using P. Savages end flanges to be completed.
11. Thought must be given to the progress of the chopper design with a view to M. C. Gaythers retirement in the summer of 2014.