FETS Meeting RAL CR6 R2 – 03rd July 2013

Present: J. Pozimski, A. Letchford, M. Dudman, D. Faircloth, S. Lawrie, S. Alsari, S. Gibson, J. Back, G. Boorman, C. Gabor, K. Kruchinin, M. Aslaninejad, M. Clarke-Gayther, C. Plostinar, S. Jolly, A. Bosco, R. D'Arcy, P. Posocco

Apologies: P. Savage,

Circulation: All

Next meeting date: 31st July 2013 Warwick University

Administration

1. The finances and Oracle system were evaluated. It appears that the £40 K invoice for the concrete shielding was not paid. This will be investigated and may mean that it is deducted from this year's budget.
2. Everyone was asked to think about their spending this year.
3. FETS will contribute towards travel for conferences etc but must be verified by J. Pozimski or A. Letchford. Director approval is required for foreign travel, however it is not clear what non STFC staff booking on the FETS project code should do. This should be clarified.
4. FETS and MICE are not on the STFC webpage. C. Plostinar has written some text for FETS that will be added to the website with some pictures.
5. The FETS webpage should be updated. Everyone was asked to look at their relevant section to see if it needs to be revised.
6. The 'security' of R8 was discussed with the subject of card swipe authorisation to both the main door and laser room. Training will be essential for people using FETS and the laser room.
7. EVERYONE visiting / working in R8 is required to obtain a film badge from the main control room ensuring it is worn and returned before leaving site. It was asked if there could be a board, where badges could be left, as they have to be returned on a monthly basis which could encompass more than one visit. This should be investigated.
8. A discussion on the referee's comments on the submitted RFQ paper concluded that they were fair but in parts confusing. Further discussions may be required for the content / format of submitted papers.
9. The future of FETS was raised. There has been interest FETS future including creating a beam facility. Although interest is good, there was personal interest in keeping FETS as an accelerator facility and not operating it as a neutron facility. It was noted that discussions on this and future funding should begin in 2014.

Beam Diagnostic

Toroid (S. Lawrie / P. Savage)

1. Data is to be obtained from testing the toroid's and presented at future meetings.

BPM (R. Darc'y)

1. Off the shelf strip lines may be an option from NTG, or possible manufacture of prototype.
2. Depending on the outcome of the MOU with CERN, tests can be carried out. Without MOU costs cannot be obtained. There is a possibility that tests could be obtained from CERN as long as they were not made public until the MOU is signed.
3. R. D'Arcy's contract is up in October 2013 at which time he will be based at Fermi lab.

DAQ (G. Boorman)

1. G. Boorman asked that everybody give him their specifications for required cables i.e. frequency and power. He and P. Savage are looking at the cabling requirements and the route options into and out of the blockhouse, ensuring there is no interference from one cable to another. These specs need to be as detailed as possible.

Laser (S. Gibson)

1. All components delivered.
2. Four main activities:
    a) Assembly of fibre, 100m completed.
    b) Beam delivery optics and translation stages assembled
    c) Translation stage control software complete
    d) Main enclosure designed and in manufacture.
3. Full power tests will be carried out with optic set up being completed at low power.
4. Further maintenance / repair of laser is required by manufacturer. Either a spare laser will be provided or option persued to buy low powered laser at approximate cost of £700. A spare supplied by manufacturer may not be insured to take to CERN. The turnaround time for repair is 4 to 8 weeks and the repair may not be under warranty. A Bosco will enquire to see if it is covered.
5. The laser is required for test at CERN in October so repair should be completed before this date if free of charge. However it can wait till after tests at CERN if cost involved.

Laser (J. Pozimski)

1. Simulations have continued. Edge focusing is required in the next few months.
2. A quadrupole may be required to enlarge the beam before entering the dumps.
3. Fringe fields need to be considered to ensure the laser interacts with the beam. The field map for the dipole is required to investigate the fringe fields.
4. Further investigations include:
   a) Power distribution on beam dumps
   b) The quadrupole position
   c) Feedback on geometry changes with regard to engineering.

RF (S. Alsari)

1. S. Alsari discussed the options for the four cavity amplifiers comparing both the original and latest schemes.
2. The three options are:
   a) Drive cavity 2,3, or 2,4, or 3,4, original or two cavities from alternative option.
   b) Drive all cavities from alternative scheme.
   c) Drive all cavities from original scheme.
3. Quotes from DB Italy, TOMCO Australia, CPC AMPS USA were shown to compare prices. Approximate costs of £90 K will be significant part of annual budget.
4. A decision should be made in the next two months. Due to high costs order will probably have to go through a tender process which will lengthen order / delivery time.

RF / Shielding (M. Dudman)

1. After showing layout of RF waveguide route there was a discussion on the roof structure and crane access to beam line. There was a question raised if an internal crane would be needed, however this may not be possible due to internal roof height of approx. 2500mm.
2. The RF route has been designed with the components that have already been purchased. More components will be required to complete run so a list will be drawn up of what is required.
3. One of the issues raised was the number of couplers that are required. This will affect the internal route of the RF as it will have to be equally split. The couplers are currently in design / manufacture and initial tests will reveal how many will be required.
4. An initial meeting is planned for the 8th July 2013 with P. Wright to discuss A. Letchford' s radiation / shielding assessment.
5. M. Dudman told the group that it was a possibility that FETS can get T. Pike on board to design the shielding thus keeping it in house, using pre-existing relationships with P. Wright.

MEBT

1. There is meeting in a couple of weeks to discuss the lattice after comparing the two lattices. J. Pozimski to arrange a date around the 18th July 2013 for these discussions.

RFQ (P. Savage)

1. There was no update as P. Savage was not present at the meeting. An update will be given at the next meeting.

Ion Source / LEBT (D. Faircloth)

1. The new cold box is having its edges skimmed in the workshop.
2. The temperature controller is being worked on using off the shelf parts.
3. Plasma test stand components have been ordered.
4. Continued LEBT measurements on FETS. D. Faircloth and C. Gabor reported that the results are not consistent with expected results.
5. Alignment is better but not perfect. Suggests a possible issue with solenoid.

RFQ Injection (S. Jolly)

1. In the previous minutes it was noted that there were some inconsistencies over S. Jolly's results. S. Jolly gave a presentation showing how the results were generated which itself generated a further discussion.
2. Further simulations will be done to confirm results and presented at the next meeting.

Actions:

1. Everybody to look at their potential spend in 2013.
2. Everybody to look at the web page to see if their section is up to date.
3. J. Pozimski to organise a separate MEBT meeting.
4. M. Dudman to look at the options of issuing / returning film badges.
5. A. Bosco to look at warranty of laser to see if repair costs are recoverable.
6. Everybody to give G. Boorman and P. Savage their cabling requirements.