FETS Meeting: 11th February 2015

RAL CR6 R2

Present: A. Letchford, J. Pozimski, M. Dudman, P. Savage, D. Faircloth, S. Alsari, S. Jolly, M. Clarke-Gayther, M. Perkins

Apologies: P. Posocco, G. Boorman, J. Taylor, K. Kruchinin, T. Davenne, S. Gibson, A. Kurup, R. Edgecock, C. Plostinar, S. Lawrie, M. Aslaninejad, J. Back, A. Bosco

Circulation: FETS Webpage

Next meeting date: 11th March 2015 – RAL CR6 R2

Administration

Finances

1. Everyone was asked for their funding requirements on the project. S. Jolly asked for £5K for manufacture and assembly of the CERN strip line BPM. It is thought the VAT valves are paid for but have not been located yet. If they can't be found or thought that they were not brought the costs incurred to purchase will be £3420.
2. It was noted that the chopper vessel costs had been listed twice in the budget spreadsheet. One of these should be removed.
3. Fast chopper costs were estimated at £3k including N type feedthrough's, UT250 coax, liquid feedthrough's, cooling tubes and fittings.

MEBT

Choppers (M .C. Gayther)

1. G. Boorman has been working on the chopper design with M. C. Gayther.
2. Recent equipment tests have highlighted issues with components not functioning correctly. Further inspection revealed wires unconnected, possibly damaged during transit. Repairs have been made.
3. G. Boorman is looking at making the system more compact by swapping older and larger components.
4. M. C. Gayther attended a course in Bilbao and gave an update of the changes to the MEBT.

LLRF

1. The Requirements are being specified.
2. It is estimated the control system for the three cavities will be £10K. Another £5K will be spent on cables, splitters and other components.
3. Two racks will be used to mount the components.
4. A three phase supply will be required to power the racks.

Ion Source (D. Faircloth)

1. The discharge power supplies have been lent to CERN under a loan agreement. D. Faircloth will visit CERN to set up the equipment.
2. The February midterm report is due showing the progress since the last meeting.
3. It was noted that S. Lawrie is on paternity leave for a period of one month.

Beam Diagnostics

1. No update was given

MQP

1. The small quads have been delivered with a field map for each one and 3D of one of the quads. All have been tested prior to shipping no checks are required.

Engineering

1. P. Savage and M. Dudman gave a presentation outlining the engineering components, shielding and ESSO work package. These include:
   - The MEBT support frames - Quote obtained but no funds to progress.
   - Quad supports – In manufacture at Imperial.
   - Chopper beam dump supports – In manufacture at Imperial.
   - Chopper beam dump vessels – Drawings with D. Zakhar.
   - Waveguide support frames - Drawings with D. Zakhar.
   - Waveguide wall support brackets – Quote obtained but no funds to progress. E. Babaahmady of building services has been contacted with a view to strengthen the partition wall in the area the brackets will be mounted.
   - MEBT Vacuum Manifold - Quote obtained but no funds to progress.
   - Re-bunching cavities – Billets at NTE, first payment made, P. Savage to meet with C. Evans to discuss progress. Finished components will be plated at NITEC.
   - Manifold pumps – Already purchased are 1 off 830 and 4 off 300 pumps. Pumps may be required in the diagnostics region. A review of the pumps required should be made.
   - Shielding - M. Dudman gave a progress update on the shielding build / design. P. Wright is aware of the financial situation and a meeting is arranged to discuss the additional shielding requirements. It is hoped that the suggested inside and outside shielding options can be reduced to either inside or outside. The original option to extend the roof blocks may raise issues with roof block weight exceeding crane limit. A provisional 300mm gap has been set aside to allow for shielding option if needed post radiation survey.
   - ESSO – Cable layout drawings have been produced there may be clashes with proposed extra shielding requirements. M. C. Gayther asked for cable lengths for the chopper to be kept to a minimum and indicated that the cable entry into the racks will be via the back and not the top.
   - Air Handling – It appears there is a route if needed to exit the R8 roof via a stack. The roof block will need to be modified to relocated ducting entry to

allow plant to fit on roof. M. Perkins has asked for the air handling to be incorporated into the machine control. P. Wright will advise.

RFQ (P. Savage)

1. Section three minor vanes pads are being re-machined. S. Jolly asked to be updated on the errors that were found with the vanes. The next step is to then re-machine the vanes.
2. It was noted that it was not NAB's fault the errors occurred as it appears to be related to stress. To date they have achieved a very high level of machining tolerance.
3. S. Jolly noted that the delays would affect the schedule and how we would be perceived by the OsC.

Chopper Beam Dump (P. Savage)

1. C. Evans is working on the design however this cost may be transferred to year two, therefore offsetting the progress date.
2. Dump has been modelled using data. High temperatures, above the materials annealing temp are indicated in the analysis.

AOB

1. M. Perkins informed the group a control system for the vacuum will be required at an estimated cost of £20K, based on a separate plc. He will liaise with the ISIS vacuum section to see how their systems are put together and work using touchscreens.
2. A question was raised regarding conferences in 2015. APAC and IPAC were mentioned.

Actions:

1. Everyone to consider their spend requirements on FETS.
2. P. Savage to co-ordinate RFQ work at NAB.
3. M. Perkins to talk to the ISIS vacuum Section.