Minutes of the Linac4 Diagnostics Working Group Meeting held on 5 November 2007

Present: G.Bellodi, E.Bravin, C.Dutriat, K.Hanke, T.Lefevre, F.Lenardon, A.Lokhovitskiy, M.Ludwig, B.Mikulec, M.Pasini, U.Raich, J.Serrano

Agenda:

1. Communications

2. Follow-up of open actions

3. Controls and read-out for the diagnostics

4. AOB

1. Communications

The BSHM is back from Orsay. The transport box has been stored in bldg 357.

M.Ludwig announced that Arkady Lokhovitskiy will represent AB/BI/SW in the Linac4 Diagnostics Working Group.

U.Raich announced that R.Garoby has found the possibility to get an electronics engineer from Malta. U.Raich will prepare a job description.

K.Hanke reminded that he has been contacted by a person who wants to do a thesis in electronics. Any suggestions are welcome.

2. Follow-up of open actions

Action for C.Vuitton and Y.Cuvet to produce working drawings for the profile monitors. Pending.

Action for U.Raich to start working on controls and read-out for the chopper line wire scanners and more general for the 3 MeV diagnostics. See **3.**.

Action for E.Bravin to draft a time planning for the construction of the emittance meter. D.Gerard will be invited to the next meeting and give a short update on the emittance meter including a planning.

Action for U.Raich to confirm and where necessary update the budget estimate for diagnostics. Not completed - now obsolete.

Action for K.Hanke to organise the application programming. K.Hanke has discussed the matter with E.Hatziangeli. The agreement is that K.Hanke will put together a list of the application programs needed and forward this information to J.Serrano who is the CO linkman for Linac4. M.Ludwig noted that they can cover a part of the applications needed by configuring existing software.

Action for U.Raich to collect the information on alignment and communicate it to F.Gerigk. Not completed.

3. Controls and read-out for the diagnostics

Transformers: use existing Linac2/3-type acquisition modules.

SEM grids, wire scanners and Faraday Cups: U.Raich said that there is a choice between 2 different types of ADCs to be made. This decision must be taken within the next 2 weeks. One option is the use of the

commercial INCAA ADC (http://www.incaacomputers.com/), under development in industry on request from CERN and to be used elsewhere at CERN. INCAA has 16 channels which means that 2 modules would have to be used. The prize per ADS is 2600 EUR. INCAA is not on the market yet. J.Serrano said that for CO the choice for INCAA has been made. The INCAA modules would be fully supported by CO.

Alternatively a card developed by BI could be used. In that case no support from CO can be expected.

U.Raich and J.Serrano are iterating on the decision process (next 2 weeks).

For the movement of the slow wire scanners and emittance meter (slit and grid): C.Dutriat is looking into a PLC solution; in progress.

For the movement of the SEM grids and Faraday Cups: they have only in/out position; compressed air.

J.Serrano clarified the budget policy: the same model as for the LHC will be applied. BI covers the front-ends. The equipment is bought through CO (who ensure standardisation) with BI money.

The question of piquet support was raised. The front-ends have to be covered by BI. CO is presently providing a piquet service, contrary to BI.

AOB

The diagnostics in the Booster injection region needed for H- injection will be addressed in one of the next meetings. For this the colleagues of BT will be invited.

M.Hori is editing a report on the BSHM test in Orsay. This will be presented at a special meeting.

The question was raised whether control of the Orsay diagnostics line is ensured. The line comes with its own controls (EPICS) and will only be temporarily used.

M.Pasini presented an emittance scanner based on a laser. The laser acts like a slit that scanns the H- beam and detaches electrons which are then collected and measured. The technique is interesting although space requirements and cost need to be clarified. A possible location for such an emittance monitor could be at the end of the linac. B.Mikulec is working on the lay-out of the region between the end of the linac and the dump. Presently an emittance measurement based on 3 profile monitors is the baseline. A laser scanner is not contained in the cost estimate. M.Pasini will collect more details and report in the next meeting.

-- KlausHanke - 07 Nov 2007
