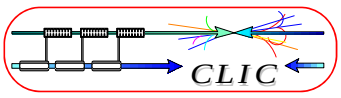

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Laboratoire Européen pour la Physique des Particules
European Laboratory for Particle Physics

CTF3-Cttee-Min-6

Minutes of the 6th CTF3 Committee

Thursday 18th September 2008

Participants at CERN:

R. Corsini, J.-P. Delahaye, K. Elsener, W. Farabolini (CEA Saclay), G. Geschonke, H. Monnard (LAL), G. McMonagle, F. Peauger (CEA Saclay), M. Petrarca, L. Rinolfi, R. Ruber (Uppsala University), K. Schirm, I. Syratchev, S. Vilalte (LAPP Annecy), V. Ziemann (Uppsala University).

Participants via Webex:

G. Blair (J. Adams Institute), A. Faus-Golfe (UPC Barcelona), A. Ghigo (LNF Frascati), G. Montoro (UPC Barcelona), P. Karataev, F. Toral (Ciemat Spain).

Excused:

J. Monteiro, F. Orsini, T. Ekelöf

Comment on Minutes of the 5th CTF3 Committee:

G. Geschonke apologizes for the Webex system which was not operational.

The Minutes are approved.

1. Introduction (G. Geschonke):

The agenda is approved.

Günther shows a summary of the last ACE meeting at CERN.

2. Status of PHIN laser (M. Petrarca):

Massimo reported the problems encountered with the first amplifier. Three different configurations were tested. Now with 85 A for the pumping current, a power of 3 kW is obtained at the exit of the first amplifier. The infrared pulse is 2 microseconds and provides energy of 4 mJ roughly.

Images at 80 A were presented which show rather flat transverse beam profiles. Before the beam size had been too large and therefore sensitive to reflections and parasitic effects. In summary, in the UV light, the energy is now:

E = 0.4 mJ with 2 µs pulse length

E = 133 nJ with 8 ps pulse length.

This corresponds to about a third of the specified energy for the CTF3 Drive Beam (370 nJ).

Next steps: the synchronization with the RF, the implementation of the second amplifier and the harmonic conversion with the second amplifier ON.

Günther congratulates the laser team for this remarkable progress.

3. Update on CTF3 installation and planning (L. Rinolfi):

Louis reported about the work plan for the October shut-down.

Activities will take place in the Combiner Ring (CDR detector installed on CRM line), in CLEX (CALIFES and TBTS) and in CTF2 (PHIN). The first beam from CALIFES is now foreseen for the 6th November 2008.

Concerning the tests foreseen with the RF gun for PHIN in CTF2, he reminded that only one klystron (MKS 14) is available for RF power and this klystron has to be shared between three users (PHIN gun, RF deflectors in the Combiner Ring and an RF deflector in Califes).

Manpower problems arising from the fact that the installation of PETS in TBTS is planned during the CLIC workshop were discussed. In addition V. Ziemann expressed his reservations to install the PETS before the TBTS has been properly commissioned; especially introducing an aperture restriction before all beam properties have been measured might cause a problem. Finally it was decided to go ahead with the installation as planned because it is very important to have beam in PETS as soon as possible.

See EDMS: https://edms.cern.ch/document/862088/

4. Update on CTF3 operation (R. Corsini):

Roberto presented a summary of results achieved during the second run. Compared to the program foreseen at the beginning of the year the beam physics studies are late. He reported difficulties with BPM's in TL2 and problems with the controls system, especially the Oasis system. It seems that a large dispersion exists in the dog-leg of TL2. A reduced transverse dynamics mixed with longitudinal dynamics make the commissioning of the line rather difficult.

Twiss parameters measurements in the Combiner Ring are necessary. He would like to study in more details the ring optics before installing the new RF deflectors. Nevertheless the model is now much better understood.

Since the last CTF3 Committee meeting progress has been made:

i) Four turns have been achieved in the Combiner Ring (~ 3 A) without losses.

ii) A first beam has been extracted into TL2 line. The strip-line extraction kickers work correctly.

iii) The highlight of operation was that the beam has been sent all the way up to the end of the TBTS for the first time. (~ 2 A).

In order to have a better understanding and a full control of the TL2 line, he requested, at least, two more weeks of commissioning.

R. Ruber mentioned the need to define a global longer term schedule with respect to the different parts of the machine and the requirements of the collaborations engaged in them. .

No news was reported on the operation for the 30 GHz program.

5. RF deflector for Combiner Ring (A. Ghigo):

Andrea reported the status of the new RF deflectors. The input couplers are measured and the coupling is as expected. In spite of some uncertainty concerning the multipactor behaviour of Al structures, it was decided to install the deflectors without Ti coating. The vacuum tests are OK. Since no place is available to perform RF tests before installation, it was decided to install directly these deflectors in the Combiner Ring. Andrea confirmed that the RF deflectors are expected to be at CERN next week

6. CALIFES (W. Farabolini):

Wilfrid presented the status of the Probe Beam accelerator. The misalignment of the line has been understood and corrected. The installation of beam instrumentation is finished except at the beginning of the line where the RF gun was removed.

The progress concerning the UV laser transport up to the photo-cathode was reported. The measured laser energy in the laser room is about 30 nJ/pulse. The pulse at the level of the photo-cathode is 15 nJ. This will provide a bunch charge of roughly 0.01 nC (compared to 0.6 nC nominal). Time for further laser adjustments was requested.

Progress on the RF network was reported and a big concern related to the high power vacuum phase shifter was underlined. The brazing of the ensemble failed and negotiations with the contractor are under way. As an alternative solution the use of a spare (old) device available at Saclay is being considered. This device has operated at only 3 MW, however, at different pulse length.

On top of that a detailed programme of CALIFES commissioning was presented.

Finally the CEA contribution to the White Paper to CTF3 was presented in 4 points: a) Long term mission (2 years); b) 12 GHz test stand; c) CLIC Module; d) Test beam Line

7. RF guns and laser (K. Elsener):

Konrad presented the status of the CALIFES RF gun and photocathode preparation chamber. The RF low-level measurements on the RF gun gave good results and confirmed those obtained at LAL. No news was received concerning the temperature variations in the hall. He proposed to move the temperature probe, which monitors the hall temperature, near the RF gun.

The schedule for PHIN is very tight. He acknowledged the work of several CERN groups for the support received in particular from the vacuum group.

8. TBTS (V. Ziemann):

Volker reminded that a first beam was obtained at the end of TBTS just in time for the CLIC-ACE meeting. He showed a list of machine studies to be performed, in particular measurements of beta-functions in the middle of the future PETS tank and emittances measurements.

He would like to get 2 weeks for commissioning the line before installing the PETS tank.

9. CDR (M. Micheler):

Max informed the committee that all hardware is ready for installation on the CRM line.

Work remains to be done for the automation and controls of the CDR experiment.

10. IFIC (A. Faus-Golfe):

Angeles reported the BPS status, in particular of the BPS1 prototype. She mentioned that the low cut-off frequency of 180 kHz is not well understood. A second prototype BPS2 will be used at IFIC to understand this behavior. Nevertheless the compensation installed on BPS1 + amplifier allows getting a flat response over 2000 ns. The BPS1 is now at CERN and will be installed in the TBL line.

The 15 BPS series construction has started.

11. UPC (G. Montoro):

Gabriel reported about the status of the BPS amplifier.

He showed several pictures for the analog head electronic and the calibration response in the time domain. The second prototype is going to be built. A PCB will be manufactured and then tested. If it's ok, the series will be started.

12. LAPP (S. Vilalte):

Sébastien reported the status of LAPP installation for BPM and BPI on TL2. He mentioned the hardware problems (jitter and noise) and how these problems could be cured by software solutions. He mentioned also software problems (master reset and FESA processes) and how these other problems could be cured also with software solutions.

He reported that the LAPP Scientific Council decided in July to continue the CTF3 collaboration, in the framework of "Contrat d'Objectif". The idea is to develop a new acquisition system based on CLIC specifications. The latter will be discussed with the collaboration and within 1 year the present CTF3 system, would be replaced by the new one.

13. Next meeting

The next meeting will take place at CERN on **Thursday 20 November 2008**.

L. Rinolfi