DRAFT Minutes of the CLIC meeting of 5.11.2010

Minutes of meeting from 8.10.2010
On the issue of the CDR Jean-Pierre confirms, that it has been agreed now that authors can submit a pdf file for review by colleagues before the final editing procedure starts. Submitted text can be seen at:
http://project-clic-cdr.web.cern.ch/project-CLIC-CDR/

News of general interest
Jean-Pierre thanked all contributors to the ILCWS for their excellent work. The large participation of nearly 500 people was impressive. CLIC and ILC can profit from synergies between the two projects, however maintain their own identity.
The next workshop in September 2012 will be in Spain.
During the workshop a meeting of the CLIC/CTF3 Collaboration Board was held. It was decided that the CLIC Advisory Committee (ACE) will have another session in 2011, provisionally the dates 2. to 4. of February are foreseen. The topics will be decided in due course.

Jean-Pierre presented Steinar Stapnes, the CLIC study leader designate who will fully take over next summer. In preparation of a smooth transition he will from now on chair the meetings of the CLIC Steering Committee.

Michel Jonker introduced Carlos Maidana, who started on the first of November as a fellow to work for machine protection. Initially his main focus will be the beam simulations of failure mode in the two beam accelerator.

Edda Gschwendtner presented the main topic, the CLIC Post Collision Line and Dumps. The beams after collision are strongly disrupted, i.e. they have a huge energy spread and large divergence. The average power per beam is 10 MW as well as about 4 MW in beamstrahlung photons. About 170 kW are in coherent e+e- pairs. In addition the line has to accept the full undisrupted beam in case the beams miss each other.
The line consists of a vertical magnetic chicane with large aperture, carbon based absorbers for magnet protection, an intermediate dump for low energy particles, and the main dump for high energy particles and photons.
All details are in the slides: http://indico.cern.ch/conferenceDisplay.py?confId=110479
The main beam dump is a water dump, first developed for SLAC for an average beam power of 2.2 MW. the design considered for CLIC is based on work for TESLA and ILC. The power for ILC is 18 MW, compared to 14 MW per beam for CLIC.
The line can be used for luminosity monitoring using the beamstrahlung photons. Either one can use the e+e- pairs produced in a thin C converter and detected with an OTR screen, or the $\mu+\mu-$ pairs produced in the water dump can be detected in a Cerenkov detector.

In the discussion the following points were raised, which might deserve some more thoughts:
Can one avoid a vacuum window in the line and use differential pumping instead?
Is tritium production a hazard leading to administrative complications? If this becomes a problem, perhaps a material other than water might have to be used.
Is it possible to operate the dumps at higher temperature to recover some of the power?

A thorough fault analysis is required, taking into account several failure scenarios.
Can experimental experience be gained with existing installations at CERN, such as the ntof target?
Could a collaboration with India for these matters where they have expertise, be envisaged?

Conclusion: A base-line design exists, many details have already been studied.

G.Geschonke, 10.11.2010