

DRAFT Minutes of the CLIC meeting of 8.10.2010

Approval of the minutes of the last meeting:

The minutes with comments already from Steven, Mike and Jan were approved.

News:

Jean-Pierre announces that **Steinar Stapnes** has accepted the position for the Linear Collider Study Leader. He has previously been deputy spokesperson of the ATLAS collaboration, he is technical secretary of the strategy planning group and already member of the CLIC collaboration from Norway. He is also involved in the ILC. He will be effectively in charge from July 2011.

The new CLIC web site will be put in place next week.

Daniel presents his '*Consideration on the Conceptual Phase Stabilisation System*'. He shows the luminosity loss and emittance growth as a function of phase and gradient error or in terms of current and bunch length.

Roberto mentions that a term for varying bunch phases for the drive beam pulses should be included.

The bunch compression of the DB is an important source of phase error. A compression at high energy leads to very tight current and phase tolerances. Compression at lower energy relaxes energy tolerances (factor 5) but keeps the same phase requirements. A feed-forward in the turn-arounds relaxes the phase tolerance by a factor of 12 to 0.2° @1GHz. An overcurrent of 1% in the current decelerator will render the beam unstable.

Daniel shows the tolerances on gradient and phase for beam and klystrons calculated for the planned chicane.

The measured current variation at CTF3 is already in the required per-mille range, with a feed-back this is reduced to $0.6 \cdot 10^{-3}$. Klystron phase and power measurements at CTF3 correspond to the drive beam need.

DB turn-around magnet strength jitter is not problematic if magnets are properly powered in series.

Due to combination of the DB in the CRs, the errors at the beginning of the pulse can be corrected later in the same pulse and the errors are filtered. Choosing the proper fill time of the structure, the error can be further reduced.

Daniel explains the two options for the phase reference timing. He shows local and global error models and explains the errors for the cases of beam and distributed timing. He presents the RTML sensitivity on different error sources and possibilities for improvements, for example measuring the outgoing MB phases and correcting the final focusing waist to the anticipated collision point.

Finally he presents the feedback and tuning strategy, some other issues and further work needed.

As a conclusion, he resumes the timing options and thinks to have a concept for the drive beam generation and transport complex that leads to acceptable tolerances and is close to becoming a performance and cost issue.

Jean-Pierre asks about the number of feed-forwards. Daniel replies that one huge system is foreseen that needs to disentangle the various sources. **Hermann**

comments that you need redundancies to make sure that the system works reliably and that internal diagnostics is needed to detect possible problems. Hermann notes that the 500 GeV layout with one DB injector will look different and wonders if a different treatment is needed. This will not be detailed for the CDR.

Hermann asks if someone within CLIC needs tighter specifications than the ones presented here.

Hermann reports on the progress with the CDR and suggests that general questions for the CDR can be discussed here. **Jean-Pierre** comments that after writing a contribution, it has to be checked with other people. Since there is no possibility for changes any more after sending it, he is hesitant to send it.

An international editorial board (IEB) will look at the contributions, Susan will do the final copy editing. Contributions will be rapidly included, even as beta versions, and put online. The date for the IEB has to be fixed depending on the readiness of the CDR. Three months for copy-editing before April 2011 are needed, two months for the IEB.

Roberto suggests putting all draft versions as PDF separately in a directory. This could be eventually done by end next week. PDF files should be sent with the status of the readiness for final production.

A.O.B.:

Frank Tecker, 4.11.2010