

Draft Summary Notes of

2nd INFORMAL Institute Board Meeting of the CLIC Detector and Physics Study

Held at CERN on 18 April 2013, 15:30-17:30

Present at CERN: Konrad ELSENER (CERN), Frank SIMON (**Max Planck Institute für Physik**, Munich), Mark THOMSON (University of **Cambridge**)

Also present: Lucie LINSSEN (CERN), for the ad-interim Executive Team

Attended via Webex: Konstantin AFANACIEV (**Minsk**, Bielorrussia), Marc BOLAND (Australian Collaboration for Accelerator Science **ACAS**), Phil BURROWS (University of **Oxford**), Marek IDZIK (**AGH** University of Science and Technology, Cracow), Tomas LASTOVICKA (Institute of Physics, Academy of Sciences, **Prague**), Aharon LEVY (**Tel Aviv** University), Strahinja LUKIC (for Ivanka BOZOVIC-JELISAVCIC (**Vinca** Institute of Nuclear Sciences, Belgrade), Alberto RUIZ (**Spanish Network for Future Linear Colliders**), Ulrik UGGERHOJ (**Aarhus** University), Nigel WATSON (University of **Birmingham**), Leszek ZAWIEJSKI (The Henryk Niewodniczanski Institute of Nuclear Physics, **Polish Academy of Sciences**, Cracow)

Apologies/absences: Harry Weerts (**Argonne Nat. Lab.**, High Energy Physics Division) / Gerald EIGEN (**Bergen** University), Titi PREDA (**Institute for Space Science**, Bucharest)

Link to Meeting (Indico page): <http://indico.cern.ch/conferenceDisplay.py?confId=234845>

1) Welcome and Approval of Agenda

Frank Simon, who had been asked to chair this informal Institute Board (IB) meeting, welcomed the participants - the agenda as on Indico was approved.

2) Update on members of the CLIC Detector and Physics study (CLICdp)

The updated list of the now 17 CLICdp study members can be found on the webpage <http://lcd.web.cern.ch/lcd/Home/MoC.html> . Konrad Elsener explained that colleagues from a further three institutes are already actively participating in the study, and at least two of these intend to formally join the MoC. Good contacts exist with another four institutes, but it might take a bit more time before they join.

3) Discussion on Annex 4 of the MoC

As agreed during the 1st meeting of the IB, guidelines on publications and conference speakers are needed. A team of volunteers (A. Levy, D. Schlatter, F. Simon, M. Thomson) has prepared and distributed - prior to this IB meeting - a draft document <http://indico.cern.ch/getFile.py/access?contribId=2&resId=1&materialId=0&confId=234845>.

The document found general approval by the members of the IB. Answering to one question, Frank Simon explained that the deadline given (e.g. two weeks) were meant to be the ones to collect a first set of comments - the full process would usually take longer, also depending e.g. on possible controversial parts in a draft publication.

Mark Thomson pointed out that the size of the committees (three persons in each of them) was chosen to be rather large to allow speedy procedures even if one or the other person is temporarily not available.

There will be one minor modification to the document: The different types of publications on CDS will be called CLIC-DP-Note-yyyy-nnn, CLIC-DP-Pub-yyyy-nnn, CLIC-DP-Conf-yyyy-nnn. In summary, while this draft Annex 4 to the MoC was accepted by all, this informal IB could **not approve** it - this will have to be done at one of the first formal IB meetings, to be organised after the election of the IB chairperson.

(NB. The **updated draft** of Annex 4 has now been uploaded on the Indico page of the IB meeting.)

4) News or remarks from the participating institutes

Phil BURROWS (**Oxford**) mentioned that, in addition to the MDI-related contributions, his team would be interested to also participate in simulations studies. Manpower is however an issue. In the meantime, Phil has contacted Armin Reichold (ATLAS alignment system based on frequency-scanning interferometry) and discussed with him ILC and CLIC detector alignment issues - as a result, Armin will give a talk at the ECFA LC workshop in Hamburg. Alignment of detector elements and/or QDO final quadrupoles might become a future CLICdp activity in Oxford.

Leszek ZAWIEJSKI (IPN **Cracow**) stressed that, in addition to on-going FCAL work, the group is starting to look into WW and $\gamma\gamma$ physics, first for the case of the ILC and later for CLIC (in both cases with emphasis on using the information from the very forward detectors).

Marek IDZIK (AGH **Cracow**) explained that his group is passing through a very delicate moment in terms of manpower, but that this should be a temporary problem. The team is mostly active in FCAL-related hardware and readout work, including some initial contributions to CLIC on triggerless readout.

Mark BOLAND (**ACAS** Australia) introduced the activities of his institute (closely linked to the University of Melbourne), and pointed out that they have been since some time members of the CLIC-CTF3 collaboration on accelerator issues. On the detector side, he mentioned possibilities for Pixel research (including a future 3 GeV electron test-beam), and stressed

that there is a wish to start working on a physics simulation. They will have a meeting to discuss this internally in the week of 22 April. Considerable computing capabilities are available for GRID production.

Nigel WATSON (**Birmingham**) admitted that there was little possibility right now for a serious effort concerning the CLICdp study. Some work might be possible in future, part-time by students and making use of synergies with LHCb-related work.

Strahinja LUKIC (**Belgrade**) explained that the team has traditionally been working on the luminosity measurement, including physics background and the study of systematic errors. After joining the CLICdp study, they took the responsibility for the benchmark channel Higgs to $\mu\mu$ at 1.4 TeV c.m..

Strahinja also mentioned that a letter of support, written by Lucie, sent to the Serbian ministry, has prompted a very positive reaction and created interest from other groups to join this study. Lucie said that a phone meeting will be set up in the coming week to discuss the possibilities in detail. In this context, Lucie mentioned that work has started on drafting a list of additional physics analyses, which in principle could all be good topics for contributions by non-CERN participants in the CLICdp study.

Tomas LASTOVICKA (**Prague**) explained that applications for new grants are being prepared in his institute, but that the non-defined future of linear colliders makes it difficult to obtain funding. Prague is contributing to the Higgs benchmark analysis, in particular Higgs self-coupling and Higgs decays to quarks and gluons.

Mark THOMSON (**Cambridge**) said that they are presently focussing on ECAL simulation studies (John Marshall's work), and that good progress has recently been made. In the near future, Mark will have a PhD student and a Master student, who will be doing physics analysis.

Frank SIMON (MPI **Munich**) described the transition period in his team, with two PhD students completing their thesis. However, he expects to soon have two new students, who would be working on CLIC physics studies (triple-Higgs or others). In parallel, a smaller contribution to the ECAL studies is being made, and contributions to CALICE are continuing (Master student).

Konstantin AFANACIEV (**Minsk**) mentioned that, after a discussion at their institute, Prof. Shumeiko had come to CERN to present a possible work plan of the Minsk group. This includes mainly work on physics generators. In parallel, hardware work for FCAL (on radiation hard sensors for BeamCAL) is continuing, and is also relevant for CLIC.

Lucie gave a short summary of the meeting with Prof Shumeiko, and explained that a bit of time was needed to understand the proposed studies - feedback to Minsk will be given shortly.

Aharon LEVY (**Tel Aviv**) said that a PhD student is presently working on the FCAL testbeam data analysis and on preparations for a next testbeam period. In parallel, S. Kananov is working on software and Monte Carlo studies for FCAL.

Alberto RUIZ (**Spanish** LC Cons.) explained that they have been generally active in issues related to forward tracking, mainly from the hardware point of view, but also performing simulations.

On behalf of the **Bergen** group, Lucie mentioned that they are contributing to the ECAL studies (both for ILC and CLIC). The **Argonne** group has participated actively in the CLIC CDR, and is presently collaborating with a small team from CERN on the analysis of the testbeam data with the tungsten-based digital hadron calorimeter. Konrad added that a discussion with the **Aarhus** group on their possible contributions is scheduled for 23 April.

5) News from the ad-interim Executive Team

Lucie informed the IB members about forthcoming workshops and conferences, and about the CLIC contribution/participation to the Snowmass process/meetings in the US (see slides on Indico). A "white paper" on the CLIC physics reach is being drafted and will be submitted to the Snowmass process.

This paper could be the first occasion when a CLIC detector and physics study **author list** would be needed. After a short discussion, it was **agreed** that the matter of author lists will be on the agenda of the next IB meeting. In preparation for that meeting, Konrad Elsener has been **mandated to collect**, from all the institutes, a first list of names (authors).

Lucie went on to give some additional information concerning the update of the European Strategy (see slides). A deliberation document, which exists only as a very advanced draft, indicates the priorities at the high energy frontier, i.e. a future very high energy p-p or e^+e^- collider.

Finally, Lucie stressed that we should now have our own CLIC Detector and Physics study web pages (presently, some material is integrated in the CERN-LCD web pages). For this, a **volunteer is needed** - if you have a colleague in your institute who is "good at" creating web pages, and who likes to do this, please send an e-mail message to Lucie.Linssen@cern.ch .

6) Discussion on next steps - election of IB chairperson

Frank introduced the topic and raised the question of a transition towards a more formalized IB, one which would be able to take decisions. The transition to this next phase would have to begin with the election of a chairperson. There was general support from members for moving towards the formal IB process, and for electing a chair of the IB.

Lucie pointed out that the chair of the IB should not be a person from CERN. This makes it possible to suggest Konrad to act as polling officer for the election of the first IB chair.

Konrad presented a proposal for procedures (see slide on Indico) and stressed that these would only be used for this first election of an IB chair. Once the IB meets in its formal way,

as foreseen by the MoC, the detailed rules for future elections (IB chair, Spokesperson) will have to be worked out and described in annexes to the MoC. After some discussion, which led to a few small adjustments (already implemented in the slide on Indico), the procedure was approved. It is hoped that the election could be successfully completed by 24 May 2013. The main points of the procedure are:

- Suggest names of candidates (members of the IB) to Konrad
- Konrad to talk to the candidates
- Konrad to distribute the list of candidates and ask for votes (via e-mail, one vote per institute)
- The majority of institutes is decisive (not the majority of votes submitted - so we will have to push everyone to participate in the vote!)
- If necessary (no majority of institutes in the first round), a second round of voting will take place.

7) Date and place of next IB meeting

The members agreed that the next IB meeting should be held in the same format, i.e. at CERN and via webex/phone. The aim is to have a meeting in June 2013 - in an attempt to find a date which fits for all members, a DOODLE poll has been set up after the meeting.

8) A.O.B.

8.1. Requests to the interim Executive Team

Lucie Linssen asks all participating institutes to not hesitate forwarding suggestions/wishes to the interim Executive Team.

8.2 Possible CLIC Detector and Physics meeting in summer 2013

Lucie Linssen pointed out that the CLIC workshop in January 2013 has brought together a larger number of colleagues, also from the detector and physics study. A next such workshop is currently planned for January/February 2014. In between, much of our work is organised through a set of short working group meetings. It is generally not possible for colleagues to come to CERN for such short meetings. Therefore the question: Would it be useful to have a somewhat larger/longer meeting, or an accumulation of several working group meetings into two days, sometime at the end of summer 2013, to allow more colleagues to present their work and meet in person?

After some discussion, there was a **general feeling** that this could be useful, if a suitable date can be found. Lucie (via Kate Ross) will launch a DOODLE poll to find a possible date for such a meeting.