

DRAFT: Minutes of ML-SCRF Technology Meeting (130213)

Date & Time:

14:00-15:00 GMT, February 13, 2013, via Fuzebox.

Participants:

R. Geng, H. Hayano, P. Pierini, T. Peterson, C. Nantista, A. Yamamoto, M. Ross, N. Walker, W. Bialowons, B. List, C. Pagani, and T. Shidara

Presentation files are available at the following Indico site:

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=5988>

1) Report from Project Managers (Akira Yamamoto, Nick Walker and Marc Ross)

Akira started the meeting by stating that this one would be the last SCRF monthly meeting, since the transition from GDE to the next organization, Linear Collider Board/Directorate (LCB/LCD), would take place at the ICFA/ILCSC (Vancouver), February 21-22.

Akira visited the SCRF related schedule; External Cost Review (last week), ICFA/ILCSC (February 21-22), IPAC (May 13-17), ECFA-LC (May 27-31), ILC-event (June 12), TTC (June 12-14?), SRF2013 (September 22-27), LCWS-2013 (November 11-15), and so on.

Akira reported on the TDR External Cost Review (chaired by N. Holtkamp at Windsor, February 6-7) rather extensively using his presentation file of SCRF cost summary. Akira mentioned that the fraction of the SCRF related items (Cavity/Cryomodule, Cryogenics, and HLRF) would exceed 50% of the total ILC value.

The major comments from the cost review are the following: Develop a plan for the next (transitional) phase of engineering design leading to readiness to start construction; The cost estimate of the cavities seems overly optimistic given other project experience; Reassess the cost of cavity/cryomodule test assumption of doing it in the hub labs with no initial investment; The cost of manpower should be explicitly included; A clear understanding of manpower needs in the central versus hub teams is needed; Develop placeholders for the site specific cost.

The committee concerns the cavity cost and recommended to define an updated value for the cavity fabrication which is in between the obtained from EXFEL costs using a 95% learning curve and the value from the RI study, and mentioned the risks to maintain the high gradient of cavities during the module assembly process.

As for HLRF related topics, the committee mentioned the remaining performance risk in the RF distribution for KCS and recommended to verify the power distribution performance ASAP in case the flat land site is pursued and to fix the labor rate in the modulator estimate as well.

Marc commented that the cost review was also performed on CFS and accelerator system related parts, and was pleased with the successful recommendations and instructions from the last internal cost review at FNAL, last November. Marc and Akira appreciated the hard efforts and contributions from the GDE TAGLs.

2) Reports from Group Leaders (Rongli Geng, Hitoshi Hayano, Paolo Pierini, Tom Peterson and Chris Nantista)

Rongli reported that they would have the 44th ILC Cavity Group meeting on February 19. In addition to the regular agenda, they will discuss the activities and organization of future cavity R&D meeting in the era of Linear Collider Collaboration under the leadership of Lyn Evans for LCD and Mike Harrison for ILC. Rongli was asked by Mike to continue this activity, since the understanding of cavity gradient degradation issue is important globally, and he needs the guidance how to organize the meeting which has already attracted more than 40 interested participants. Akira thanked Rongli and Camille for their efforts during the TDR phase and expected their continuing help, especially for cavity data base activities.

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Hitoshi commented that they had no cavity-integration/cryomodule meetings, which had been scheduled bi-monthly last year. He proposed to have joint meetings with cryomodule group in the future organization. He reported that the operation of the Quantum Beam accelerator at STF was extended 6 weeks, starting from the next week, since no X-ray was detected at the experiment last December. The cool-down of the 2-cavity cryomodule was started last week and will reach at 2K this week.

Paolo favored the suggestion made by Hitoshi to combine the cryomodule and cavity-integration meetings in the future organization, following the successful experience of the S1-Global collaboration and because of the resource limitation as well. Akira also appreciated and

impressed by the successful collaboration of S1-Global. He mentioned that the new type-4 cryomodule for STF-II would be delivered to KEK early next year.

Tom commented that there still remains uncertainty in cryogenics which was pointed out in the last cost review. They need to estimate the special underground installation cost, although they don't know the details. Tom expressed his pleasure to have been a part of GDE.

Although Shigeki missed this meeting, Chris expressed his appreciation working with Shigeki as co-leaders of the GDE HLRF group, especially speaking the SLAC-KEK collaboration on Marx modulator, KCS big-pipe experiment and Toshiba MBK klystron.

3) **Comments and Others (Akira Yamamoto, Nick Walker, Carlo Pagani and Benno List)**

Nick reported that they had a meeting with R. Brinkmann (one of reviewers) who summarized the recent external cost review. He assessed the TDR cost positively and was impressed by the TDR cost estimate which would become a solid basis beyond TDR phase.

Concerning TDR, Nick is mainly concentrated on layout and figures. He asked us to pay attention to the list of contributions and not to forget to sign up.

Akira reported that he had submitted the review report "Advances in Superconducting RF Technology for the ILC" to the ASC2012; PMs and GDE SCRF TAGLs are all involved as co-authors.

Akira showed the chart of the next ILC organization; Linear Collider Board (LCB: chaired by S. Komamiya, University of Tokyo), Linear Collider Directorate (L. Evans – Director, H. Murayama - Deputy), ILC (M. Harrison – Director), CLIC, and Physics & Detectors. The role of this organization is to take actions for the ILC realization: Detailed engineering design; Further R&D for cost effective construction. Marc added that the director of the CLIC is S. Stapnes (CERN) and that for Physics & Detectors is H. Yamamoto (Tohoku University).

Nick announced the importance of the coming ECFA/LC2013 (DESY), which will be the first conference under the new organization, and asked us to make registrations. SRF technologies are in scope and SCRF related R&D plans for the coming several years will be discussed.

Carlo was asked to make comments and he stated that the GDE SCRF activities were well-done.

Benno commented that lots of works in the TDR to be finalized and completed. As it was pointed out at the cost review, we need to put many documents including interface specifications into EDMS.

Akira finally expressed his thanks to everybody, who had been involved in the global cooperation for the ILC GDE SCRF and ML design and R&D works during the ILC Technical Design Phase since 2007. He wished the further process would be successful to realize the ILC in the near future.

4) **Future Meetings**

Next ML-SCRF meeting is not scheduled

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| ICFA/ILCSC (Vancouver) | 21-22 February |
| IPAC (Shanghai) | 12-17 May |
| http://www.ipac13.org/ | |
| ECFA/LC2013 (DESY) | 27-31 May |
| http://lc2013.desy.de/ | |
| ILC Event | 12 June |
| TTC (Cornell)? | 12-14 June |
| SRF2013 (Paris) | 23-27 September |
| http://www.srf2013.fr/ | |
| LCWS-2013 (Tokyo) | 11-15 November |