

Minutes of ML-SCRF Technology Meeting (100630)

Date & Time:

13:01-14:03 GMT, June 30, 2010, via Webex.

Participants:

C. Ginsburg, H. Hayano, N. Ohuchi, T. Peterson, S. Fukuda, C. Nantista, A. Yamamoto, N. Walker, W. Bialowons, J. Carwardine, N. Toge, P. Garbincius, T. Shidara, J. Kerby, M. Ross, S. Aderhold, B. Rimmer, M. Champion

Presentation files are available at the following Indico site:

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4671>

1) **Report from Project Manager (Akira Yamamoto)**

Akira reported on the first AD&I meeting regarding collision frequency, particularly that of a 5Hz scheme for energies up to a center of mass of 250 GeV, and noted that the effect of this idea on the HLRF and AC power would need to be further discussed and monitored. The upcoming AD&I meetings shown in his slides, and a note that participation in these is important such that the Baseline Assessment Workshops are as productive as possible. (<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4624>)

He introduced the draft of the release 5 R&D plan but deferred discussion until after the group leader reports.

2) **Reports from Group Leaders**

• **Cavity Gradient (Rongli Geng)**

No report, this meeting.

• **Cryomodule (Norihito Ohuchi)**

Norihito reported that the S1 Global effort continues to go well, with the first thermal test at 4K complete, and Piezo and Tuner tests ongoing. FNAL and INFN colleagues arrive at KEK starting 5 July to do further tuner tests, and then there will be a repeat of the thermal tests at 2K. Akira complimented the team for the ability to stay on schedule after all these months.

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4674>

• **Cryogenics (Tom Peterson)**

Tom commented that he and Norhito had discussed the S1 tests, and the submission to the R&D plan, and it looked to be a good and complete plan.

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4674>

• **HLRF (Shigeki Fukuda and Chris Nantista)**

Shigeki reported that at KEK the HLRF system is being prepared for S1 Global. The Klystron is installed and almost ready. The last 2 weeks they have been preparing for the DRFS test, though the modulator manufacturing has been a little delayed but they are working with the manufacturer to make up the time. From the end of September to early October the plan is to test the power supply, modulator and klystron above ground, then move it to the tunnel in time for tests later in the year.

From SLAC Chris reported that 3 sections of the big pipe are being pumped down, with the 4th section being replaced due to wall thickness safety issue. The CTOs are at metrology for dimensional checks, while the Indium waveguide seal is being high power tested this week.

• **Cavity Integration (Hitoshi Hayano)**

Hitoshi reported on the successful test, to 35MV/m, of the first Hitachi 9 cell (without HOM coupler). Q0 at 35MV/m was 6E9. This is the first 1.3GHz cavity from Hitachi, after more than a year of close (weekly) work with KEK and a large effort by Hitachi to understand, in cooperation with a few smaller subcontractors, the EBW process. Furthermore, the KEK-IHEP/China collaboration has a large grain LL (low loss) cavity that will be tested in the next day at KEK. On S1 global, Hitoshi noted that after cycling successfully two tuners, on ACC011 and on MHI09, became stuck. This is being investigated. The piezo systems are all OK.

3) Special Discussion

- **TDP R&D Plan Update**

Akira asked everyone to read and comment on the draft of the R&D plan that he distributed with the talks for this meeting. He then walked through the document in the current state, noting where further work needs to be done. In particular he noted the RF section needed to be updated, and that it would be good to have a list/table describing the expected cavity procurements by region in the upcoming years, as well as a list of more detailed parameters such as those for the split quadrupole effort at Fermilab.

In addition, some text still needs to be inserted, including the US Industrialization submission. This document is very important, and it the road map for the next several year. Everyone is asked to thoughtfully read and comment on it.

Camille then presented the update in the cavity yield plots (her talk is posted), after updates to the database including the most recent tests from JLab and DESY. These plots will be included in the R&D plan. There was one further request for the R&D plan which was to make an example of the cavity spread plot including the average and the range, as compared to the current version including the average and rms as a function of cut value. Camille noted the database team is having further discussions on how best to include the results from RI018, but this would not be finalized before Rongli returns next week.

Peter Garbincius asked about making plots showing progress in cavity gradient yield with time, something that was specifically asked for by the PAC. Or some other type of plot that would show progress in the industrialization over the past years. For the moment, a progression of the total yield for first and second passes at 25MV/m and 35 MV/m has been presented essentially at every workshop or meeting for the past 9 months. Akira noted that the statistics remain limited, but these plots could be made in the future.

Peter also noted with respect to the R&D plan that the effect on cost and risk of having multiple manufacturers should be noted.

- **BAW-1**

Due to time the BAW was not discussed, but Akira noted it will be the main subject of the next ML-SCRF Webex, July 28.

4) Others

Marc Ross commented that the designers should pay attention to the results, particularly with respect to microphonics from S1, S2, and FLASH in the cryomodule design.

5) Further Plans and Meetings

Next ML-SCRF Webex meeting: July 28, 2010, 13:00- GMT

Main Linac BAW-1: September 7-10, 2010 (KEK)

LINAC10: September 13-17, 2010 (Tsukuba)

<http://linac10.j-parc.jp/>

LCWS / CLIC-ILC: October 18-22, 2010 (CERN)

<https://espace.cern.ch/LC2010/default.aspx>