

## **Draft: Minutes of ML-SCRF Technology Meeting (100602)**

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### **Date & Time:**

13:01-14:03 GMT, June 2, 2010, via Webex.

### **Participants:**

R. Geng, C. Ginsburg, Y. Yamamoto, H. Hayano, N. Ohuchi, T. Peterson, S. Fukuda, C. Nantista, A. Yamamoto, N. Walker, W. Bialowons, J. Carwardine, N. Toge, P. Garbincius, T. Shidara

Presentation files are available at the following Indico site:

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4616>

### **1) Reports from Project Manager (Akira Yamamoto)**

Akira informed first that the draft due date for the R&D plan release 5 had been postponed to June 11 and the R&D Plan release 5 to the end of June. Akira then reported the summaries of ILC-PAC, Cavity Industrialization workshop as a satellite meeting at IPAC'10, and the CF review on design studies of Asian single tunnel in mountain regions.

PAC review was held in Valencia on May 13-14, 2010. The chair of this PAC was changed to Lyn Evans.

(<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4509>)

According to Akira's impression, PAC response was positive to the SB2009 proposal, in contrast to the comments from AAP review, and PAC is noting the importance of cost reduction effort in timely manner and is strongly supporting the cost containment efforts.

A satellite meeting at IPAC'10 on cavity industrialization was held in Kyoto on May 23.

(<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4530>)

It was a small meeting, but there were very productive and useful discussions. Peter asked if any production model was presented. Akira commented that Kako (KEK) reported the Asian industrialization model study performed in cooperation with Japanese companies based on the process chart and working time estimates given by KEK experts. Peter noted the difference if the industrialization study has performed solely by the company.

CF review on Asian single tunnel in mountain regions was held on June 1-2.

(<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4613>)

Technical feasibility and consistency with the GDE design guideline of the sub-tunnel scheme were reviewed. The review panel positively commented for the design studies of the ILC Conventional Facility (CF) in mountain regions done by KEK-LC-CFS group in cooperation with AAA Conventional Facility Working Group (AAA-CF-WG) and encouraged them for the further engineering work required in the CF design with limited resource and time in TDP-2.

### **2) Reports from Group Leaders**

#### **● Cavity Gradient (Rongli Geng)**

Rongli reported the progress in US. AES-009 dressed cavity was tested at HTS (Horizontal Test Stand) in FNAL and reached 35 MV/m without measured field emission, consistent with the last vertical test result at JLab (36 MV/m quench limit without field emission). This cavity is "Cryomodule-ready". A new 9-cell cavity, RI-029 (heavy EP at RI, 800C vacuum furnace heat treatment at JLab, final EP and cleaning at FNAL/ANL), was tested at VTS (Vertical Test Stand) in FNAL and reached 35 MV/m at Q0 >1E10 in its first pass measurement without measurable field emission.

(<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4588>)

#### **● Cavity Integration (Hitoshi Hayano)**

In the S1-G collaboration, module-A warm-coupler installation was finished. Doorknob installation is under way. Vacuum leak check of the cryostat was done with finding no leak. Monitor cabling is under way and software preparation for measurements will be finished soon. Final pumping of the cryostat will start this week, and cool-down will start next week. Akira expressed his sincere thanks to all the contributed people and for their hardest efforts to complete the S1-Global cavity and cryomodule assembly to have been completed as planned.

(<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4619>)

#### **● Cryomodule (Norihito Ohuchi)**

Norihito confirmed the report given by Hitoshi on the S1-G status. Akira expressed his special thanks to Norihito for his leadership given in the process of the S1-Global cryomodule preparation.

#### **● Cryogenics (Tom Peterson)**

Tom reported that Vic and FNAL CFS group asked him the impact of layout change in cryogenics system

(compressor location and so on). Since it is rather a scope change of the cryogenics system, further study will be required. Akira mentioned that Kenji Hosoyama presented this configuration during the CF review on Asian single tunnel in mountain regions, and asked Tom to provide comments and advice concerning this issue.

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

Shigeki had no report from KEK side. Chris reported the R&D status at SLAC; the large pipe section is in place, the MBK klystron tests have resumed since there is a problem of 2<sup>nd</sup> harmonics, and the conditioning of the Marx generator is completed.

### 3) **Special Discussion**

- **TDP R&D Plan Update**

Akira asked TAGLs to provide a compact description on the R&D issues to be included in the new R&D plan (release-5). The draft due date for preparation and contribution from each group has been postponed to June 11 and the R&D Plan release 5 to the end of June. Akira showed the R&D issues which he had sent to TAGLs prior to this meeting today, and asked them to report the status and advice on these issues.

Rongli presented the present status of cavity gradient improvement and its limitation as well as the strategy for improvements. Akira asked Rongli to prepare a description on the strategy in text form.

Camille (Ginsburg) responded that she would ask the ILC/GDE database group to add the updated data from each lab to the ILC database by June 21, so that she could provide the update plots till the June 30 deadline for Akira's short term request. For longer term, she would prepare for the BAW-1 and further.

Hitoshi responded that he would prepare a description on the evaluation of tuners and input couplers at S1-G collaboration.

As for the R&D plan on the cryomodule integration, since we will have much experience in DESY, FNAL and KEK, Norihito will include the comparison study. The radiation shielding issues will be also included in the R&D plan.

Shigeki will refine the R&D proposal for DRFS and will revise the R&D strategy and plan although the details will be prepared for BAW-1. Demonstration of a DRFS model unit in S1-Global together with key R&D items such as HV relays will be also included.

Chris will prepare a description on the R&D plan for KCS; Waveguide pipe, 2<sup>nd</sup> design Marx generator, MBK, remote control of VTO.

Proposal for R&D plan on splittable quadrupole in cryomodule is needed, and Akira will ask Chris Adolphsen to prepare the related description in communication with Jim Kerby and Vladimir Kashkin.

- **BAW-1**

Akira showed the topics listed for BAW-1. The preparation should be completed till the end of August. These topics will be discussed in the next SCRF webex meeting and TAGLs are requested to report their preparation status.

### 4) **Others**

Akira showed the industrialization model which Kako presented at the satellite meeting of Cavity Industrialization. Peter wondered if the number of 6 vendors is appropriate.

Peter reminded the necessity to respond to the questions from the PAC about HLRF schemes. Shigeki and Chris are busy for their DRFS and KCS schemes and they don't have enough manpower for the backup plan (RDR HLRF scheme in single tunnel). Akira will ask Nick if the input and reflection of the progress in XFEL mass production program will be used to get helpful information for this backup plan.

### 5) **Further Plans and Meetings**

TDP R&D Plan Update draft to be sent to Akira: due June 11

Next ML-SCRF Webex meeting: June 30, 2010, 13:00- GMT

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

LINAC10: September 13-17, 2010 (Tsukuba)

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