

Draft: Minutes of ML-SCRF Technology Meeting (090218)

Date & Time:

14:00-15:05 GMT, February 18, 2009, using WebEx.

Participants:

H. Hayano, N. Ohuchi, T. Peterson, S. Fukuda, C. Adolphsen, A. Yamamoto, N. Walker, J. Carwardine, W. Bialowons, J. Kerby, E. Paterson, N. Toge, S. Mishra, G. Apollinari, M. Champion, R. Kephart, R. Rimmer, R. Geng, T. Shidara

Presentation files are available at the following Indico site;

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=3399>

1) Report from Project Mangers (A. Yamamoto)

- DESY visit (Jan. 26-27)
 - MOU Addendum for S1-Global was the main issue.
 - Work sharing and responsibilities were agreed on cavity contribution and participation to the cavity assembly and test.
- Cavity company visit
 - Date for ACCEL visit will be on March 4 and presentation from GDE is being prepared.
- InPAC-2009
 - Indian Particle Accelerator Conference 2009 was held at RRCAT, Indore. A. Yamamoto gave a talk on "Global R&D effort of SCRF technology for the ILC".
 - Discussion with RRCAT director, Dr. V. Sahni, was held for long term cooperative effort on cavity and cryomodule design work in view of cost-effective manufacturing and on exchange of scientists and engineers.
 - Discussion on cavity, tuner and cryomodule was also held with K. C. Mittal (BARC), G. Mundra, V. Jain (RRCAT), V. Mishra (BARC) and K. Prashant (RRCAT).
 - FNAL Director, P. Oddone, participated the conference and the MOU established between FNAL-Indian Institutions on the first day of the conference.

2) Brief Reports from GLs

- Cavity Technical Area Group (TAG) Status
 - S0 Webex meeting is scheduled next Tuesday, February 24. (M. Champion)
 - One cavity recently reached over 40 MV/m gradient with only one EP process and ultrasonic detergent surface treatment at J-Lab. (R. Geng) >> IT IS A GREAT NEWS!!
- Cavity Integration TAG Status (H. Hayano)
 - Response of the piezo tuner is now under measurement at STF in order to check the hysteresis behavior.
 - Magnetic shield effect with/without cavity magnetic shield was measured at the STF vertical test (VT) stand. Residual resistances are 8 n Ω , 10 n Ω and 13 n Ω , with both magnetic shields, with only VT magnetic shield and with only cavity magnetic shield, respectively.
 - Slide-jack-type tuner position of the STF TESLA-like cavity for S1-global and S2 is under discussion in conjunction with the Plug-Compatibility concept.
- Cryomodule TAG Status (N. Ohuchi)
 - Three KEK staffs with INFN/Milano collaborators visited Zannon in the last week of January and manufacturing drawing of the S1-Global cryomodule will be defined till the end of February.
 - S1-Global Cryomodule and Cryogenics Webex meeting will be held next Tuesday (Feb. 24, 2009).
 - RRCAT (K. Prashant) is going to join the meeting for cryomodule design and development as a part of participation to the ILC R&D.
- HLRF TAG Status (S. Fukuda)
 - Two types of power distribution systems (tree and linear) were successfully tested at the STF-1.
 - One MBK (Multi-Beam Klystron) and a bouncer type modulator will be ordered soon by the recent approval of the Japanese supplemental budget.
 - R&D plans for ACD are under way. Studies for DRFS klystron and power supply design and cost are on going by Toshiba. Circular waveguide for klystron cluster scheme is also under investigation. KEK staffs will visit SLAC next month to see the R&D activities on Marx generator.
 - A. Yamamoto will make contact with S. Fukuda and C. Adolphsen concerning the comparison of pros and

cons between the two schemes based on advice and question on the priority given by M. Harrison and M. Ross.

3) AAP Review for SCRF Session (A. Yamamoto)

- Context for SCRF given by AAP
- (1) What is the path to finalizing the gradient choice? => (S0)
 - Current experimental status
 - Established standards
 - Extrapolation of results
 - Time limitations
 - Decision process
 - Role of plug compatibility in this process
- (2) What is the path towards industrialization? => (S1~S2)
 - Current Experimental status
 - Established standards
 - Extrapolation of results
 - Internationalization of efforts
 - Outline tendering process
 - Role of plug compatibility
- (3) Lessons expected from system tests => (S2)
 - Operational limitation of the ILC cavities
 - FLASH
 - STF
 - NML

- Experience and characterization of implication for ILC
- Time lines
- Benefits

● Outline of SCRF presentation

Session 1 (April 19, AM)

10:00 Introduction by PM (A. Yamamoto)

10:15 [Cavity Field Gradient (S0)]

Improvement of gradient with understanding of behavior (L. Lilje)

Process for field gradient re-optimization (A. Yamamoto)

- Number of statistics and definition of the statistics

11:00 [Cavity and Cryomodule Industrialization (S1)]

Cavity Integration and Cryomodule Assembly

- S1 and S1-global Plan (N. Ohuchi)

R&D Efforts for mass production

- Plug compatibility of cavity and cryomodule (H. Hayano)

Session 2 (April. 19, PM)

14:00 [Test Facilities for SCRF with Beam Acceleration (S2)]

FLASH at DESY (J. Carwardine) => Needs adjustment with other session

STF at KEK (H. Hayano)

NML at FNAL (M. Champion)

15:00 Reserved for further presentations

Cryogenics (T. Peterson)

HTRF (S. Fukuda)

ML Integration (C. Adolphsen)

● Preparation of the Documents

GLs are requested to supply reports till the end of February. Templates will be sent by A. Yamamoto soon.

4) Plug-compatibility document (A. Yamamoto)

- Appendices should be updated in a uniform manner.
- Improvements on functional and envelope parameters
 - Cavity Integration (H. Hayano)
 - Cryomodule (N. Ohuchi)
 - HTRF (S. Fukuda)

- MLI; Quadrupole package (magnet and monitor) (C. Adolphsen)

5) Presentation File for Cavity Manufacturer Visit (A. Yamamoto)

- Presentation file, which is prepared for informing cavity manufactures our TD-Phase R&D plan and activities together with plug-compatible conditions when PMs visit cavity manufacturing companies, was presented.
- S. Mishra commented that the Indian R&D activities should be included taking into account the recent growing effort in Indian laboratories.
- T. Peterson indicated the necessity for revising the resource tables of the TD-Phase R&D Plan document, since a drastic situation change might be expected by the recent approval of economic stimulus bill. >> Akira Yamamoto will discuss more with Fermilab members during his visit to Fermilab on Feb. 24 and 25.

6) SCRF Meeting Schedule

- Next SCRF WebEx meeting: March 18, 14:00- GMT.
- GDE meeting and AAP (interim) review in Tsukuba: April 17 – 21, 2009.
- We would like to remind everybody that the new deadline of the early registration is February 28. Those who plan to attend the meeting, please go to the web page <http://tilc09.kek.jp/registration.php>. Those who need visa to Japan, please visit the site <http://tilc09.kek.jp/visa.php>.