

Draft: Minutes of ML-SCRF Technology Meeting (081001)

Date & Time:

13:00-14:10 GMT, October 1, 2008, using WebEx.

Participants:

L. Lilje, N. Ohuchi, C. Adolphsen, A. Yamamoto, M. Ross, N. Walker, J. Kerby, E. Paterson, N. Toge, M. Champion, B. Rimmer, T. Shidara

Presentation files are available at the following Indico site;

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=3053>

1) Report from PMs (A. Yamamoto)

- EC meeting at KEK (September 4 – 6)

Plan for S2 at KEK (STF-2) was discussed. Two-stages may be more realistic to manage “High Pressure Code” constraints in Japan. Plug-compatibility has been further discussed among PMs after EC.

- JLab visit (September 11, 12)

GDE director visited JLab and met the new director, Dr. Montgomery. Further cooperation was discussed; long term basic R&D on such as large grain cavity, ~~///~~ cryogenics and cryomodule design.

- Project Advisory Committee (PAC) under ILCSC in Paris (October 19 and 20)

Project management will be reviewed. SCRF R&D progress and plan will be presented by A. Yamamoto.

Prior to this meeting, PMs need to have discussions with Accelerator Advisory Panel (AAP), especially on “Plug-compatibility”, as well as “High gradient (S0)” and Acc system test plan (S2).

- Need to prepare for the LCWS Chicago meeting (November 17-20)

2) Brief Report from GLs

- Cavity (L. Lilje)

Regional update for Europe, US and Asia (by N. Toge) was presented. Combined data of temperature mapping and optical inspection have revealed defects in all cases. TTC Meeting will be used for compiling all available data; Exact quench location (weld, heat-affected zone or else, stiffening rings), Size of defect.

- Cryomodule (N. Ohuchi)

The S1-Global cryomodule design is in progress including interface area. The general design (3D - data) has been sent to INFN. The contact persons for this project should be nominated. (Assigned as FNAL - M. Champion, DESY - L. Lilje, and KEK - N. Ohuchi)

3) Discussions on plug-compatibility

- SCRF Plug-Compatibility- focusing on cavity package – (A. Yamamoto)

- We need flexibility to continue and encourage R&D efforts in order to improve the “cavity gradient” performance in the extended R&D phase. The plug-compatible conditions are inevitably required for various efforts to be productive and to be combined. We are aiming for global cooperation of the ILC SCRF technology with this plug-compatibility, and scoping smooth extension to the ILC construction/production phase, keeping in mind multiple participation and industrial competition.
- Although the cryomodule R&D status might be ready for “system engineering”, we need to establish unified interface conditions; intending a nearly identical engineering design, but adapting each regional industrial constraints, taking into account the study of ” High Pressure Code”.
- Boundary Conditions of cavity plug-compatibility: One cavity-package is replaceable with other cavity even in one cryomodule. Cavity package design needs to be optimized for easiest, best reliable assembly process during the installation into the cryomodule. The cavity-package (which comprises 9-cell cavity, end-structure (coupler, HOM, etc), He-vessel, tuner, and interface to cryogenics line) is defined by the unit to be sealed-off in delivery to the site of ILC cryomodule assembly.
- This plug-compatibility issue will be discussed with AAP and reviewed by PAC in October, and the consensus will be established during the Chicago LCWS08 meeting in November.
- Cavity Plug Compatibility (J. Kerby)
- We are technically looking at the possibility of defining a common set of interfaces to be used on cavities during the development phase, which allows for technical variants in designs with minimal disruption of other components. Rev 0 draft document has been circulated previously, but it is just a starting point since there are multiple differences for the moment and there is much work to do to make this converge.

- Issues (further work needed): Cavity mounting point location (vertical /longitudinal), tuner motors, using a LS (long structure) in a cryomodule set up for SS (short structure) type cavities, helium return pipe (included or not), and antenna (needs to be included).

4) Discussions on ILC Chicago meeting agenda (C. Adolphsen and H. Hayano)

- WG Charge – 21 hours in total

Review current status of global ILC R&D, future plans and activities of test facilities. Identify and prioritize critical R&D milestones for TDP-1 and beyond. Promote and improve collaboration between groups working on ILC related R&D.

- ML Topics (1) – 9 hours

Progress on achieving gradient (S0), Status of Facilities and Horiz/CM testing (S1/S2), Toward Plug Compatibility, Cryomodule Design.

- ML Topics (2) - HLRF/LLRF – 6 hours

XFEL HLRF test results, Status of alternatives (Marx, SBK, PDS), Klystron Cluster Concept, LLRF measurements at FLASH, Discussion with CFS on water cooling and cluster approach.

- ML Topics (3) – 4 hours

Quad Package, Beam Dynamics and Wakefields, RTML.

- ML Topics (4)– 2 hours

Preparation for AAP, Preparation for ILC08 closeout / overflow.

5) SCRF meeting schedule

- Next SCRF WebEx meeting: October 29.
- LCWS-08, GDE meeting in Chicago: November 17 – 21.
- GDE meeting and AAP (interim) review in Tsukuba: April 17 – 21, 2009.