

PM report for the November 2008

With this issue of the Technical Design Phase Monthly Report, you will find summary notes for the Group's monthly meetings (Main Linac Technology – Superconducting RF, CFS and Global Systems; There was no monthly meeting for Accelerator Systems in November), and a report from the Cost and Schedule Group (Peter Garbincius). These meeting notes show progress made and plans for upcoming meetings and work.

This monthly report complements the weekly ILC Newline. Please see the '[Director's Corner](#)' for important planning and policy communication.

Project Managers are now preparing for the AAP (Accelerator Advisory Panel) interim review of next April. Following the discussions during the LCWS08 in Chicago and taking into account the current status of the global ILC R&D and future plans, the R&D plan documents will be updated. Documents of the "Minimum Machine" concept and "Plug-Compatible" design for global cooperation will be exploited intensively during this process.

Akira Yamamoto for Project Managers; Marc Ross and Nick Walker
November 2008

Draft: Minutes of ML-SCRF Technology Meeting (081126)

Date & Time:

14:00-15:08 GMT, November 26, 2008, using WebEx.

Participants:

H. Hayano, N. Ohuchi, T. Peterson, A. Yamamoto, N. Walker, M. Ross, J. Carwardine, J. Kerby, N. Toge, S. Prat, R. Kephart, R. Rimmer, T. Shidara

Presentation files are available at the following Indico site;

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=3162>

1) PM report (M. Ross, A. Yamamoto)

- There are documents to be issued; R&D Plan (reviewed by FALC, January, 2009), Minimum Machine Design, Plug-compatibility, S1-Global. PMs need inputs from GLs.
- PMs are planning to visit laboratories; KEK, China (IHEP, PU, C. U), INFN, Spain, DESY and also industries (cavity fabricators: ACCEL, ZANON, AES, MHI, HITACHI,).
- Preparation for AAP review is under discussion.

2) Plug-compatibility document (PMs/A. Yamamoto)

- Explained and discussed in the LCWS08 SCRF WG session. Document was placed in the Indico page: <http://ilcagenda.linearcollider.org/getFile.py/access?contribId=382&sessionId=12&resId=0&materialId=paper&confId=2628>
- Next step; Waiting for comments from EC and others. Update the draft and it will be more publically distributed, including AAP and PAC.

3) S1 Global program and necessary agreements (A. Yamamoto)

- Discussed in EC and advised to revise the title to be "Agreement" instead of "MOU", as a more practical level of the document. Presented in the ILC08 SCRF session. There are various spectra and it may not be settled within a few months.
<http://ilcagenda.linearcollider.org/getFile.py/access?contribId=380&sessionId=12&resId=0&materialId=paper&confId=2628>
- Further plan; Proposed to issue this document as a PM document/guideline and ask KEK to make bilateral agreements.

4) Summary of the LCWS08 SCRF discussion (H. Hayano)

- Presentations and discussions at the LCWS08 SCRF sessions were summarized. See the presentation file: <http://ilcagenda.linearcollider.org/materialDisplay.py?contribId=26&sessionId=3&materialId=slides&confId=2628>
- Major discussions were on (1) Field Gradient limitation by Pits and Bumps; more data points (inspection picture & T-map), good correlation between T-map & optical inspection and development of repair tools, (2) Plug compatibilities; discussions on tuner, vessel support position and input coupler port diameter.

5) Technical Discussions

- S1-global program (A. Yamamoto)

- The Cryomodule-C design for the S1-Global program, established between INFN and KEK by the end of September, shall be kept (revised again from collaboration because of the practical level of program).

- Cavity envelope and the plug-compatible interface to be confirmed (J. Kerby/ A. Yamamoto)

- Cavity envelope and interface issues were discussed using drawings prepared by J. Kerby and D. Mitchell. Z-directions for cavity and cryomodule coordinate systems are different with each other. Need specific meetings to settle these issues (tuner and cavity support location, coupler distance, sealing, coordinate systems, coupler flange interfaces).

<http://ilcagenda.linearcollider.org/getFile.py/access?contribId=2&resId=0&materialId=0&confId=3162>

<http://ilcagenda.linearcollider.org/materialDisplay.py?contribId=2&materialId=slides&confId=3162>

- Input-coupler cold-end flange (40 or 60 mm?)

- Pros and Cons for 40/60 mm input-coupler cold-end flanges were discussed. Need homework to prepare comparison tables from each region (Asia; H. Hayano, N. Ohuchi, Europe; S. Prat, America; J. Kerby, C.

Adolphsen). Microwave design for end cavities will be affected by this choice. And also need specific meetings to settle this issue.

6) SCRF meeting schedule

- Next SCRF WebEx meeting: Jan. 21, 14:00- GMT. There will be no SCRF WebEx meeting in December because of the holyday season.
- GDE meeting and AAP (interim) review in Tsukuba: April 17 – 21, 2009.

CFS & Global Systems Webex Meeting 5 November, 2008

Agenda

PM Report (M Ross)
CFS (V. Kuchler, J Osborne, A Enomoto)
LLRF: FLASH 9mA study (J. Carwardine)

Attendees

E. Paterson, J. Osborne, V. Kuchler, P. Garbincius, J. Carwardine, E. Elsen, M. Ross, T. Himel, T. Shudara, N. Toge, A. Enomoto

Meeting Summary

PM Report (Marc)

ILC08:

- The opening plenary session will include summaries from accelerator and detector, Project Managers, XFEL, Project X, and the CLIC-ILC collaboration.
- Closing plenary will includes summary reports from all the parallel sessions
- Marc asked that the conveners of the parallel sessions put their session agendas into Indico.

PAC Review

- A report is due soon. Presentations are posted on the ilcagenda server.
- There was a generally positive response from the review committee, especially regarding
 - Plug compatibility
 - The importance of developing an ILC Project Implementation Plan.
- The Minimum Machine program was well received but that more substantial cost reductions should be pursued. There was also a strong statement that the physics performance should be maintained.
- The committee looks forward to seeing a schedule for meeting the S2 goals.

PM Visit to India

- Marc and Akira visited BARC after the Tesla Technology Collaboration meeting in Delhi.
- BARC is just getting started with accelerator technology, but there is a strong interest in scientific and technology exchange programs.

Positron Workshop at Daresbury

- There were 25 attendees at the workshop and others joined via Webex.
- There was an excellent summary presentation that will be posted on the workshop website.

EDMS

- Lars Hagge hosted an excellent session at the Positron Workshop
- EDMS is now well integrated into the day-to-day business of XFEL.
- Marc wants all CFS drawings and 3D cad models developed for ILC to be uploaded into EDMS.

Collaboration with JINR Dubna

- Marc is very positive about progress with the collaboration.
- Core drilling is ongoing, and results are due to be presented at ILC08.
- Vic has received a spreadsheet of information about the core drilling, but it requires some interpretation.
- Marc and Brian Foster have been invited to give a presentation at the Russian Academy meeting on Nuclear Physics in December.

AAP Review

- The review will be largely technical, and will concentrate on TD Phase-I
- Will be hosted by KEK in Skuba at the TIL08 meeting
- Key efforts preparing for the review rest with the Technical Area Group Leaders
- A coarse schedule has been developed and posted.

CFS (Vic, John O)

Report from the CLIC Workshop

- The ILC CFS team participated in the "Technical Issues" working group. Topics covered included:
 - Module Layout and Support
 - Magnet Stabilization and Test Stands
 - Tunnel layout and Cross Section
 - Tunnel Cooling and Ventilation
 - Safety Issues for Underground Structures
- There was also discussion on the topic of a possible common CLIC/ILC Note on Tunnel Safety.

Planning for ILC08

- The CFS working session agendas have been finalized. There will be sessions on:
 - Process Cooling Water
 - Klystron Cluster Design (common session with HLRF)
 - ILC Collaborative efforts
 - Minimum Machine Design (common session with AS groups)
 - Alternative site and tunnel configurations

Update on Dubna/GSPI

- There has been little direct contact with the JINR representatives.

- The schedule of work is unknown to the CFS group, but a status report is expected at ILC08.
- The Dubna site cost estimate still needs work and needs to be supported by cost estimate backup materials.

LLRF (John C)

TTF/FLASH 9mA studies

- DESY/FLASH personnel have been exploring options for repairing the vacuum leak in the beam dump line. Meanwhile, beam operation at FLASH is limited to ~30nC/pulse which severely restricts the 9mA program.
- Improvements in beam diagnostics and machine protection will be pre-requisites for running future high power 9mA studies.
- The best-case scenario is that the leak would be repaired in the April/May 2009 timeframe, but this would require scheduling a special shutdown of around 3 weeks. FLASH will now shut down in September 2009 for a major upgrade (postponed at Users' requests from May 2009).
- Studies requests have been submitted for 9mA-related studies during the January 2009 machine studies period for low-power tests involving LLRF and machine characterization.

Cost Management (Peter)

- Triad has begun work on scoping out the Cost Management Tool.
- Peter has held several meetings with Triad, that have included participation from Tom Himel, Lars Hagge, and John Carwardine.

The next CFS & Global Systems meeting will be held on December 3rd.

John Carwardine

Monthly Report (1nov-30nov08) for Peter H. Garbincius

PHG_monthly_report_30nov08.doc

distributed 29nov08 to: Marc Ross, Tetsuo Shidara, John Carwardine, Wilhelm Bialowons, Frank Lehner

Activities included continued progress on the Triad development of the ILC Cost Estimating Tool and interaction with the CLIC-ILC Cost & Schedule Working Group.

Triad's ILC Cost Estimating Tool (ICET):

In addition to a WEBEX meeting on November 11, Triad's Spencer Curtis and Larry Lew presented a status report on the Estimating Tool to the ILC Executive Committee and the Cost Management Group at LCWS08 at University of Illinois Chicago on November 17. The CLIC Cost & Schedule Working Group members also participated.

Triad explained the system architecture and gave examples of the WBS/Scope Configuration File and Estimate Modules, showing the network linkages between the WBS configuration and multiple cascaded layers of the Estimate Modules. The Triad presentation materials were posted on EDMS as working versions within the ILC_Cost_Database_Team.

Two structural issues emerged at this meeting: First: the tool should show more emphasis on the DataBase, in that the input data EXCEL files should flow from EDMS => DB => ICET (rather than ICET processing the input spreadsheets and posting processed spreadsheets in DB). Similarly, reports generated by ICET should be posted both in DB and in EDMS. Second: ILC must decide whether we want "what-if" scenario studies to be driven by new EXCEL spreadsheets from EDMS or by modifications to the DB.

The LCWS08/UIC meeting also included the first face-to-face meeting with Lars Hagge on ILC-EDMS. Triad had previously sent "Use Case" sheets to Lars describing the interactions between ICET and EDMS. Lars also promised to send Triad the Application Programming Interface documentation. However at the end of November, Lars stated that the documentation needed some technical clarification and examples before sending to Triad.

The next WEBEX with Triad is scheduled for Tuesday, December 2 at 1400 GMT.

CLIC-ILC Cost & Schedule Working Group:

There were a set of meetings at LCWS08 between Hans Braun and Germana Riddone of CLIC and John Carwardine, Tetsuo Shidara, Peter Garbincius, and Frank Lehner of ILC.

Peter gave a guided tour of the RDR Cost Estimate for the Beam Delivery System which was previously given to the CLIC Cost & Schedule people. CLIC presented their updated Cost Estimate Template which has been reduced to two energy configurations, 3 TeV and an intermediate 500 GeV for direct comparison with the ILC estimates. CLIC expects to have a home-grown cost estimating tool available

for initial testing in the second quarter of 2009 and the final version by the end of 2009. CLIC also showed their WBS structure which goes only to Level 4, where Levels 1: Main Beam, Drive Beam, Interaction Regions, and CE & Services, and Levels 2: include the analogy of ILC Area Systems and the CF&S Disciplines, and Levels 3 and Levels 4 are still fairly high level roll-ups compared to the ILC RDR Estimate. So there is a substantial difference in the structure and the level of detailed cost estimating information compiled by CLIC and ILC. A major goal will be to understand and communicate unavoidable differences in the methodologies used for these two projects.

We also realized a need to describe and document the cost risk assessment methodologies used by both projects. Peter, Hans, Germana, and Frank agreed to work on this common document.

Finally, we agreed to have a CLIC-ILC Cost & Schedule Working Group WEBEX meeting on the 2nd Thursday of each month at 1400 GMT.

Peter