

5/27/09

Physics and Experiment Board Meeting

May 26, 2009 1400 GMT

Minutes (prepared by J. Brau)

Present via Webex: Akiya Miyamoto, Catherine Clerc, Francois Richard, G.P. Yeh, Harry Weerts, Hitoshi Yamamoto, Jim Brau, John Hauptman, John Jaros, Karsten Buesser, Marcel Demarteau, Sakue Yamada, Ties Behnke, Yasuhiro Sugimoto

Absent: Michael Peskin.

PAC

Sakue described the ILC Project Advisory Committee (PAC) meeting in Vancouver, May 9-10. In addition to his overall status report, there were reports by four common task working groups. Sakue reported on the discussions, the chairperson's remarks and the draft comments he recently received. (The final minutes were delivered after the PEB meeting, and were not modified much from the draft version.) There were statements for both the accelerator and the physics and detector efforts, and comments specifically for the physics and detector effort: They are summarized in a somewhat shortened form as below.

Comments for both accelerator and physics and detector efforts:

- 1) The PAC very much appreciated the efforts of the accelerator and detector leadership and the speakers for their presentations to the committee.
- 2) The PAC noted that no preparatory documents were available prior to the meeting; they request that material be provided two weeks in advance for future meetings.
- 3) The PAC sees satisfactory progress is being made for the TDR in 2012 - at some time in future ILCSC guidance will be needed for efforts beyond that date.

Comments specific to the physics and detector efforts:

- 1) The PAC was pleased by the progress on the experimental program – it noted the good work of all the common task groups.
- 2) The PAC was impressed with the current status of the LOI process. The submissions were on time and provided a large amount of information on the detectors. The IDAG was well prepared to review the LOIs, and the validation process is moving swiftly. A plan needs to be formulated to arrive at detailed conceptual designs by 2012.
- 3) The push-pull work is very important. The PAC encourages even more discussion with the accelerator physicists.
- 4) The Detector R&D Common Task Working Group was commended for its work. It is important that best use be made of the less than ideal level of funding and that duplication of effort be avoided.
- 5) The PAC is appreciative of the Physics Common Task Group's study of the gamma-gamma collider as a precursor to the ILC.

6) Work on ILC physics and detectors and feasibility is very important for maintaining the enthusiasm of the physics community.

Sakue notes that the PAC would like copies of the talks two weeks in advance of the next meeting. Another key recommendation is that the plan for the period between validation and 2012 be worked out.

Discussion with ILCSC Chair Enzo Iarocci

During the Vancouver PAC meeting, Enzo Iarocci expressed the opinion that it is important to work out the details of what will be achieved on the detectors by 2012, and to find an appropriate title for the deliverable. A possibility for the title is “Detailed Baseline Designs” of the detectors. Enzo requested that the plan be prepared soon, and presented at the next ILCSC meeting in August. Sakue proposed to the Board that each validated detector would prepare their own “Detailed Baseline Design” document. This document would specify a baseline, to the extent it is possible, but could include options. This proposal generated a period of discussion by the Board on what the goal for this period, specifically how much specifying of a specific baseline is necessary.

Work Plan After Validation Until 2012

Sakue described what he thought the work plan up to 2012 should accomplish. He listed six requirements. First, the R&D on critical components should be completed. Where there are options of interest, at least one of the options should be verified as feasible, with demonstration of the required performance. Second, the detector designs should specify a unique baseline for doing detailed simulations. This does not preclude options, but is the minimum that must be achieved. Third, a complete description of the mechanical integration should be developed, including an understanding of services, support, cables, hall design, and the push-pull design. Fourth, the benchmark simulations should be repeated with more realistic detectors and more realistic backgrounds. Fifth, the 1 TeV performance needs further study. Finally, a more realistic cost estimate needs to be developed based on the understanding of three years from now. Of all of this, the most important is to be confident of the performance of the detector.

Sakue’s description generated discussion on the purpose of a baseline, of the desirability of maintaining options, and of the possible alternative definitions of the work plan. Some of the issues that were raised included:

One can only compare R&D results in 2012.

Different funding agencies have different views on the detector R&D.

(ILC detectors R&D, generic detector R&D, LOI work, etc.)

Many people pointed out that the urgency of the R&D, assuming the true timeframe is very long; how do we convince others of the urgency?

Some prioritization of detector R&D, specifying what is critical by 2012, would be helpful.

Progress on push-pull related issues requires real engineering.
What physics channels should be studied for 1 TeV performance? This is an issue the physics group and the software group to consider and define.

Report from each common task group

MDI Common Task Working Group (Karsten Buesser)

Karsten reported on the interface document, and its limitations.

Engineering Tools Common Task Working Group (Catherine Clerc)

Catherine reported that there are few developments.

R&D Common Task Working Group (Marcel Demarteau)

The PAC wants to see some type of prioritization of R&D. The group is working on defining a path to ensure that R&D results by 2012 are adequate to defend the physics goals. Hitoshi cautioned that it is important to do this in a way that does not turn away people. Marcel said he thought the ILCSC is willing to go to bat for the R&D needs if there is a defensible strategy. The group hopes to have something like a roadmap by the Albuquerque meeting. It will be brought to this board for review and approval.

There will be a test beam workshop at Orsay in November.

Software Tools Common Task Working Group (Akiya Miyamoto)

Software experts have been busy with reanalysis of physics benchmark studies in response to the requests from the IDAG.

Also, a common web site is being updated to provide broader access to the software tools of all detector design groups.

Physics Common Task Working Group

No report.

IDAG Meeting in Paris

The IDAG will meet in Paris June 19-21. Each of the LoI groups has been invited to send 2 representatives for the first day (a third representative is also possible). A set of questions were sent to each LoI group, and responses are due back to the IDAG by June 12.

CLIC-ILC Meeting at CERN June 11-12

Mark Thomson will represent the Research Directorate, as neither Sakue nor Francois is able to attend. If an additional representative is proposed, it is possible to join Mark in the discussions.

Next Teleconference

Sakue will contact board members to set the next meeting around the last Tuesday of June.