

Research Director's Report

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Common task groups are underway

The detector management scheme began to move in full size since the 2008 Linear Collider Workshop (LCWS08) in Chicago. The central decision-making mechanism is the Physics and Experiment Board consisting of the Executive Board members (namely, the research director and the regional contacts), representatives of the Letter of Intent (LOI) groups and the conveners of five common task groups (names of the members can be found [here](#)). Following the face-to-face meeting at LCWS08 and in Warsaw last June, the monthly meeting of the board began via web conference system on 9 December. It was attended by all the members and was a very fruitful meeting. The main agenda items were reports from the common task groups on their initial activities. These groups are the key bodies of the detector activity, working horizontally with the concept groups. Most of the common task groups also met during the LCWS08 in Chicago for the first time,

except the machine detector interface (MDI) group which has been active since April, to discuss their starting activities. During this Physics and Experiment Board meeting, the status and plan of each group was presented by its convener.

Karsten B user described that the MDI group is now concentrating to finalise the minimal requirement document following the mutual agreement with the beam delivery system (BDS) on the Global Design Effort (GDE) side at LCWS08 regarding various aspects of the machine-detector interface issues. When the draft is finished, it will be finalised by the MDI group, with consultation of the Physics and Experiment Board, and then be distributed to the LOI groups.

Catherine Clerc explained how the Engineering Tools group is trying to get organised. The group has made contact with both the BDS group and the MDI group. While the BDS group is most closely linked to the detectors, it will also be helpful for this group to link to a more general counter group of the GDE to coordinate the design tools. This way, the same or compatible technologies will be employed. Discussions have already begun with the GDE for such a mechanism.

Marcel Demarteau reported the Detector R&D group's first discussions about its own charge and plans at this stage. The group wishes to help nurture the technologies needed to design and build the future detectors to advance the goals of a linear collider. To this end, the group invites the LOI groups and the horizontal R&D collaborations to work for various measures for the final goal. They consider that the detector R&D will play a critical role after the submission of LOIs, of which the R&D section may provide good overviews and a starting point of their activities. Such ideas were welcome since they are enriching plans along the original purpose of the group. Regarding a request for a survey of worldwide R&D projects, the group wished to proceed piece by piece, because of the few available resources which would not allow big step.

Akiya Miyamoto detailed the issues that the Software Panel group faces. They are related with the benchmark simulations the LOI groups are tackling now. In some cases, the benchmark document does not define the conditions for simulation precisely enough, and there are different interpretations among the LOI groups. He listed examples and resulting differences. The group may arrange an agreement, where possible, for common conditions. But, since time is already short, there can be somewhat non-uniform conditions used by different LOI groups for a few cases. In such cases, clear descriptions of the conditions are desirable.

Michael Peskin talked about the concrete programmes of the Physics Panel group which were planned during the first meeting. They try to study cases which the Large Hadron Collider may bring relatively easily after one year of operation or so. The group will prepare briefing papers, based on literature, on six topics: light-SUSY particle, gauge-mediated SUSY boson scenarios, 2-TeV Z-prime particle decaying into muon pairs, 1-TeV resonance decaying into top pairs, 200-GeV Higgs particle decaying into Z-bosons and 3-TeV black holes.

These papers will be ready next spring. In each study, the best suited energy of the collider will be identified. He also commented that the studies aimed to answer the inquiry by the International Linear Collider Steering Committee (ILCSC) regarding the physics case of a gamma-gamma collider as a precursor of the ILC. Inviting a small number of experts of the field a report will be drafted and be discussed in the group next January. It will be combined with a corresponding report from the GDE on technology and cost to be delivered to ILCSC for their further consideration.

Considering that most common task groups began working about a month ago, there were already many programmes, progress and issues reported. These common task groups work across the LOI groups and in some cases inviting physicists from a wider community. The reported enthusiastic start-up of their activities is extremely promising.

-- *Sakue Yamada*