

Research Director's Report

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Validation made of the Letters of Intent

ILC physics and detector community took a big step in August. The International Detector Advisory Group (IDAG) gave me a detailed report of their examination for the validation of the three Letters of Intents (LOIs) on 17 August. I wish to thank the chair and the members of IDAG for their extremely intensive work and devotion in their precise review of a large amount of material in a relatively short period after receiving the LOIs in March. The report describes examinations of all detector components and the evaluation of each detector as an integrated system with respect to the performance for benchmark reactions. They also inspected the machine detector interface under the push-pull requirement. The conclusion is that the International Large Detector concept (ILD) and the Silicon Detector Design Study concept (SiD) are recommended for validation as complementary detectors to

go on with detailed design and that the dual-readout calorimeter technology is encouraged to be further developed. IDAG thanked all the groups for their intensive studies and work in preparing the LOIs and in answering their additional questions. I join this IDAG acknowledgment, knowing the tremendous efforts made by each group. IDAG chair Michel Davier will give a detailed presentation of the evaluation on the first day of the Linear Collider Workshop of the Americas (ALCPG) and Global Design Effort meeting, at Albuquerque, US.

The IDAG report was given timely as the International Linear Collider Steering Committee (ILCSC) meeting was held in Hamburg a few days later, during the Lepton Photon Symposium 09. ILCSC endorsed the IDAG recommendation. This brings us on the new stage of the post-validation phase.

Each detector group will reconsider its plans to complete a detailed baseline design of its detector by 2012. Both have initiated this process, but the increasing needed efforts now demand a more thorough planning, including the estimates of the resources required to complete the work. The groups are now developing these plans, with milestones and resource estimates for the detector R&D and the physics studies along, following the general work plan we have made ([read also my last column](#)). Each group will meet in Albuquerque, and we expect to see progress on this matter. There are uncertainties regarding what resources can realistically be found, so a plan with clear outlines will be helpful in securing the support. These plans will provide the basis for the request to funding agencies. I will describe the plan together with other progress of the detector groups in my presentation to the ILC Project Advisory Committee (PAC) in Pohang, Korea, in early November.

Following the validation we began to reorganise our Physics and Experiment Board and the five common task groups. Most common task groups need to be reinforced by adding more members from the validated groups or even more widely. The Machine Detector Interface group works as an important channel where the two detector groups communicate with the accelerator team. A more intense interaction with the accelerator team will be required regarding the integration into the beam interaction region and the design of push-pull scheme. For these matters, the two detector groups will need more discussions between themselves too. The Engineering Tools group will be reinforced with more members and continue



At their recent meeting in Hamburg, the ILCSC approved the validation proposals for ILD and SiD. Image: DESY

investigating common engineering tools for the next phase of designing the detectors. The Detector R&D group will increase its crucial role in this new stage in order for the detector groups to effectively conduct their detector R&D cooperating with various detector collaborations. The Software group has prepared itself to meet the requirement in the new stage. They are surveying what tools or data are needed. The Physics group is expected to review the benchmark reactions which were studied in the LOIs. New reactions or backgrounds may be needed or better suited for the further studies of a detailed baseline design. When new benchmarks are introduced by the Physics group, the Software group will provide the necessary support for the detector groups to study them.

These activities will be further monitored by IDAG through 2012. IDAG will follow the progress of the validated groups and will give me advice so that the groups accomplish the detailed baseline designs of their intended detectors on schedule. We are now considering how to organise this process. It should enable IDAG to conduct an effective and efficient examination and to give useful and helpful advice to the detector groups.

-- *Sakue Yamada*