

Research Director's Report

16 April 2009

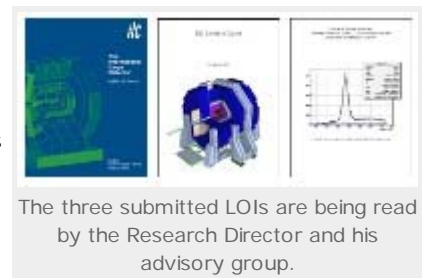


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Letters of Intent were submitted

The three ILC detector concept groups, ILD, SiD and 4th, submitted their Letters of Intent (LOIs) by the due date, 31 March. Having observed the intense efforts during the past few months, I sincerely congratulate these groups for having completed the document in time. Tremendous amount of work and discussions have been done successfully since their expressions of interest about one year ago. These documents are made public already and can be obtained through the [ILC detector web page](#). Each group has a main LOI, which had to be limited in length, and a set of supporting documents which describe more details behind the LOI. A large number of physicists of universities and laboratories signed the LOIs, which shows the vast interest and contribution of many people in the entire community over the world.

The International Detector Advisory Group (IDAG) was waiting for the documents, while preparing themselves, and has started immediately its validation process by looking into the submitted materials. Soon IDAG members will listen to the open presentations of the LOIs scheduled at [TILCO9](#) in Tsukuba on the first day. They will also meet with individual groups on the second day. What will happen during this workshop and what the validation means were introduced more in depth by Hitoshi Yamamoto in [this column](#) last month.



At the LCWS08 meeting in Chicago last November, [IDAG organised itself](#) in such a way that every member would survey the LOI of one particular group and also the contents of all the groups regarding one particular field of the following four categories: tracking, calorimetry, machine-detector interface issues and benchmark performances. With this matrix of horizontal and vertical assignments of tasks, IDAG will examine the LOIs in a thorough way. However, the time between the submission of LOIs and the coming TILCO9 is very short for IDAG to digest all the details of each LOI. Thus scrutinising the documents will continue after TILCO9. IDAG plans to have its dedicated meeting in about two months, on 22 and 23 June, in Paris where representative experts of each LOI group will be invited for further discussions. Intense communication between IDAG and all the groups will be kept between these two meetings and even further through summer until IDAG collects all necessary information for their conclusion.

IDAG plans to announce its result of validation at the [next regional meeting of Americas](#), the American Linear Collider Physics Group (ALCPG) organises jointly with Global Design Effort, to be held at the University of New Mexico, in Albuquerque, from 29 September to 3 October 2009. Following the conclusion of IDAG, the final validation will be reported to the International Linear Collider Steering Committee (ILCSC).

In the meantime the LOI groups are expected to push forward their detector R&D programmes and further investigations of physics according to the plan they described in the LOIs. The groups, which are validated this autumn, will continue their efforts to crystallise the proposed concepts into more refined detector designs. It will be a few years' work to be finished in 2012, at the end of the Technical Design Phase II. At this point the GDE plans to complete its ILC design to be proposed to governments. The validated detector designs will be included in this proposal to show that intended physics can be pursued at the designed ILC. For this final end, the LOI groups need to make the choice of technologies, if not done yet, and to show feasibility of all the critical components for their intended performance. IDAG will keep watching the progress of the groups until the end of the design period. Since it is a long procedure, we plan an interim report of the detector activities in 2010 in which the status of detector R&D of the validated groups will be included. Recommended by the [Project Advisory](#)

[Committee \(PAC\)](#), ILCSC suggests to me that this report should be a written one. Although the schedule is rather tight, it will be useful for the detector groups to check their progress at an early stage when there is more time to go.

In order for the LOI groups to complete the detector design with the planned schedule, financial support for them is essential. The validation process itself is not linked directly with funding for R&D projects. It is one of the challenges of the whole LOI process. Nevertheless, I do hope validation helps each group secure or improve their resources for R&D. Validation is a detailed scrutiny of the LOIs regarding their physics purposes, possible technological choices, feasibility and capability. Validated LOIs mean being qualified for these features, and their R&D efforts and studies need to be pursued further. I wish and hope that necessary financial support becomes easier to obtain.

-- *Sakue Yamada*