

IDAG Report

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LCWS08, Nov.16-20 2008, Chicago

History (1)

- Letters of Intent (LOI) called by ILCSC for detectors at ILC, in order to conduct technical design for optimized detectors to be included in the overall project in 2012
- Submitted LOIs have to be 'validated' regarding their performances and feasibility, as well as the capability of the submitting group to conduct detailed technical studies
- ILCSC appointed a Research Director to set up and manage this process, and a committee (IDAG) to advise RD on validation of LOIs and corresponding detector R&D

History (2)

- Feb. 14 2008: IDAG members contacted
- March 6-9: GDE/ACFA (Sendai) informal discussions with a few members
- June 9-12: ECFA (Warsaw) first formal IDAG meeting
- June 24: mandate of IDAG clarified (RD)

IDAG mandate history

- (1) Initially (end 2007): advise RD on ILC experimental program issues, make recommendations to RD on the choice of 2 detectors for the engineering design effort
- (2) ILCSC Feb. 11 2008: 'choice of 2 detectors' replaced by 'validation of LOIs', LOI deadline extended to March 2009, validated detector groups to participate in the GDE technical design proposal to be completed in 2012
- (3) New mandate incorporates input and discussions in IDAG first meeting in Warsaw
- (4) Following recommendation from PAC, ILCSC Oct. 31 2008: IDAG mandate extended to 2012 to follow the technical design phase of the validated detectors in coordination with GDE

Final IDAG Mandate for LOI Validation

- Are the physics aims of the detector convincing for an experiment at ILC?
- Is the detector concept suited and powerful enough for the desired physics aims and the expected accelerator environment?
- Do the mechanism for push-pull operation and related alignment and calibration methods enable the desired switching process
- Is the detector feasible? Namely, is the required R&D for the selected technologies advancing fast enough to be completed during the design phase?
- Are the estimated cost and the way to obtain it reasonable at the time of the LOI
- Is the group powerful enough to accomplish the required design work through the technical design phase?

IDAG Membership

• M. Danilov (ITEP, Russia)	exp	GDE
• M. Davier (LAL-Orsay, France)	exp	Chairman
• [A. Djouadi (LPT-Orsay, France)]	th	
• E. Elsen (DESY, Germany)	acc	GDE
• P. Grannis (Stony Brook, US)	exp	
• R. Godbole (IIS, India)	th	
• D. Green (FNAL, US)	exp	
• J. A. Hewett (SLAC, US)	th	
• T. Himel (SLAC, US)	acc	GDE
• D. Karlen (Victoria, Canada)	exp	
• S. K. Kim (SNU, Korea)	exp	
• T. Kobayashi (ICEPP, Japan)	exp	
• W. G. Li (IHEP, China)	exp	
• R. Nickerson (Oxford, UK)	exp	
• S. Palestini (CERN, Italy)	exp	
• N. Toge (KEK, Japan)	acc	GDE

IDAG Time Line 2008

- March 2008: 3 EOIs received (ILD, SiD, 4th)
- June 2008, first IDAG meeting (Warsaw)
 - open presentations
 - separate closed discussions with groups
 - discussion with RD about mandate
- Nov. 2008, second meeting (Chicago)
 - open presentations
 - separate closed discussion with groups
 - set up organization for LOI evaluation

IDAG Time Line 2009

- Preparatory phone meetings
- LOIs due 31 March 2009
- 17-21 April 2009, third IDAG meeting at GDE/ACFA
 - open LOI presentations: detector, benchmarking
 - closed sessions with LOI representatives
- Phone meetings
- Fourth intermediate meeting in Orsay end of June 2009
 - closed sessions with LOI representatives
- September 2009, fifth meeting at ALCPG workshop (America)
 - delivery of validation report

Expected LOI content

- Guidelines given by ILCSC
- More given by RD and IDAG
- About 100 pages + supporting documents
- Detector philosophy, sub-detectors and alternatives
- Evaluation of physics performances based on a common process benchmark list
- Integration issues with accelerator
- Status of a realistic detector model
- Identification of state, plans and timescale for required R&D and technological options
- Preliminary cost estimate
- Structure of group and capacity to carry out the work
- Resources needed as function of time for technical design

Expected LOI contents:

final wording of IDAG additional requests

- (1) Detector optimization: identification of the major parameters which drive the total detector cost and its sensitivity to variations of these parameters.
- (2) Plans for getting the necessary R&D results to transform the design concept into a well-defined detector proposal.
- (3) Conceptual design and implementation of the support structures and the dead zones in the detector simulation.
- (4) Sensitivity of different detector components to machine background in the context of the beam parameter space considered in the RDR.
- (5) Calibration and alignment schemes.
- (6) Estimates of overall size, weight, and requirements for crane coverage and shielding.
- (7) Push-pull ability with respect to technical aspects (assembly areas needed, detector transport and connections, time scale) and maintaining the detector performance for a stable and time-efficient operation.
- (8) A statement about energy coverage, identifying the deterioration of the performance at energies up to 1 TeV and the consequent detector upgrades.

Review Organization

- 'vertical' reviews by subject with one convener
(all projects studied)

Benchmarking

Hewett

Li

Davier

Palestini

Godbole

Grannis

Tracking

Nickerson

Danilov

Elsen

Calorimetry

Green

Karlen

Kobayashi

MDI

Himel

Toge

Kim

Review Organization

- 'vertical' reviews by subject with one convener (all projects studied)
- 'horizontal' reviews by project with one referee (all aspects included)

	Benchmarking		Tracking	Calorimetry	MDI
ILD	<u>Hewett</u>	Li	<u>Nickerson</u>	<u>Green</u>	Himel
SiD	Davier	<u>Palestini</u>	Danilov	Karlen	<u>Toge</u>
4 th	Godbole	<u>Grannis</u>	Elsen	<u>Kobayashi</u>	Kim

Conclusion

IDAG has defined its working procedures and will be ready to evaluate the LOIs as soon as they are submitted.

Interactions between IDAG and LOI groups during evaluation period: points of contacts needed from the groups.

The validation process will be completed in September 2009