International Detector Advisory Group (IDAG) for ILC

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PAC, Oct.19-20 2008, Paris

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 an advisory group (IDAG) to advise RD on validation of LOIs and detector R&D

History (2)

- Feb. 14 2008: letter of RD to proposed IDAG members
- 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’, validation of technical design effort, LOI deadline extended to March 2009, validated detector groups to participate in the GDE technical design proposal of the ILC project to be completed in 2012
- (3) New mandate incorporates input and discussions in IDAG first meeting in Warsaw

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

- 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
- LOIs due end of March 2009
- 17-21 April 2009, third IDAG meeting at GDE/ACFA
- Fourth ‘intermediate’ meeting
- Fall 2009, ‘final’ meeting (?)

Expected LOI contents

- Guidelines given by ILCSC
- More given by RD and IDAG
- Not to exceed 100 pages
- Detector philosophy, sub-detectors and alternatives
- Evaluation of physics performances based on a common process benchmark list
- Integration issues with accelerator, including sensitivity to machine background
- Alignment and calibration methods, compatibility with push-pull
- Status of a realistic detector model with support structures and dead areas
- Preliminary assessment of civil engineering issues (size, weight, hall, support infrastructure, crane coverage, shielding)
- 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
- Detector capabilities and possible upgrades for energies higher than 500 GeV