

ILC Detector

Review of the R&D for Vertex Detector

H. Park (Kyungpook Nat'l Univ.)

On behalf of the ILC Detector R&D Panel

(a Panel of the World-Wide Study Organizing Committee):

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R&D Review

- WWSOC has established the Detector R&D Panel to promote and coordinate detector R&D for the International Linear Collider.
- WWSOC asked the Detector R&D panel to organize global reviews of ongoing detector R&D.
- The R&D review is held joint workshop of WWS+GDE.
- Review panel consists of “invited external experts” + ”regional reps” + ”Detector R&D members”.
 - Tracking (C. Damerell) at ACFA+GDE workshop at Beijing (Feb. 2007)
 - Calorimetry (W. Lohmann) at LCWS+GED workshop at DESY (June 2007)
 - Vertex (H. Park) at ALCPG+GDE workshop at FNAL (Oct. 2007)

- Our responsibility is to work with the R&D collaborations to ensure that the feasibility of their critical goals can be demonstrated by 2010-2012
 - provide “review guidelines for participating groups”
 - review their R&D status and plans and goals
 - communicate with R&D groups and derive a guidance for future R&D
 - write “review report”

Guidance for Reports

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- overall physics-driven performance goals
- track-finding effy.
- impact parameter resolution vs momentum and angular coverage
- design of sensors, modules, and support structures
- readout electronics, cabling, and DAQ system,
- system power dissipation, quantifying the benefits of pulsed power if used
- cooling system
- overall mechanical stability – push-pull implications
- background tolerance, radiation resistance, tolerance of EMI
- overall material budget

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country	group	Topic/Work Package (FTE/equipment)				Totals	
		sensors	electronics	mechanics	alignment	group	country
A	a						
	b						

Vertex Review Committee

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- **External Consultants (9)**

Yasuo Arai (KEK)

Dave Christian (FNAL)

Masashi Hazumi (KEK)

Lenny Spiegel (FNAL)

Simon Kwan (FNAL)

Gerhard Lutz (MPI Munich)

Pavel Rehak (BNL)

Petra Riedler (CERN)

Steve Watts (Manchester U.)

- **Regional Representatives (1+1)**

Tim Bolton (Kansas State U.)

- **ILC R&D Board (1)**

Bill Willis (Columbia Nevis Labs)

- **R&D Panel (2)**

Chris Damerell (RAL)

Hwanbae Park (Kyungpook Nat'l U.)

- **Secretaries**

- Naomi Nagahashi (SLAC)

- Maxine Hronek (FNAL)

Here We Have

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- Groups
 - CAP
 - Chronopixels
 - DEPFET
 - FPCCD
 - FNAL
 - INFN
 - LBNL
 - LCFI
 - MIMOSA
 - SiD

22(Mon.)	23(Tue.)	24(Wed.)	25(Thu.)	26(Fri.)	27(Sat.)
		08:30-12:20 open	08:30-12:00 open		08:30-12:00 closeout
14:00-17:20 open	13:30-17:10 open		13:30-15:15 open	13:30-17:00 closed	
			15:15-17:30 closed		

- **Open session presentations** provided summaries of status and plans
- **Closed session** was used to clarify technical and organisational issues, and to discuss their needs for additional resources
- **Closeout session:** Committee will inform R&D groups draft recommendations, and try to obtain their verbal agreement

“Physics Requirements for the ILC Vertex Tracker”

- point precision, multiple scattering, polar angle coverage, space/time granularity

Review Summary Report

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- A draft of the review report will be available in a month or so.
- A final report, after endorsement by WWS, GDE, ILCSC and FALC, will be published.

See the Detector R&D Panel Wiki page

http://www.linearcollider.org/wiki/doku.php?id=drdp:drdp_home