



# NEWS

- Possible Engineers joining the SID Engineering Group
  - PSL
    - Farshid Feyzi → Muon Steel
  - TRIUMF
    - Alisa Preston
- American Linear Collider Physic Group (ALCPG) Conference Oct 22-26 at Fermilab  
<http://ilc.fnal.gov/conf/alcpag07/>
  - SiD talks on morning of Oct 23 and afternoon of Oct 26
  - Do we want to meet as an Engineering group sometime this week?
- Hcal meeting-Thursday 10/11 at 10:30 (central time).



# ALCPG SiD Talks

## Draft Schedule

- Tuesday, 23<sup>rd</sup> Oct:
  - 8h30-9h00 (30m) LOI Requirements and what we need to get there (Mark Oreglia)
  - 9h00-9h30 (30m) SiD PFA and Simulation code (Andy White)
  - 9h30-9h50 (20m) Benchmark reactions (Andrei Nomerotski)
  - 9h50-10h15 (25m) break
  - 10h15-10h35 (20m) VTX status (Su Dong)
  - 10h35-10h55 (20m) TRK status (Rich Partridge)
  - 10h55-11h15 (20m) ECAL status (David Strom)
  - 11h15-11h45 (30m) HCAL status (Vishnu Zutshi)
  - 11h45-12h15 (30m) How to make choices (John Jaros)
- Friday, 26<sup>th</sup> Oct:
  - 13h30-13h50 (20m) muon/PID status (Henry Band)
  - 13h50-14h10 (20m) Forward systems (Bill Morse)
  - 14h10-14h40 (30m) IR and MDI (Tom Markiewicz)
  - 14h40-15h10 (30m) engineering; solenoid (Kurt Krempetz)
  - 15h10-15h30 (20m) Electronics (Gunther Haller)
  - 15h30-15h50 (20m) break
  - 15h50-16h10 (20m) Optimization (M Breidenbach)
  - 16h10-16h30 (25m) Rvw LOI tasks (Harry Weerts)
  - 16h30-17h00 (30m) Discussion



# SiD Collaboration Meeting -Plans/Schedule

10/07 to 2/08

- Identify liaison from each Sub-detector group to work closely with SiD Engineering group.
- Understand and refine the DOD SiD starting point.
- Define the sub-detector space and parameters(Global Parameters)
  - Sub-detector modules-weight/size/cables/utilities/dead space
  - Sub-detector assemblies-clearances/dead space
  - Sub-detector assembly supports
- Create Control Board/Committee
- Create engineering drawing/database



## SiD Collaboration Meeting –Plans/Schedule

2/08 to 5/08

- Complete conceptual design of the sub-detector
- Define how the detector opens/closes
- Define detector assembly/maintenance Plans
- Define parameters for simulation work
- Develop cost estimates and create BOE's.
- Require change control



## SiD Collaboration Meeting -Plans/Schedule

5/08 to 9/08

- Assist with LOI
- Complete unfinished tasks
- Start the physic/engineering iteration process



## SiD Collaboration Meeting -Plans/Schedule

- Start working on the EDR.
- Write up specifications for long lead items.
  - IR Hall
  - Solenoid
  - Iron Flux Return
  - Tungsten Plate



# LOI

October 3, 2007

## Guideline for the definition of a Letter of Intent to express an interest to design and engineer a detector at the International Linear Collider

The purpose of this draft document is to define more precisely the letters of intent (LOIs) for detectors at the ILC.

With the LOI a group expresses its interest to develop a design for a detector at the ILC. LOIs will form the basis on which two groups will be invited to further develop and detail their plans and eventually submit an engineering design report, EDR.

The LOI should contain information on the proposed detector, its overall philosophy, its sub-detectors and alternatives, and how these will work in concert to address the ILC physics questions. The evaluation of the detector performance should be based on physics benchmarks, some of which will be the same for all LOIs based upon an agreed upon list and some which may be chosen to emphasize the particular strengths of the proposed detector. It should contain a discussion of integration issues with the machine. It should be developed enough to allow a first preliminary assessment of civil engineering issues like interaction hall, support halls etc. It should enable the reader to judge the potential of the detector concept and to identify the state of technological developments for the different components. Alternative technological options should be elaborated. Where needed, areas of further research and development should be identified, together with timelines and milestones. The group submitting the LOI should define its position and role in the ongoing international research and development for a detector at the ILC. The LOI should include a preliminary cost estimate for the detector. The overall length of the LOI should not exceed 100 pages.

The LOI can, but need not, refer to other documents where more technical details are given. If so these documents should be submitted together with the LOI.

In addition to a concise technical description of the proposed detector the LOI should present the structure of the group which is proposing the detector. The resource needs and their evolution in time should be presented. The LOI will not represent any formal commitment of the groups signing it to the project or the proposed detector. It should however enable the reader to judge the capacity and the seriousness of the groups to carry out the work until the EDR.



# IR Workshop Summary

- Most of the Detector Assembled at Surface
- Push-Pull Scenario
- 18m Diameter Shaft for each Detector
- Weight to be lower down shaft → TBD
- 2-100 ton cranes in IR Hall
- 23m crane travel in IR Hall
  - IR Hall width ~25m if one includes alcoves





# Global Parameters

Detector	Radius (m)		Axial (z) (m)	
	Min	Max	Min	Max
Vertex Detector	0.01	0.06	0.00	0.18
Central Tracking	0.20	1.25	0.00	1.67
Endcap Tracker	0.04	0.20	0.27	1.67
Barrel Ecal	1.27	1.40	0.00	1.82
Endcap Ecal	0.20	1.25	1.68	1.82
Barrel Hcal	1.42	2.37	0.00	2.78
Endcap Hcal	0.20	1.41	1.82	2.78
Coil	2.49	3.32	0.00	2.78
Barrel Iron	3.35	5.99	0.00	2.79
Endcap Iron	0.20	5.99	2.79	5.43

**Note: Gap between Barrel and End cap**

Inter-Detector Gaps	m
DR_GAP_Trkr_EMCAL	0.015
DR_GAP_EMCAL_Hcal	0.015
DR_GAP_Hcal_Cryostat	0.030
DR_Gap_Cryostat_Steel	0.030

**DR\_Gap\_BEcal\_ECEcal=.02m**

**DR\_Gap\_BHcal\_ECHcal=.01m**

**DZ\_Gap\_CT\_ECEcal=.01m**

**DZ\_Gap\_BEcal\_ECHcal=0**

**DZ\_Gap ECEcal\_ECHcal=0**

**DZ\_Gap\_BHcal+\_EndIron=.01m**