LOI issues to discuss

- Schedule too aggressive. SiD workshop in Jan/Feb?
  => updated
- IDAG questions: How are we going to handle them?
  => subgroup+
- Description of simulation tools and infrastructure:
  Yes, we include it.
- Performance graphs/ Engineering drawings: What exactly do we need ?
- Making SiD's case strong: compact, robust tracking + optimized calorimeter
- Latex in APS form ? yes

Plans for the LOI

Editors: Phil Burrows, Mark Oreglia, Hiro Aihara

- November 15, 2008: Deadline for subsystem/subgroups to provide reports, and addressing IDAG questions.
- December 15: : Deadline for first pass of physics benchmarking chapter. Editors to have given feedback on subsystem sections.
- January 15 (SiD workshop?), Revised subsystem sections that meet LoI length requirements. Editors will then work on combining material coherently.
- February 15, 2009: Complete draft LOI available for collaboration review.
- March 15: Final draft ready.
- March 31: Submission of LOI to Research Director.

IDAG wishes the proponents of the 3 LOI's to address the following points in their LOI document:

(1) Sensitivity of different detector components to machine background as characterized in the MDI panel.
(2) Calibration and alignment schemes.
(3) Status of an engineering model describing the support structures and the dead zones in the detector simulation
(4) Plans for getting the necessary R&D results to transform the design concept into a well-defined detector proposal.
(5) Push-pull ability with respect to technical aspects (assembly areas needed, detector transport and connections) and maintaining the detector performance for a stable and time-efficient operation.
(6) A short statement about the energy coverage, identifying the deterioration of the performances when going to energies higher than 500 GeV and the considered possible detector upgrades.
(7) How was the detector optimized: for example the identification of the major parameters which drive the total detector cost and its sensitivity to variations of these parameters.

I Introduction (5)

- ILC physics (brief)
- SiD philosophy and rationale; emphasize strengths, uniqueness …
- Outline of SiD design, and optimization process
- Pointer to cost and future R&D issues (later)
- SiD organization

II Global issues (10)

- The machine-detector interface: rationale, engineering drawings …
- IR hall, assembly, access …
- Push-pull issues, to include: strategy, time estimate, alignment, calibration…
- Backgrounds

III Subsystems: for each, to include:

- Performance requirements, pointers to physics benchmarks
- Design outline, including engineering details, drawings etc
- Technology options
- Baseline choice(s)
- Front-end electronics
- Performance: spatial resolution, efficiencies, energy/momentum resolution …

Tracking system (10+)
EM calorimeter (10+)
HCAL (10+)
Forward systems (5?)
Magnet (5 or less)
Muon system (5)
DAQ (1)
Simulation tools + infrastructure, PFA … (5)

IV Benchmarking results (25?)

V Cost estimate (5)

VI R&D (3) to include:

- Needs for further R&D
- Plans, goals, benchmarks, timescales

Summary (1)
Total pages: 100+

Subsystem issues

1. Definition of subsystem/subgroup
1.1 Name of the subsystem
1.2 Contact person(s) for LOI writing (!very important !)
1.3 Geometrical definition: Where it is located. Dimensions
1.4 Function
1.5 Requirements/specifications
Typical physics benchmark(s) that your system is most relevant.

2. Description of the subsystem
2.1 Concept
2.2 Baseline design
2.3 Expected performance
2.4 Illustrations/Drawings that you *definitely* want to include in LOI
2.5 Options

3. R&D roadmap
3.1 Issues
3.2 Milestones (Before 2012, and after 2012)
3.3 Resources needed

4. Cost estimation

5. Q&A : anticipated questions from IDAG and answers to them (in available).

6. Organization of the subsystem group
6.1. Institutions involved