ILD LOI

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LCWS08m Chicago

Contents of LOI (guideline)

Summary of 'IDAG charge' and 'additional questions by IDAG''

- Overall philosophy
- Subdetectors and alternatives
  - Technological state
  - R&Ds needed and milestones
  - Calibration and alignment
- Physics performance
  - Based on agreed-upon benchmark modes (+ more)
  - How the components will work in concert to address the ILC physics questions
  - Optimization method
  - ~TeV energy performances (modifications)

Contents of LOI (guideline)

- MDI
  - Developed enough to allow preliminary assessment of civil engineering issues
    - Experimental hall, support hall, power needs, water needs, etc.
  - Push-pull design
- Group structure
  - Management
  - wrt the RD's organization (Common tasks)
- Cost
  - preliminary
- Resource needs and time profile
  - Money and FTE

ILD LOI Chapters

(preliminary suggestion)

- 1. Overview ~8 pages
  - ILC physics to be aimed at.
  - Overall philosophy and brief description of ILD.
- 2. Detector optimization ~15 pages
  - Description of the method.
  - Simulation studies to pick the detector parameters
  - Result and options
- 3. Physics performances ~ 15 pages
  - Performances on the 'agreed-upon benchmark modes' and other important modes that demonstrate the capability of ILD.
  - Performances at energies higher than 500 GeV (~1 TeV).

- 4. Subdetectors - ~40 pages total
  - Each should address:
    - Technology (options)
    - R&Ds needed, milestones and timelines
    - Calibration and alignment
    - Basic engineering (structure, support, dead regions etc.)
  - Vertexing ~ 6 pages
  - Silicon trackers ~ 6 pages
  - TPC ~ 8 pages
  - ECAL/HCAL ~ 10 pages
  - FCAL ~ 6 pages
  - Muon ~ 3 pages
  - Detector solenoid (with DID) ~ 3 pages
- IR and machine bkg ~5 pages
  - IR beam pipes, heating and cooling, final quads and supports
  - Bkds due to SR, beam particles, muons , neutrons, EMI etc.
- Assembly and integration ~ 6 pages
- DAQ and computing ~5 pages
- Cost and resource needs ~5 pages
- Group structure ~3 pages

Subdetector contacts charge

The subdetector contact persons should lead the effort to define and refine the subdetectors for the LOI. Specifically, the contact persons should act as the liaison to R&D groups and individuals that are doing relevant work, communicate with the other ILD working groups and other subdetector contact persons when necessary, and should organize therelevant section of the LOI. They should ensure that the R&D collaborations are aware of the needs of ILD and work together with them to fulfill these needs.

The subdetector contact persons report to the Joint Steering Group of ILD. The term is to end with the completion of the LOI when the organization for the future will need to be discussed again.

LOI Editors

- JSB
  - Overview, Group organization
- Optimization panel (+ physics common task members)
  - Optimization and physics performance section
- Cost panel
  - Cost section
- MDI panel
  - IR/machine bkg, assembly/integration
- Software panel
  - Computing (DAQ/computing)
- Subdetector Contacts
  - Each subdetector section
  - Muon?

LOI Timeline (draft)

- LCWS08 (Chicago), Nov 19 ‘08
  - Define contents and editors
- Jan ‘09
  - First complete draft
- ILD workshop in Seoul, Feb ‘09
  - More or less final draft
- March 31 ‘09
  - submission
- ACFA09 (KEK), Apr 17 ‘09
  - First IDAG meeting after submission