RD's Report – II

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Plans from now
Common Task Groups
Monitoring by IDAG
Cooperation with CLIC

Validation

- ILCSC held in Hamburg on August 19, endorsed the IDAG conclusion and my proposition to respect it for validation.

ILD and SiD are validated.

Dual readout Cal is recommended for further R&D

It was announced to the groups.

How we proceed from now

The goal:

To produce detailed detector designs,

which demonstrate by 2012

***that desired physics can be pursued at ILC*.**

Now we have two groups validated, ILD and SiD.

They will strengthen efforts toward this goal.

IDAG will further monitor this process and will give advices for us to reach the goal.

Guideline for planning

- **Since time is limited, detailed planning is needed to meet the goal.**
- **It will also make monitoring by IDAG effective.**
- **Required items were listed in advance to guide the groups to consider their own plans.**

Some plans were already described the LOIs.

However, the guideline was discussed among the groups, so that all groups share the same understanding about what to do.

- **The both groups are working on their own plans along the guideline. I hope tasks are identified clearly, distributed in the groups and clear mile stones will be set.**

- **Some items require close cooperation with the accelerator colleagues and between the two groups.**

- **The role of the Common Task Groups will be increased in the coming phase.**

This workshop will be a good chance to discuss them in details.

Guideline for the Plan of the detector groups

1. **Continue R&Ds on critical components to demonstrate proof of principle**
2. **Define a feasible baseline design**

   (Options may also be considered. But one of them should be proven to be feasible.)
3. **Complete basic mechanical integration of the baseline design accounting for insensitive zone**

   (such as support structure, pipes, power lines etc.)
4. **Develop a realistic simulation model of the baseline design, including faults and limitations**

Guideline (cont'ed)

5. **Develop a push-pull mechanism working with relevant groups**
6. **Develop a realistic concept of integration with the accelerator including the IR design**

   5&6: with GDE's BDS group through the MDI group
7. **Simulate and analyze benchmark reactions,**

   which can be updated
8. **Simulate and analyze some reactions at 1 TeV, including realistic higher energy backgrounds demonstrating the detector performance.**

   8&9: Based on the work of the Physics Group and Software group.

   The reaction will be chosen to show the strength of ILC compared to other facilities.

Guidelines (cont'ed)

9. **Develop an improved cost estimate.**

   (There will be discussions between the two groups to understand the methodologies each other.)

Common Task Groups

- **The 5 common task groups will be reinforced to accomplish their tasks in the new phase. They will also meet during this workshop.**

- **MDI:** The key communication channel with the BDS group of the GDE, and between the two groups regarding the integration into the accelerator and the push-pull scheme.

- **Engineering Tool:** It will become critically important to identify common or compatible engineering tools for the design work of the detectors and integration, which will be spreaded around the world.

Common Task Groups (cont'ed)

- **Detector R&D Group:** It seeks effective ways for pushing various detector R&Ds of the two detector groups under close cooperation with R&D collaborations and between the groups.

  It facilitates detailed discussions with the R&D collaborations for the groups to assess what can be realistically done until 2012 to prove feasibility and to estimate costs. This needs to be done in the respect of the autonomy of the R&D groups which may have scopes wider than ILC.

- **Software Group:** It will arrange necessary tools for simulation for the new benchmark reactions, for updated machine parameters (in cooperation with the Physics Group and MDI group).

- **Physics Group:** The group is studying possible physics Scenarios assuming the first outcomes from LHC. It also reviews the benchmark reactions for the new phase to be studied by the detector groups.

Monitoring by IDAG

- IDAG is going to monitor the development of the detector activity through the post-validation phase.
- *We are still considering how this can be done effectively and efficiently.*
- For validation, IDAG made a big effort and was extremely helpful. We wish to have similar wise advices. But, since the coming period is much longer, we can not ask for similar concentration over the entire period.
- The detector groups will be working hard to complete their plans. Too much extra load, like preparing so much material as LOI contents or too often, will interfere this effort of the groups.

What is an adequate amount, detail and interval ?

Monitoring items by IDAG
(Still under consideration)

In principle any advices will be helpful to fulfill our task.

The entire flow of the development:

Is the plan realistic, i.e. possibly be accomplished under the given environment ?

Each item listed in the guideline:

- Speed of progress in comparison with the group's own planning
- What should be improved and how they can be done.

How to be monitored

(Still under consideration)

- The group's plans will be handed to IDAG to be referred to monitor.
- The material for the interim report, which will be provided by each group in 2010, as was already informed, will also be handed to IDAG. This intermediate progress will be compared with the plan and examined.

  (The interim itself will be a report to ILCSC by RD.)
- A skeleton draft of the detailed design report to be produced early 2012 describing key points. This can be a base for the final design report of each group.

The two reports will be rather short, ~50pages.

How to be monitored (cont'ed)

Monitoring at various Workshops

- We plan to invite the IDAG members to LC-workshops, where progress of the groups will be presented.

  There are two chances per year (desirably to all workshops). It depends on the speed of progress and availability of the members, but at least once a year.
- IDAG may meet the groups during these WSs for detailed questions.
- Advices will be requested to IDAG ~once a year, or after the written materials.

Cooperation with CLIC

- It was suggested at ILCSC to make a joint working group for possible ways of cooperation.
- This direction was agreed by CLIC detector people.
- We are preparing for it.

Summary

- The validated detector groups are making more detailed plans of their activity toward 2012.
- The Common Task Groups will be reinforced and update their activities for the new phase.
- IDAG will monitor the progress of the groups further. How it will be done is under consideration now.
- There will be a joint working group with CLIC detector activity to identify possible ways of cooperations.