# MDI Phone Meeting

March 13th 2014, 14:00 – 15:50 UTC

http://agenda.linearcollider.org/conferenceDisplay.py?confId=6321

**Present**

K. Buesser, P. Burrows, A. Gaddi, T. Markiewicz, M. Oriunno, K. Sinram, Y. Sugimoto, T. Tauchi

## News from LCC PD Executive Board

- The ILC parameter working group is now a joint detector/machine group. Co-chairs are Jim Brau and Nick Walker.
- The ILC design will be put under formal configuration control with the TDR design as the baseline. It is not clear yet how the impact of the detector groups to the change control process will be organised. Hitoshi Yamamoto expects the parameter group to play an important role.
- An Accelerator Design & Integration (AD&I) meeting together with the CFS groups will take place at the University of Tokyo on April 8-10. A site visit to Kitakami is planned for April 7. Discussions about the IR will be on the agenda. Karsten will attend in person, others should be able to phone in.
- The working groups and conveners for the ALCW at FNAL in May are still not decided.

## Recent results from Japanese/KEK MDI group on hall design

The KEK CFS group is continuing studies on several options for the experimental hall design. Involved are members from the accelerator and detector groups as well as from external contractors. Following up from the discussions at the last global CFS phone meetings, the three envisaged possibilities for Kitakami (horizontal tunnel access HT, vertical shaft access VS, hybrid solution HT+VS) are under study. Emphasis is being put on the hybrid solutions where it is assumed that SiD would predominantly use the horizontal tunnel for the access in the assembly phase while ILD would use an 18m shaft. Three different sub-options with different locations of the shaft and possible additional smaller shafts for services are under study. Input from the detector groups is needed on requirements for these solutions: tunnel and shaft properties, crane coverage, etc.

## SiD Comments

Marco summarises the comments from SiD.

Pre-existing facilities (LHC, Gran Sasso) provide important experience for the ILC experimental hall discussions, but it needs to be kept in mind that the boundary conditions are always different. SiD prefers the HT access mainly for these reasons:

- The cost analysis does not include consequences of moving the complete ILC footprint together with the IR in the VS cases.

- The surface infrastructures for VS access are more complicated (additional platform, cranes, larger assembly buildings).

SiD raises additional concerns as there is not enough information to believe that the location of the assembly halls has been optimised. The slope of the horizontal tunnel needs to be minimised and the radius of the curves in the tunnel needs to be optimised taking into account realistic information about the items that need to be transported. SiD has doubts that the current information for all access variations is enough to come to reliable cost and risk analysis.

SiD emphasises that the hybrid solution would require a large effort for studies on all consequences.

## ILD Comments

Karsten presents comments from him and Klaus from the ILD perspective. They support to further study a possible realisation of the hybrid solution.

They see some disadvantages in this solution especially in the more complicated surface installations, additional boundary conditions for the location and footprints of the surface halls as well as a possible compromise in the HT path.

Advantages are expected for ILD in the easier installation scheme, a proven transportation way for the heavy parts (gantry crane), space for services in the large VS, a reduced underground volume and smaller underground cranes. The main argument in favour of a VS assembly scheme is the time line that decouples the underground installation work larger from the machine and CFS work. In addition a transportation scheme for the HT access that can cope with ~7% slope and 200+t heavy parts is not defined yet.

## Discussion

Main outcomes of the discussion are:

- We need a clearer understanding of the detector construction and assembly procedures. Which parts are delivered just-in-time from labs, universities, contractors? What work can be done in the assembly halls? Are workshops and labs available at the ILC campus.?Etc.
- Any construction and assembly plan depends on the available local infrastructure (e.g. roads) and procedures.
- The current designs of the underground halls for the hybrid solutions are not optimal yet. A loading area in the hall at the end of the tunnel is required for SiD.
- Closer collaboration with the contractors doing the studies is needed. Yasuhiro and Toshiaki volunteer to serve as liaisons to the Japanese companies. A coordinated approach needs to be agreed with all groups involved. Main goal is to minimise feedback loops between users (detector groups) and people doing the site related studies. The April AD&I meeting in Tokyo could be an opportunity where this is discussed not only for the IR but for all of ILC.

## Plans for FNAL Workshop

As still no working groups or conveners are defined, there is no agenda yet. We expect the IR discussions to take an important role at the workshop.

## AOB

The next MDI phone meeting should take place in the week before the AD&I meeting to agree on a common wording of the detector groups. The next CFS phone meeting takes place on March 18th.