

Minutes of the meeting CLIC Civil Engineering and Services (CES)

No.2 - 11 June 2008

Present: H.Braun (AB/ABP), C.Hauviller (TS/HDO), J.Inigo-Golfin (TS/CV), K.Kershaw (TS/HE), A.Kosmicki (TS/CE), H. Mainaud Durand (TS/SU), C.Martel (TS/CV), J.Osborne (TS/CE)

Via WEBEX: J-P. Delahaye (CERN), A.Enomoto (KEK), V.Kuchler (FNAL)

1. APPROVAL OF MINUTES OF PREVIOUS MEETING – 14 MAY 2008

The minutes of the previous meeting were approved without comment.

2. GENERAL INFORMATION

J.Osborne informed the group that the EL representative, K.Karsten, would be leaving TS to join AB department. It is still to be defined if Karsten can continue to be the electrical specialist for CLIC. This is the much preferred option, in order to save losing time starting over again.

(Action H.Braun to seek clarification with the responsible persons within AB)

3. PROJECT BREAKDOWN STRUCTURE

The draft PBS was presented at the 1ST CES meeting on 14 May. Subsequently, comments were received from CV, HE & SU. These comments were discussed and agreed, so the PBS for CES can now be 'frozen'. The new structure will be transmitted to the CTC for inclusion in overall PBS. *(Action J.Osborne)*

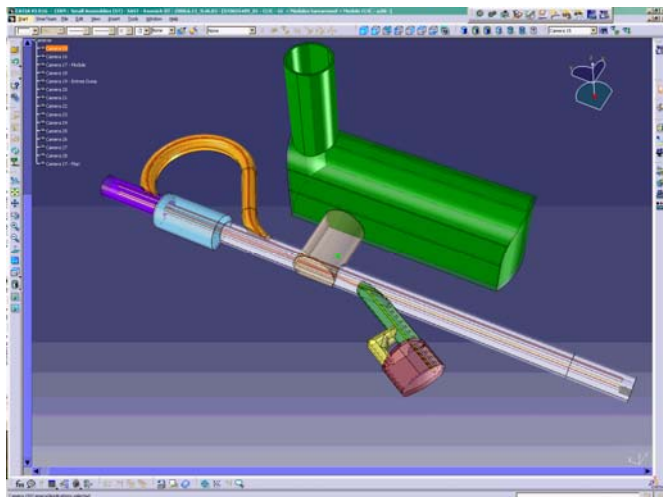
It was noted that the same structure as ILC was adopted, as much as possible, to facilitate cost comparison for the two projects.

4. TURNAROUND STUDIES

A.Kosmicki gave a presentation on the status of the 3d CATIA model for the turnaround areas. The study has highlighted several areas that need developing further :

- The civil engineering layout drawings will need to be modified to accommodate the machine model in the turnarounds.

- Access to beam dumps and the 'blue cavern' will be very difficult due to passage of services.



5. TUNNEL TRANSPORT

K.Kershaw presented his initial thoughts on the most suitable method of transporting and installing the machine in the CLIC tunnel. His current preferred option is to adopt the 'HERA' solution of a 'Tram' type machine with a fixed guide-rail rather than the 'painted line' that was utilized for LHC.

Further to the meeting, Keith sent a list of questions regarding transport that need to be answered in order to progress his studies :

A) MODULE CONDITIONING FOR TRANSPORT

1. What is the unit of transport? (Is it a module consisting of drive beam + main beam interconnected on two inter-restrained support beams, with survey etc ancillary equipment already installed?).
2. Will support beams be linked with removable restraints?
3. Dimensions in transport configuration?
4. Weights in transport configurations?
5. Potential lifting points (eg for transfer) and restrictions?
6. Potential support points (eg for transport) and restrictions?

B) TRANSFER TRAJECTORY RESTRICTIONS

1. What supports etc will already be installed on the floor?
2. How much clearance space between adjacent modules during transfer/installation?

C) POSSIBLE SIMULTANEOUS TRANSPORT/INSTALLATION OF SEVERAL INTERCONNECTED MODULES

1. What are the possibilities/implications if several modules are interconnected on the surface and transported/ installed at same time?

D) VIBRATIONS

Is it reasonable at this stage to assume that the levels of precaution taken for cryodipole tunnel transport will be sufficient?

6. CLIC-ILC COLLABORATION

J.Osborne presented the key areas where joint studies are possible for ILC and CLIC. These include :

- tunnel cooling
- tunnel ventilation
- civil engineering

7. AOB

Part of the mandate is to work together with the International Linear Collider Project (ILC) on areas of synergy. Funds have been granted from the EU via FP7, as such, persons working on ILC need to be highlighted and time sheets submitted. (*Action J.Osborne, B.Jenssen*)

8. NEXT MEETINGS

The next meeting of the CES is scheduled on **Wednesday 9 July at 14:30** in conference room **54-2-033**. The draft agenda is :

- Tunnel Ventilation
- Transport Questions
- Report on visit to TBM factory and general layout for CLIC at the various energies
- AOB

The regular meetings of the CES WG in 2008 are foreseen on 13/08, 10/09, 08/10, 12/11 and 10/12.