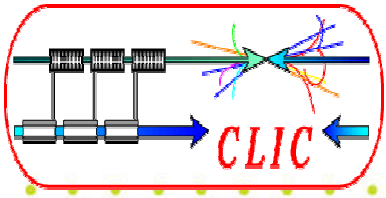
CLIC / ILC

Agenda:

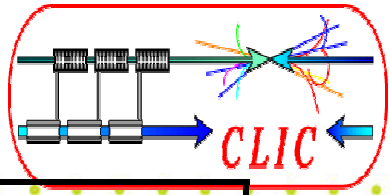
- **General policy about linear colliders and the CLIC/ILC collaboration**
- **Working Groups; status, issues and goals**
- **Proposed visit of the ILC Executive Committee to CERN in June 2009**
  - To discuss: goal, agenda and date(s)
- **Important milestones in 2010**
  - ECFA LCWS workshop,
  - ICHEP meeting (at Paris in July)
  - LCWS10 – Asia?
  - CLIC CDR and ILC TDP 1 Interim report
- **Expanding the collaboration / expanding interaction with CERN**

Context:



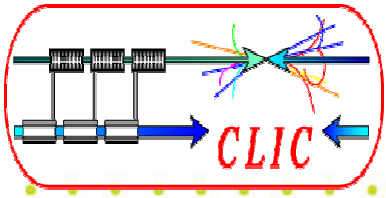
- CLIC – ILC Collaboration has two basic purposes:
  1. allow a more efficient use of resources, especially engineers
     - CFS / CES
     - Beamline components (magnets, instrumentation…)
  2. promote communication between the two project teams.
     - Comparative discussions and presentations will occur
     - Good understanding of each other's technical issues is necessary
     - Communication network – at several levels – supports it
- seven working groups which are led by conveners from both projects

Collaboration Working Groups:



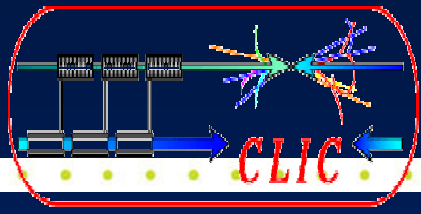
	CLIC	ILC
Physics & Detectors	L.Linssen, D.Schlatter	F.Richard, S.Yamada
Beam Delivery System (BDS) & Machine Detector Interface (MDI)	D.Schulte, R.Tomas Garcia E.Tsesmelis	B.Parker, A.Seryi
Civil Engineering & Conventional Facilities	C.Hauviller, J.Osborne.	J.Osborne, V.Kuchler
Positron Generation (new 11/08)	L.Rinolfi	J.Clarke
Damping Rings (new 11/08)	Y.Papaphilipou	M.Palmer
Beam Dynamics	D.Schulte	A.Latina, K.Kubo, N.Walker
Cost & Schedule	H.Braun, K.Foraz, P. LeBrun	J.Carwardine, P.Garbincius, T.Shidara

Working Group Mandates



- **Each Working Group identifies topics for their work plan (mandate) which:**
  - are practical
  - exhibit strong overlap
  - enhance inter-project communication
- **"an exclusive, pragmatic approach"**
  - example: Conventional Facilities (Civil Engineering)
    - exclusive and selective
  - *example: BDS and Beam Dynamics*
    - *inclusive and (nearly) comprehensive*
- **The collaboration must manage both**

CFS Working Group organisation



The following working groups already exist :

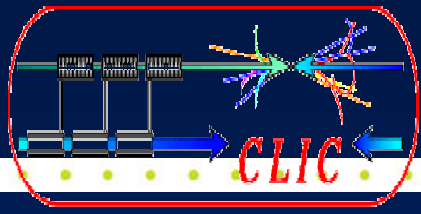
- The Conventional Facilities and Siting 'CFS Team' for ILC
- 'Civil Engineering and Services' CES for CLIC, based at CERN

These groups work independently on the civil engineering and services side of both projects.

Resources permitting, both groups work together on areas of mutual interest for both projects, with participation from **both sides at relevant meetings.** Meeting have been held monthly with CLIC & ILC participation

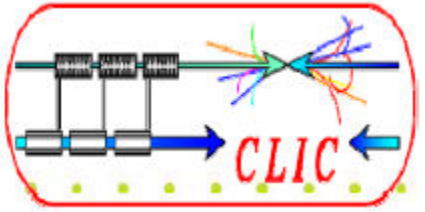
- Optimisation of Tunnel and Shaft diameters, distance between shafts (linked to safety)
- **Overall layout of the machine and interaction region infrastructure**
- Shallow site v Deep Tunnel Option
- Single Tunnel v Double Tunnel
- **Safety issues such as emergency egress**
- Environmental issues
- **Cooling Water**
- Power Distribution
- **Air Handling**
- **Transport Issues**
- Radiation simulations / shielding ?

CFS/CES Objectives for 2009



- Civil engineering :
  - 3d modelling for ILC using CATIA Software (by Spring 09)
  - Assist in studies for possible new ILC sites (Dubna,Desy)
  - Draw up plans for new ILC RF cluster design
  - Assist in shallow site studies v RDR deep tunnel
- Transport – to study ILC installation methods (by summer 09)
- Cooling & Ventilation – CLIC & ILC teams to work together to develop cooling and ventilation design
- Safety – to draw up a common document for underground safety rules that should be applied to CLIC & ILC (by summer 09)

Cost and Schedule WG:



- CLIC-ILC Cost & Schedule Working Group WEBEX Meetings
  1400 GMT - 2nd Thursday of each month (CLIC Cost & Sched – last Thurs)

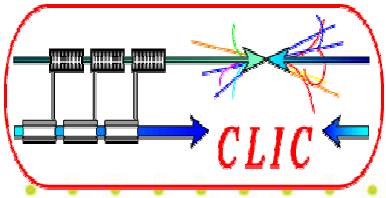
- Keep work towards cost estimate mutually transparent
- Profit by synergies
- Understand and communicate unavoidable differences in the methodologies used for the two projects
- Construction & installation schedules for CLIC & ILC w same methodology – June09

- Common ILC/CLIC notes (for mid '09)
  - Tunnel safety underground compliance
    Fabio Corsenego - together with ILC-CFS and CLIC-CES groups
  - Standardization methods to estimate cost of warm magnets including cabling and power supplies – Braun & Garbincius gathering materials, but need engagement of international magnet fabrication experts
  - Description of cost risk assessment – Braun, Riddone, Lehner, Garbincius
  - …

CLIC-ILC Cost & Schedule Group (2)

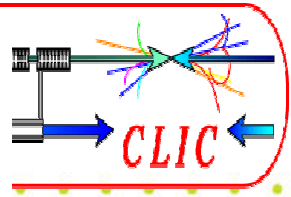
- **Tolerances**
  - Geometrical and mechanical (alignment and vibration) tolerances are generally tighter with the normal conducting technology
    - "tight mechanical positioning and structure tolerances of the high-frequency, high-gradient machine. In addition, precision components of the module require cooling water of just the right temperature and flow."
- **Risk**
  - Risk is mitigated through R & D
    - "unveiling of plans for a possible new 6.5-GeV two-beam system test facility in the future. Many of the issues facing the ILC team who work with the four ILC system test facilities - are present with this new CLIC test facility also. It will be a challenge for us all to make sure we use resources effectively to build test facilities that are both convincing and effective demonstrations of the technology and scientific instruments in their own right."
- **Cost & Schedule Group must account for these kinds of issues**

CLIC-ILC Joint Statements



- **Beyond the Working Groups:**
  - formalizing the mode of our collaboration,
  - especially regarding guidelines for communication outside the collaboration.
- **Puts basic strategy and timeline on a single page**
  - Issued November 13, 2008
- **Feedback from advisory/ oversight groups?**
- **Updates for 2010?**

Proposed meeting: June 2009



- **ILCEC to CERN to meet with CLIC ECSC**
  - ILC Executive Committee: Barish, Foster, Harrison, Yokoya, Ross, Walker, Yamamoto, Paterson
  - Extended CLIC Steering Committee: Delahaye, Braun, Geschonke, Schulte, Corsini, Wuensch
    - + (de Roeck, Ellis, Schlatter, Linssen)
  - ½ day at CERN to meet with ECSC + one day for ILCEC internal meeting
    - June 11 and 12 ? (suggested dates)
- **Goal:**
  - Review collaboration activities and consider expansion,
  - plan upcoming meetings,
  - discuss 2010 milestones,
    - including design report publication
    - and review panel recommendations

ILC + CERN / CLIC

Mutually beneficial activities:

- **ILC – lead:**
  - Detector physics; Machine Detector Interface; Beam Delivery System Design and test
  - Collider Component costing
    - Methodology
    - Risk
    - International procurement
- **CERN / CLIC - lead: (→ LHC experience)**
  - CFS/CES (a good start, but more is needed)
  - Industrialization of cryomodule
  - Cryogenic systems