

# CTF3 Collaboration Technical Meeting 21-21 January 2008

## Concluding Remarks

# *CTF3 - a world wide accelerator development collaboration*



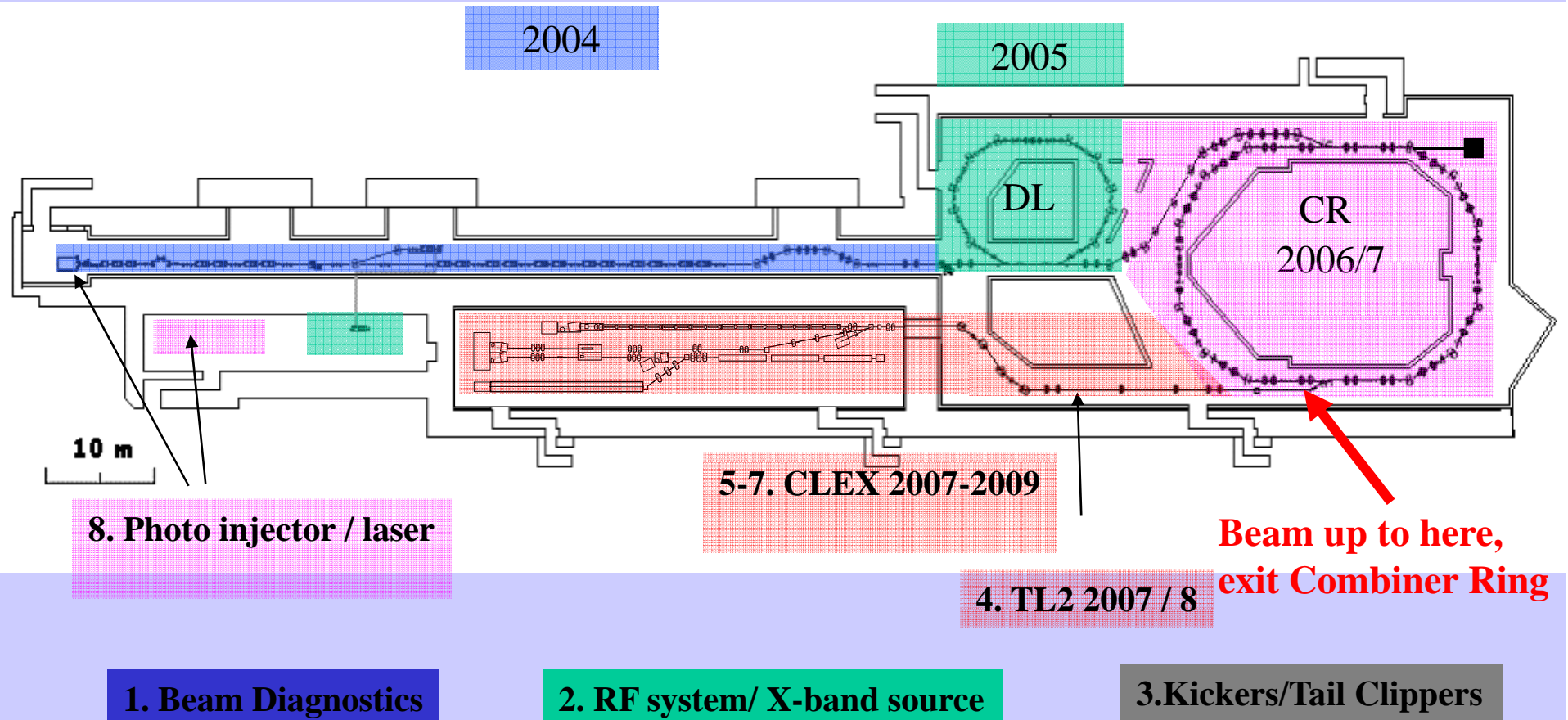
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# Presentations



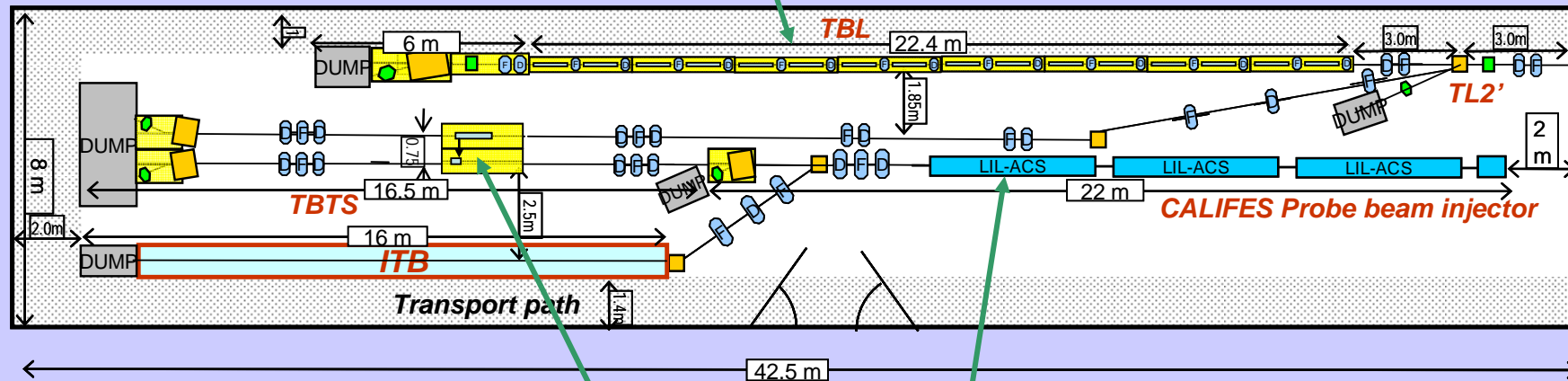
2008-01-23

CTF3 Collaboration Meeting  
Tord Ekelof Uppsala University

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# Presentations

5. **TBL** CIEMAT magnet movers, PETS prototype, (+ series ???), PETS tank (series ???)  
 UPC & IFIC : BPM development + electronics (series ???)  
 CERN overall responsibility, optics, RF equipment, diagnostics, infrastructure, quadrupoles ???



7. **Uppsal 7** Two Beam Test Stand  
 CERN PETS and Accelerating structure

6. **CALIF** CEA Dapnia Saclay overall responsibility  
 CERN  
 CEA laser beam line, laser beam conditioning  
 LAL RF gun for photo injector

# A few comments on....

- Key issues 2008-2010
- LHC results in 2010 and CLIC
- CTF3 beyond 2010

# Key issues 2008-2010

- Beam Diagnostics - many new devices being developed, tested, installed and used in CTF3 by many different collaborators. Crucial for optimizing and controlling the CTF3 complex.
- RF system - a work horse that must not fail. Stand-alone X-band source primordial for achieving a 12 GHz (not 11.4) GHz accelerating structure.
- Kickers - the tail clipper crucial for having a flexible pulse length.
- TL2 - no T2, no CLEX. Components from many collaborators.
- TBL - the stability of the Drive Beam when decelerated through many PETS is one of the key issues for CLIC. To go from 1 to 16 PETS will a big leap. How many PETS will we have (can we afford) for CTF3?

- Probe Beam - CALIFE well advanced and coherent project. The photon injector a critical component.
- Two beam Test Stand - will serve as first test bench for the PETS and later constitute a first, very short test section of CLIC. Extensively instrumented. One crucial question is; what is the effect on the beam of a spark, which spark frequency is tolerable?
- Photo injector - crucial for the optimal operation of both the drive beam and the probe beam.
- Acceleration structures - currently work with 11.4 GHz structures can only be done SLAC and KEK (not reported at this meeting). Underlines importance of getting the stand-alone 12 GHz band power source started to test final structures.
- Operation of the overall CTF3 *system* invaluable experience.
- CLIC3 -> CLIC extrapolation, tests and simulations required;
  - Drive beam current 35A -> 100 A
  - Drive beam energy 100 MeV -> 2500 MeV
  - Pulse length 140 ns -> 300 ns

# CTF3 beyond 2010

- CLIC development started in 1985 - in operation earliest by 2023, will last till ~2036 - a 50 years time span! (LEP ~20 years, LHC ~30 years). This evolution represents a complication for HEP.
- Current CTF3 planning up to 2010  
Establishment of detailed planning for 2010-2013 has now become necessary



# LHC results in 2010 and CLIC

- Impossible to predict!
- If new particles and interactions clearly visible, which is their energy scale - 0.5, 1 or 3 TeV?
- If not visible before 2010, maybe visible a few years later or after LHC upgrade?

# Conclusion

The CTF3 project has come to play an increasingly important role for our long-term possibilities to explore the fundamental structures and forces of Matter and the understanding of the origins of Universe - the very substantial progress reported at this meeting is therefore of great significance.

