

Proposal for a Swedish contribution

A proposal has recently been submitted to
the Swedish Research Council
and
the Swedish Wallenberg Foundation
with a request for
26.62 MSEK, or ca 4.6 MCHF,
to fund during 4 years
a Swedish contribution to CTF3 consisting of
the Two-Beam Test Stand of Work Package 2.2
and
the Transfer Line TL2 part of Work Package 1.

Earlier Swedish Contributions to CLIC Test Facilities

- CTF1 Button Beam Position Monitor
(Yan Yin, Dag Reistad and Tord Ekelöf)
Construction of bunch compressor
(Scanditronix AB)
- CTF2 Idle Cavities for 2nd order beam-loading compensation
(Staffan Rosander)
- CTF3 Button Beam Frequency Monitor
(Arnaud Ferrari, Anders Rydberg)
Beam Calculations and CTF3 Shift Work
(Arnaud Ferrari)
Confocal Resonator Beam Monitor
(Volker Ziemann, Arnaud Ferrari, Anders Rydberg)

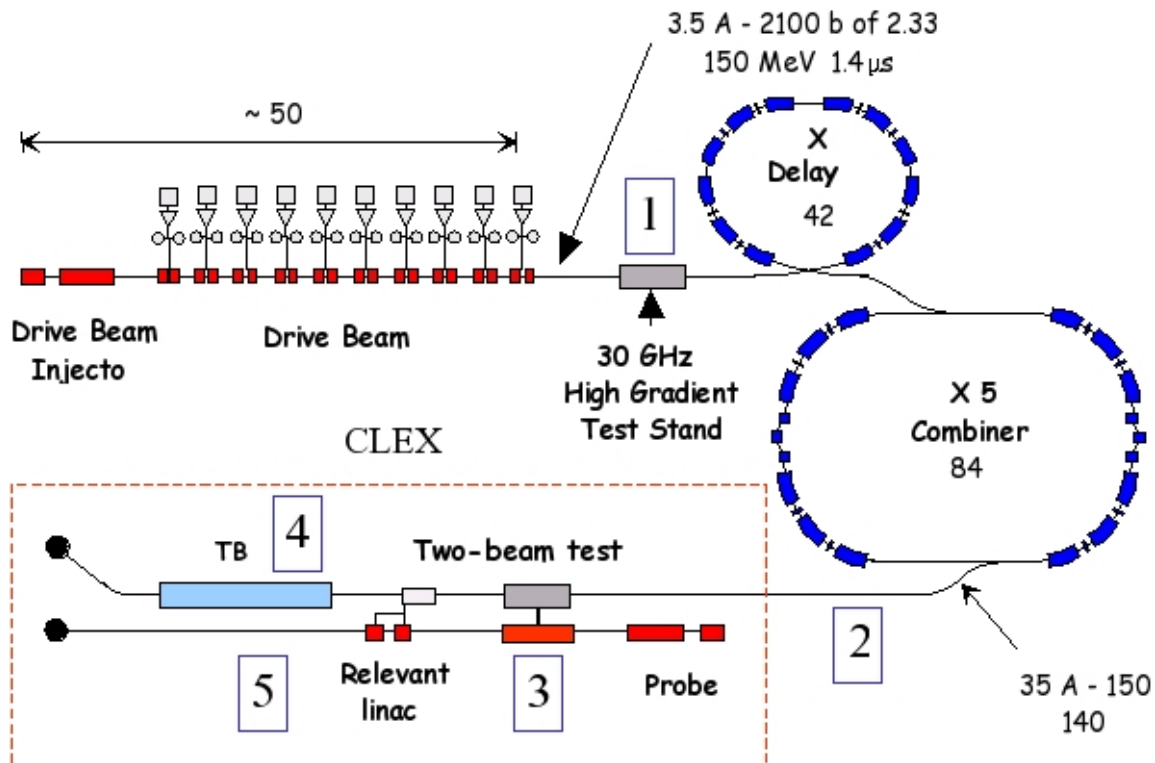
Swedish participation in CLIC design work through ELAN and EuroTeV

Post Collision Diagnostics
(Volker Ziemann)

Beam Tuning for Luminosity Optimisation
(Peder Eliasson, PhD student with Daniel Schulte,
CERN, and Tord Ekelöf as tutors)

The Swedish contribution

CTF3 Lay-Out



Transfer Beam Line TF2

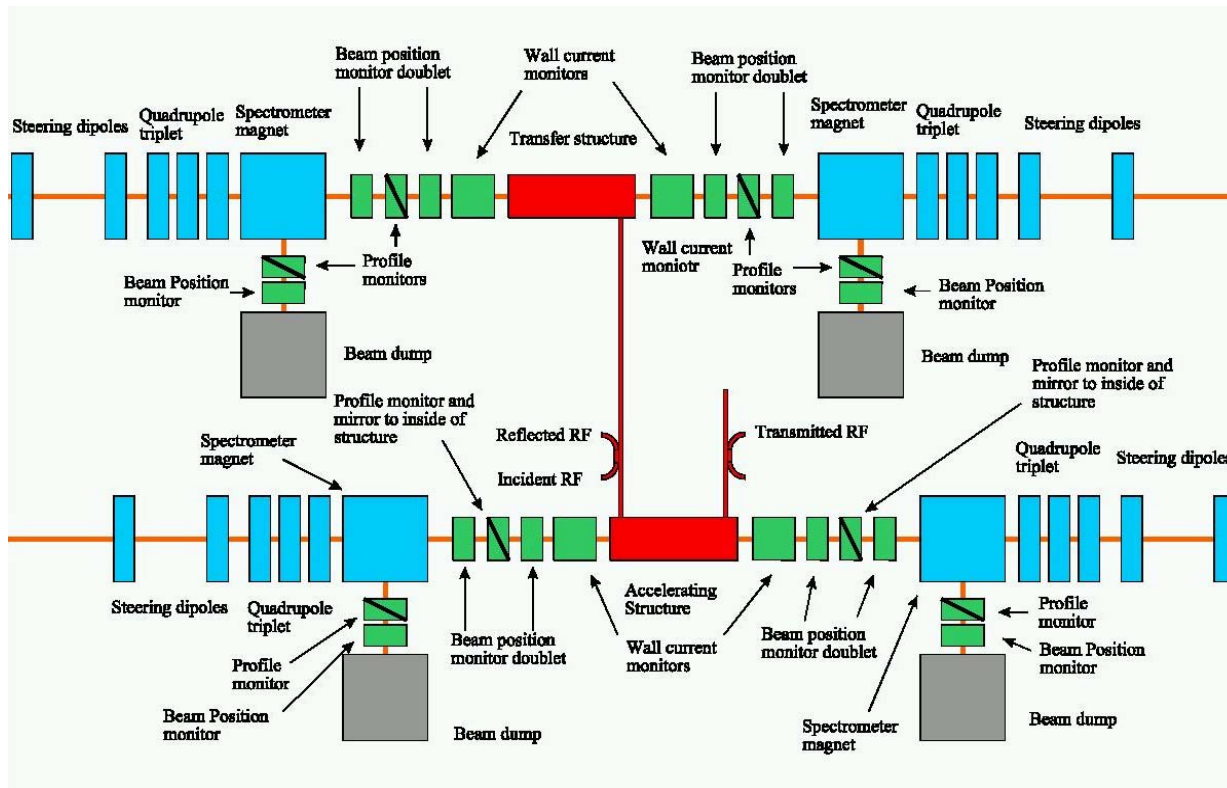
(position 2 in CTF3 Lay-Out)

1.5 MCHF + 6 man-years

1. The dipole, quadrupole and sextupole and steering magnets that comprise the beamline including a chicane used as a bunch compressor.
2. Pumps and the vacuum structure that needs to be optimized to handle high current beams.
3. Diagnostic system with position monitors, optical transition radiation monitors, and wall gap monitors to verify beam properties.
4. Mechanical support structure with girders and alignment and correction system.

The Two-Beam Test Stand

Position 3 in CTF3 Lay-Out
0.9 MCHF + 4 man-years



1. Power Extraction Structures (PETS) in what is called the Transfer Structure
2. Quadupole magnets to focus the beam in the Transfer Structure
3. Wall current monitors for optimization of beam transmission and also for measurement of the dark currents and breakdown currents produced in the Transfer Structure at high power operation
4. Streak cameras to measure the beam profiles before and after the Transfer Structure
5. Dipole magnets to steer the beam in the Transfer Structure

6. Beam position monitors to detect the beam position in the Transfer Structure
7. Spectrometer magnets to measure the beam momentum before and after the Transfer Structure
8. A multi-frequency receiver system for sub-nanosecond resolution capture of radiofrequency signals produced in the transfer structure
9. Vacuum pumps and detectors allowing the separation of the Test Stand from the rest of the machine to allow fast replacement and bake-out of components.

The Application for Funds

Application addressed to VR and KAW is signed by;

Tord Ekelöf, Principal Investigator

Volker Ziemann, TSL National Acc Lab in Uppsala

Arnaud Ferrari, ISV Department of Uppsala University

Curt Ekström, Director of TSL National Acc Lab

Örjan Skeppstedt, Direktor of MSL National Acc Lab in Stockholm

Co-Applicants from the Lund , Stockholm and Uppsala Universities;

Richard Brenner, Christian Bohm, Peder Eliasson, Arnaud Ferrari,

Hans-Åke Gustafsson, Vincent Hedberg, Kerstin Jon-And,

Bengt Lund-Jensen, Torbjörn Moa, Anders Rydberg,

Lars Westerberg, Volker Ziemann, Barbro Åsman

Decision will be taken in December 2004