DESY Infrastructure

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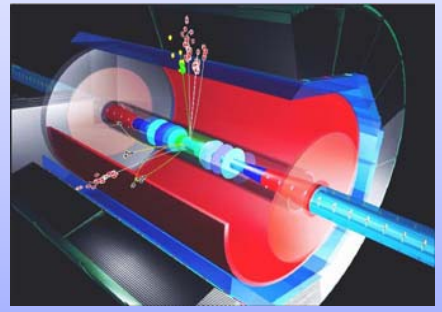
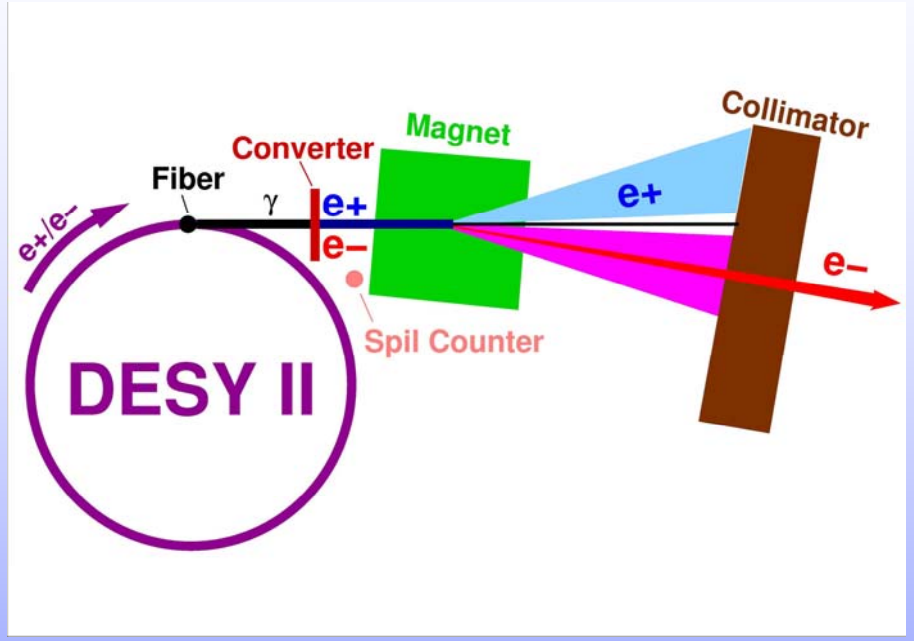
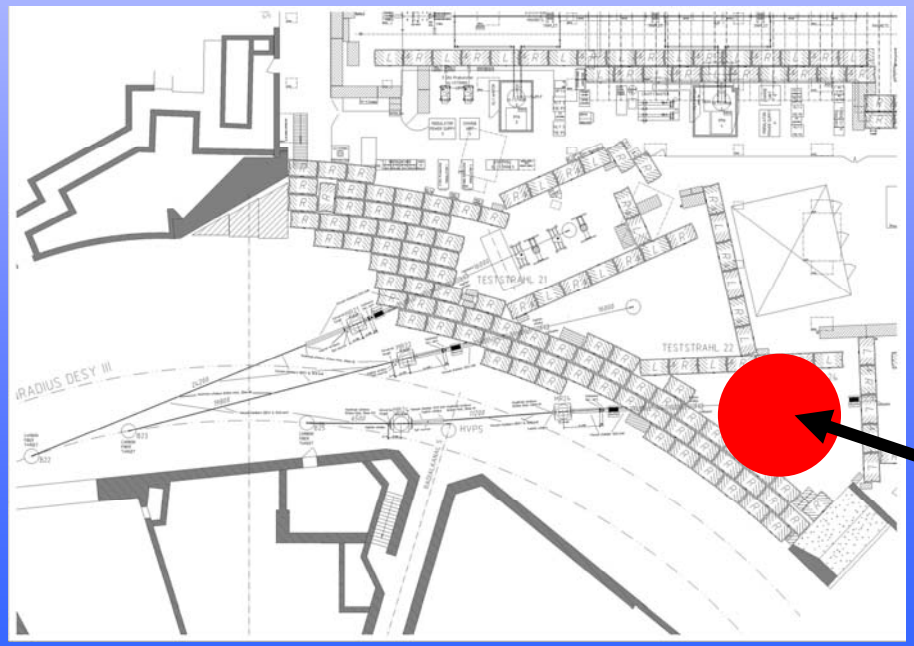


- Testbeam Infrastructure
- Telescope Mechanical Design
- Magnet Arrival Preparation

JRA1 Review Meeting
University of Geneva, Geneva
4. April 2006

DESY Testbeam





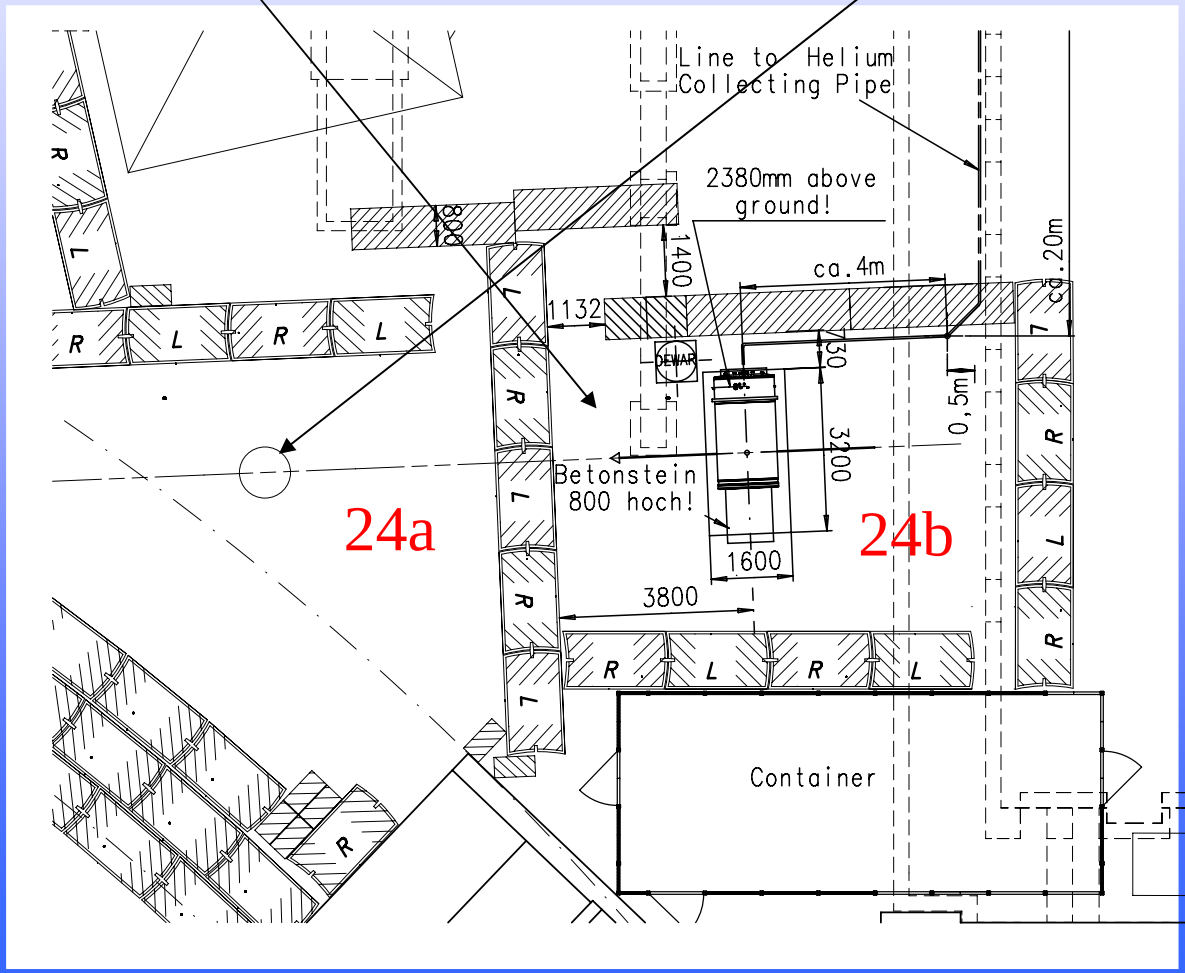
- bremsstrahlungs/conversion beam with E_e up to 6 GeV
- Can select beam momentum is chosen by magnet current
- Rates depending on energy, target material, collimator setting and operation

Rates	Target	
Energy	3mm Cu	1mm Cu
1 GeV	~330 Hz	~ 220Hz
2 GeV	~500 Hz	~330 Hz
3 GeV	~1000 Hz	~660 Hz
5 GeV	~500 Hz	~330 Hz
6 GeV	~250 Hz	~160 Hz

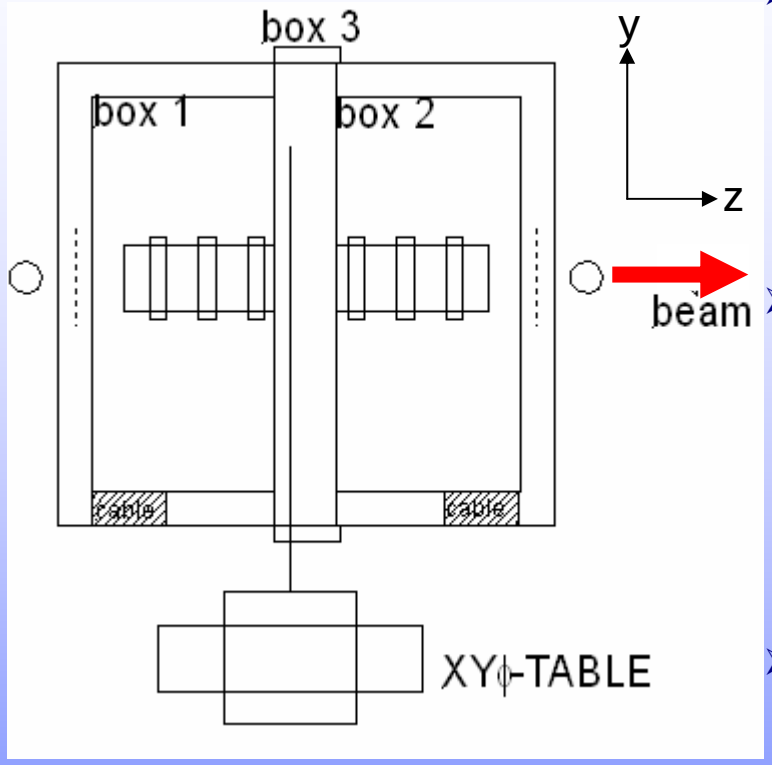
Area for EUDET project

DESY Testbeam

- Area slightly rebuilt to optimise it for our use
- The container behind the test beam area 24 can be used by the EUDET people. The power supply of the magnet e.g. will be place within this container.
- The telescope will operate independently in area 24a whereas the magnet will be located in area 24b.



Telescope Mechanics



- Box 1:
  - fixed position, optical bench for three reference planes, temperature controlled
  - Wall to DUT can be removed
- Box 2:
  - movable in z-direction, optical bench for three reference planes, temperature controlled
  - Wall to DUT can be removed
- Box 3:
  - Gap between 2 and 3, closed by thermal cover

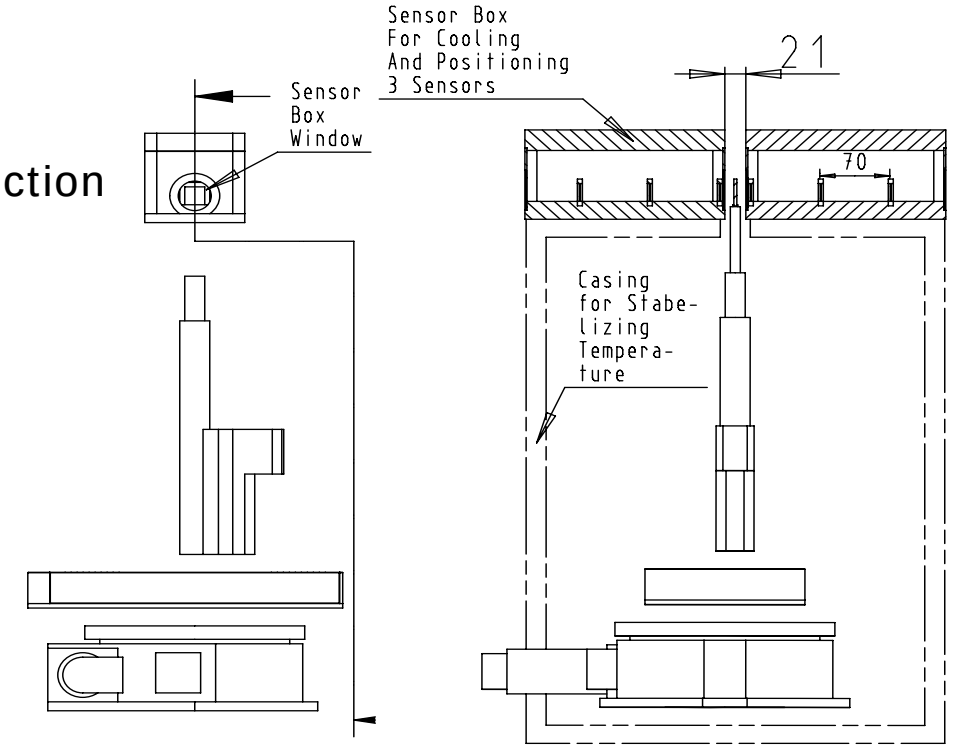
- XYϕ-table: external with “long” mechanical structure to locate the DUT between the reference planes (accuracy: 10um, repeatability: <0.5um per axis)
- This “arm” is the interface for the different DUTs
- Accuracy of mechanic: 0,1mm (alignment runs foreseen)
- boxes can be placed into magnetic field, not the XYϕ–table (cost reasons)

Ingrid-Maria Gregor, DESY Infrastructure

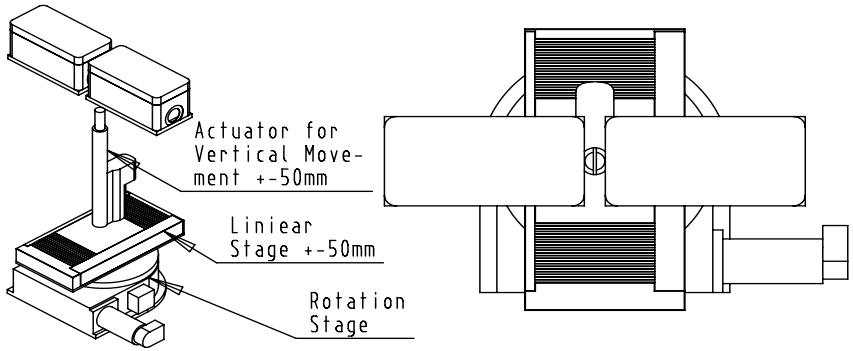
Very preliminary !!

1st Drawings

in beam direction



side view



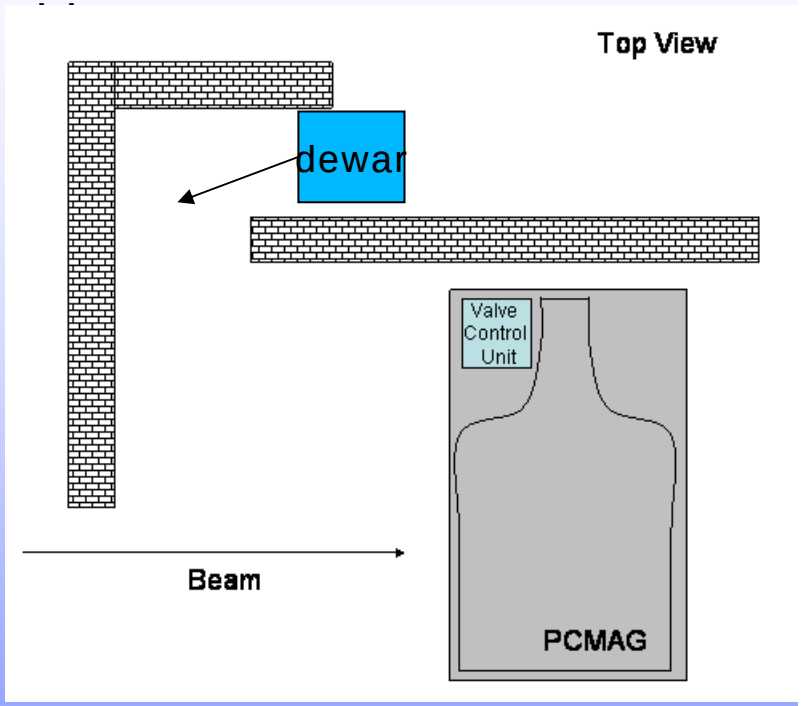
top view

DAQ Infrastructure

- 2 PCs to be used for the testbeam have been ordered
- One for data taking (Windows XP)
  - 2 parallel ports
  - 6 USB ports
  - Large disk (~0.5 – 1TB)
- One for analysis (Scientific Linux 3)
- Working on the optimal solution for data sharing and storing
  - NAS solution
- PCI/VME interface ordered

Magnet from KEK

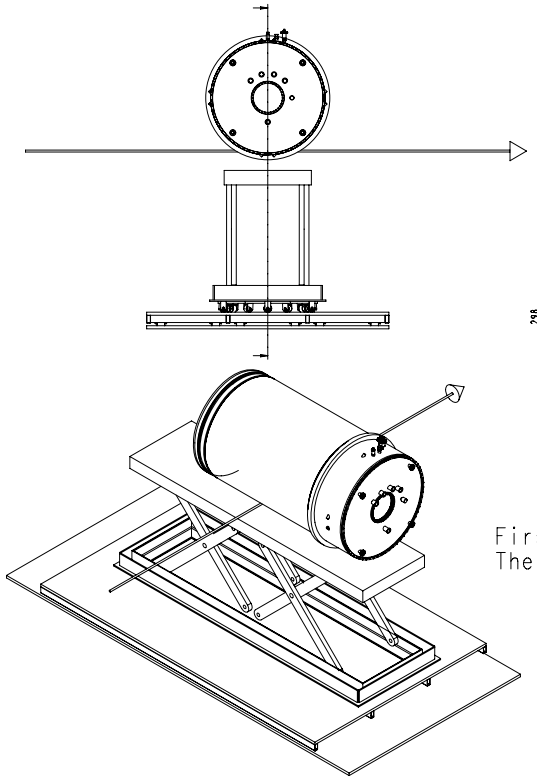
- Magnet will be delivered in the middle of year
- Location is fixed
- Periphery in preparation
  - Location of helium dewar fixed
  - Orientation of magnet
    - To access the large opening best

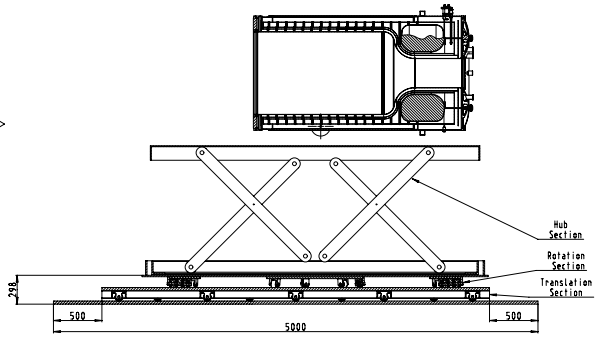


- Discussion with Yasuhiro Makida from KEK
  - Magnet can be operated while completely disconnected from cryo line
  - Refilling required every 9 days
  - Refilling and ramping of the magnet are expert task (one expert from DESY or training will be provided)
  - Instructions will be translated into English

Magnet from KEK

- Horizontal and vertical movement to cover the inner bore of the magnet. A rotation up to 30° might also be achievable.
- To start, we put the PCMAG on a concrete block and adjust it to the theoretical beam





First Iteration:
The PCMAG will be put one bare concrete block!

The PCMAG Support System.

Summary

- Activities for the infrastructure started
- With the input from the community we hope to have a clearer picture of the mechanical setup in the near future
- Looking forward to the first testbeam measurements