PROTON IRRADIATION FACILITY STATUS REPORT

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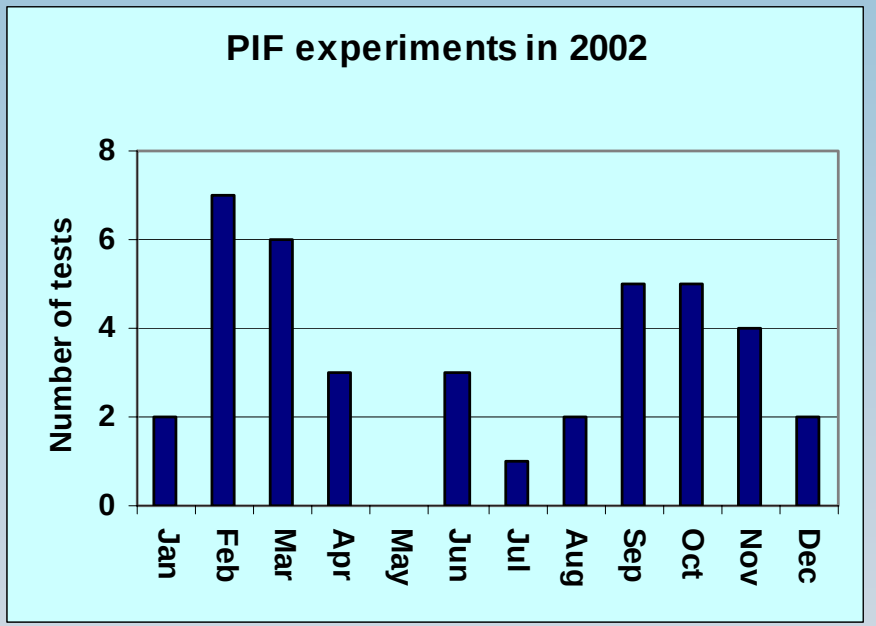
Outline

- PIF Operation 2006
- Users and Tests Highlights
- PROSCAN Project
- PIF in 2007

OPERATION STATISTICS - 2006

- Irradiation period:
  January – December
- Researches from
  20 groups in NEB
  6 groups in PROSCAN
- User exposures in 18 beam blocks
- Beam utilization over 42 days



Beam Time and Test Area Utilization

Area	PROSCAN	NEB	Total
User/PSI tests	10	21	31
Shifts	12	42	54

MAIN USERS

No	Research Institution
1	ESTEC, Noordwijk, Netherlands
2	TEM, PSI Villigen, CH
3	Technical University of Denmark
4	Uni Zürich, CH
5	CERN, Genf, CH
6	CAEN Spa, Viareggio, Italy
7	ASTRIUM SAS, Velizy, France
8	E2V Technologies, Chlemsford,UK
9	IDA, Braunschweig, Germany

No	Research Institution
10	IEEC, Barcelona, Spain
11	INFN, Bologna, Italy
12	HIREX Engineering, Toulouse,France
13	ABB, Lenzburg, CH
14	AME, Horten, Norway
15	INFN, Padova, Italy
16	INTA, Madrit, Spain
17	OAEW, Graz, Austria
18	Nuvonyx Europe, Marcousy, France

EXPERIMENTS HIGHLIGHTS

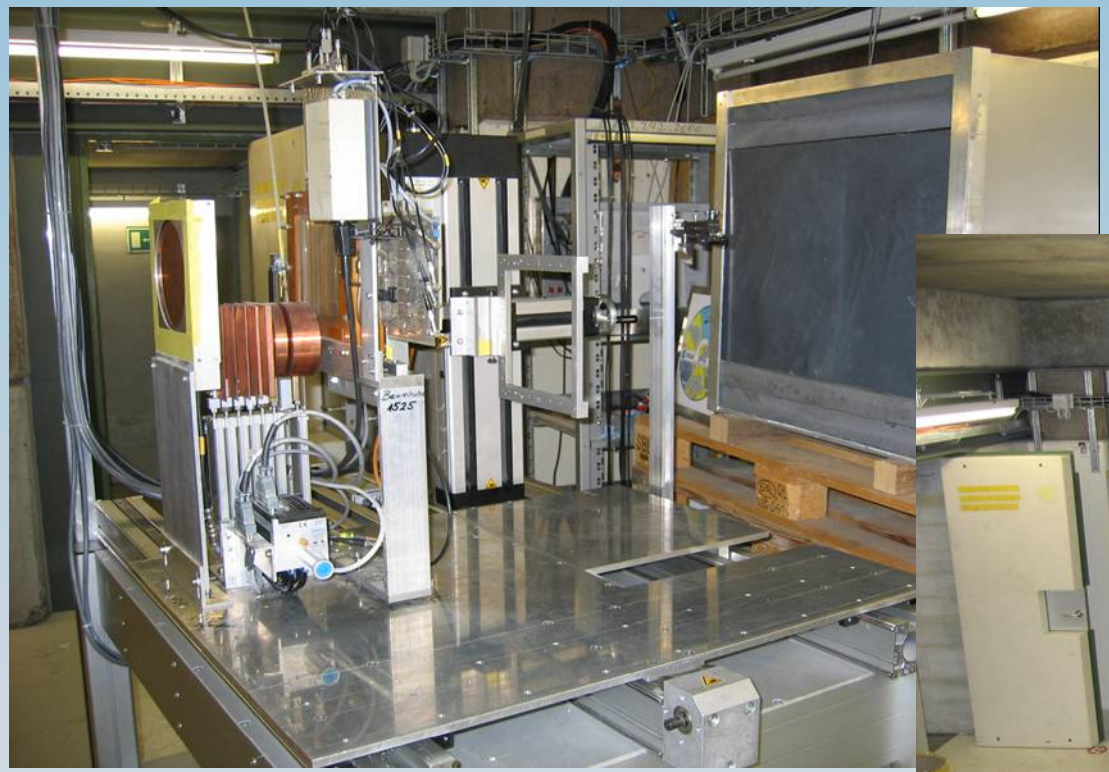
- STAR-Trackers
- Diodes and RADFETS
- LISA Radiation Monitor
- Beam Loss Monitors
- Ionization Chambers
- Shielding Materials
- Activation of Shields
- Wireless Transmitters
- VME Controller
- SRAMs
- FPGAs
- CCDs
- Operational Amplifiers
- DC-DC converters
- Flash Memories
- Optocouplers, Lasers Diodes
- Power Rectifiers
- High Voltage Devices

HIGH ENERGY SITE AT PROSCAN TEST AREA

Entrance to Test Area

Temporary Measurement Room

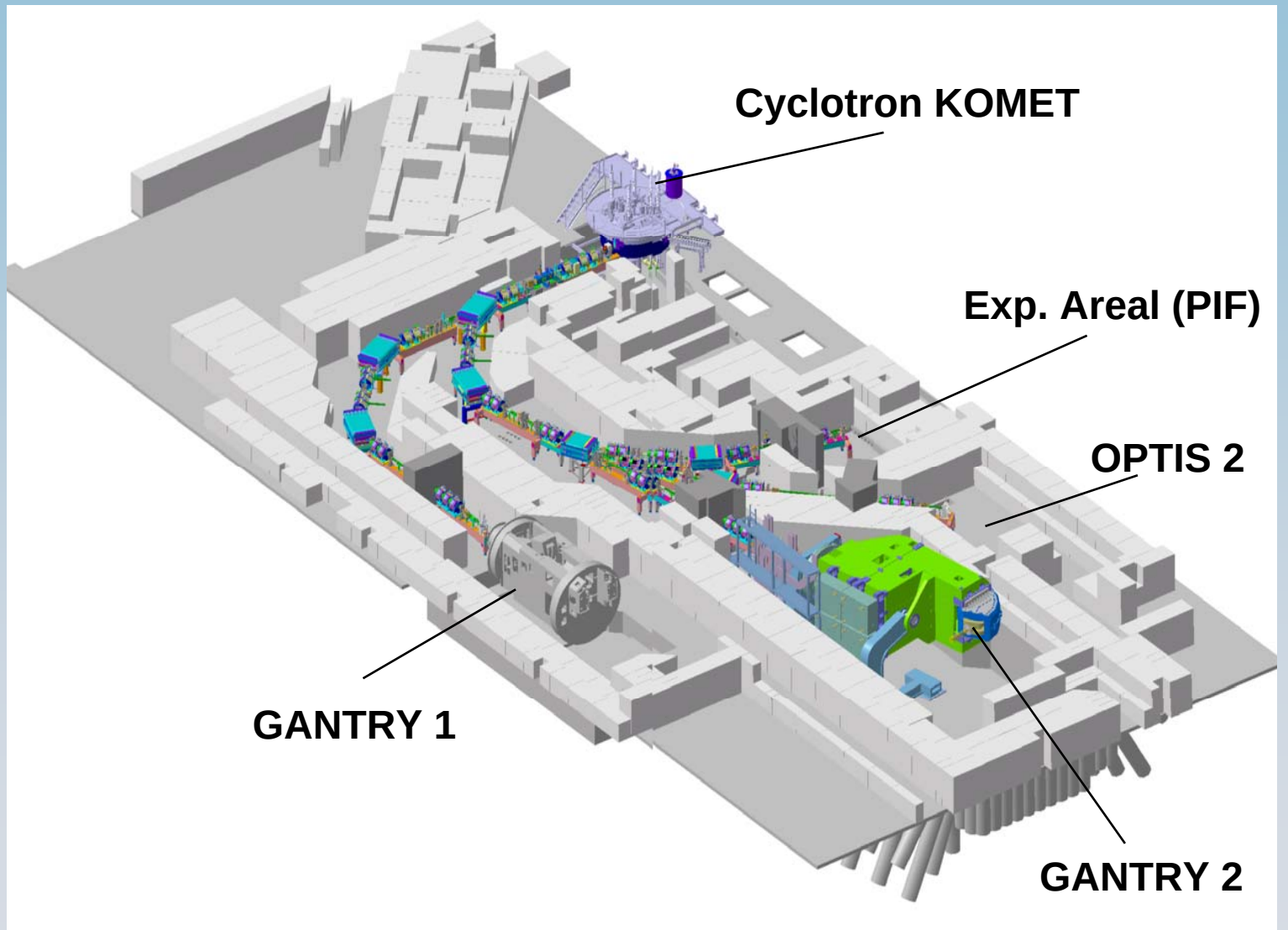
HIGH ENERGY SITE AT PROSCAN TEST AREA



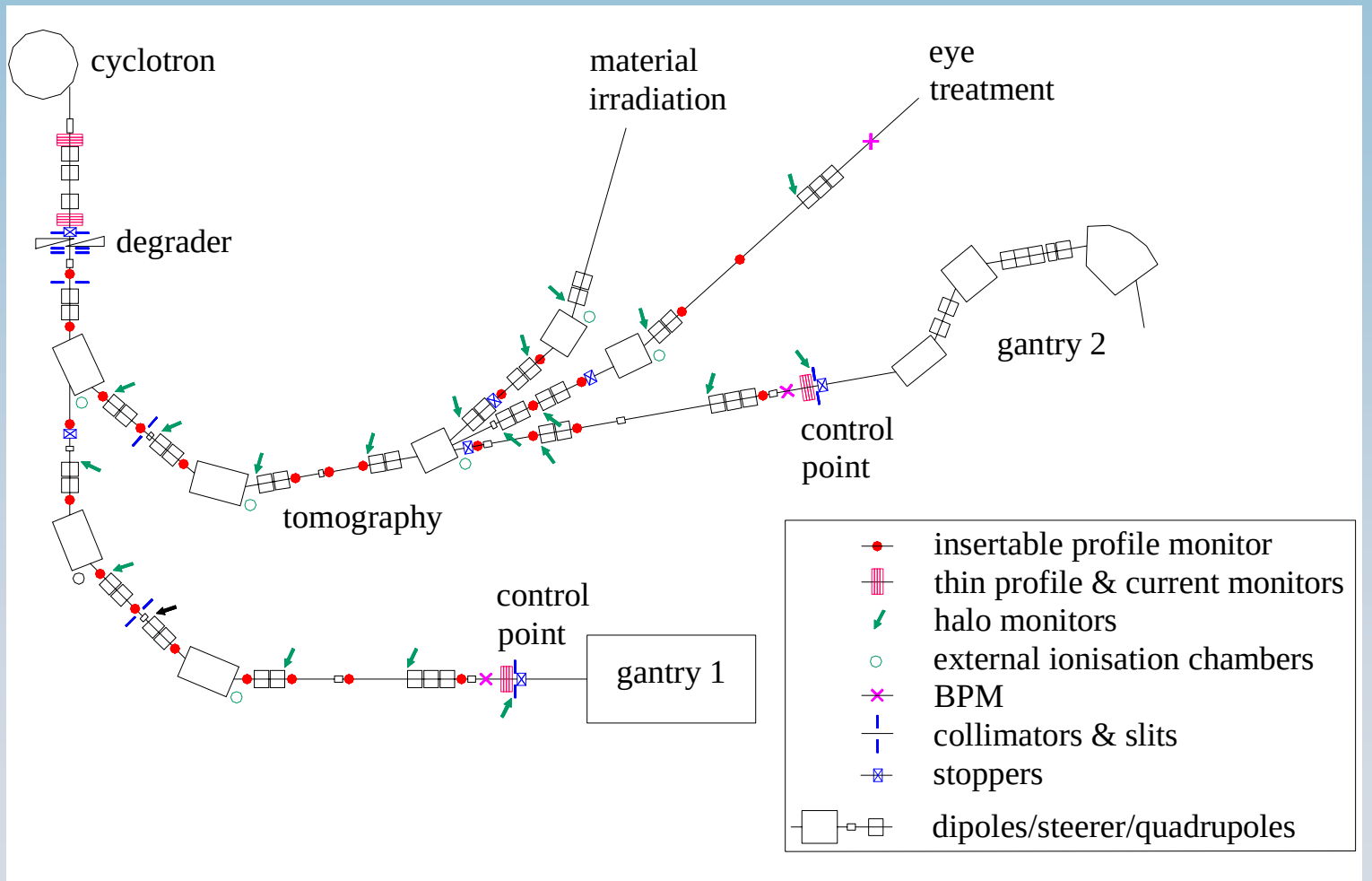
PIF Station

Beam Exit towards PIF

PROSCAN EXPERIMENTAL SITES I.



PROSCAN BEAM LINES DIAGNOSTICS



CONSTRUCTION STATUS

Dismounting Test Area – Jan 07

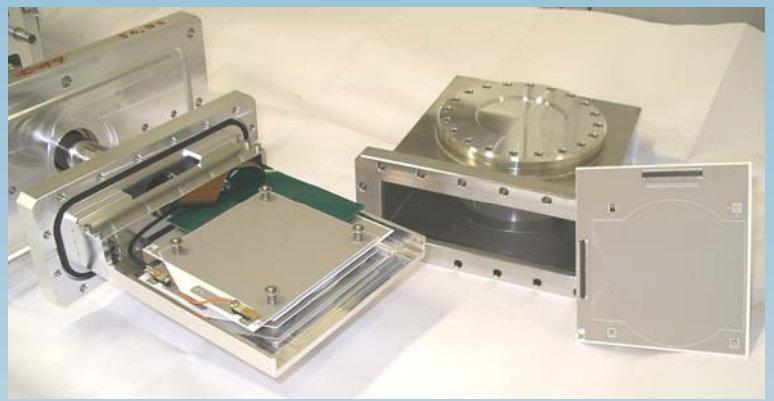
CONSTRUCTION STATUS

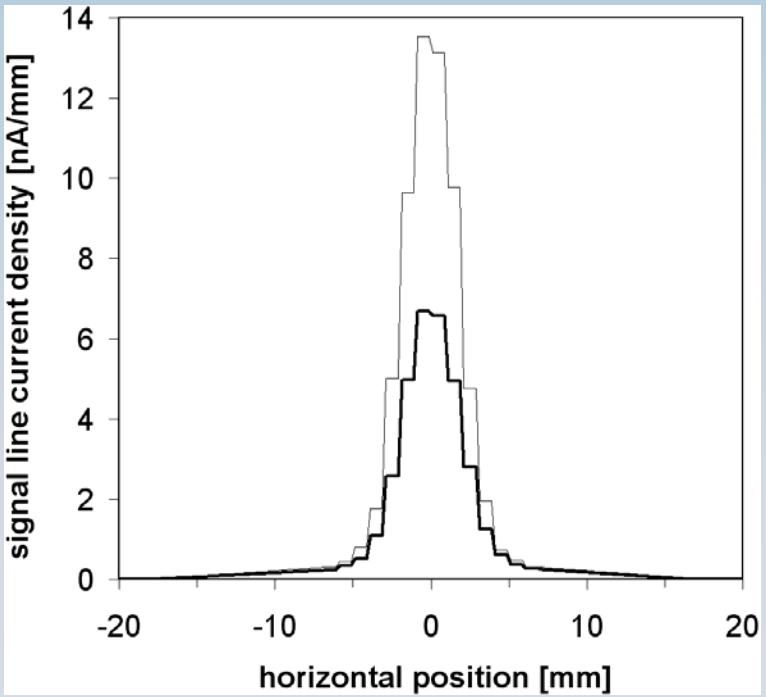
PROSCAN Site at Banding Magnet (Test Area)

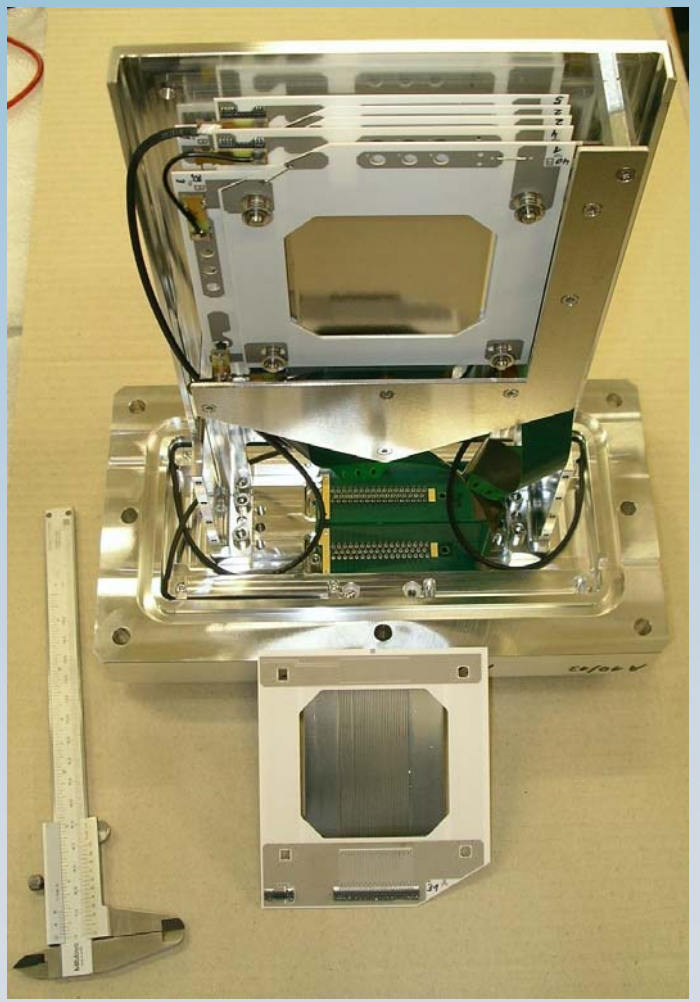
CONSTRUCTION STATUS

Future PIF Area

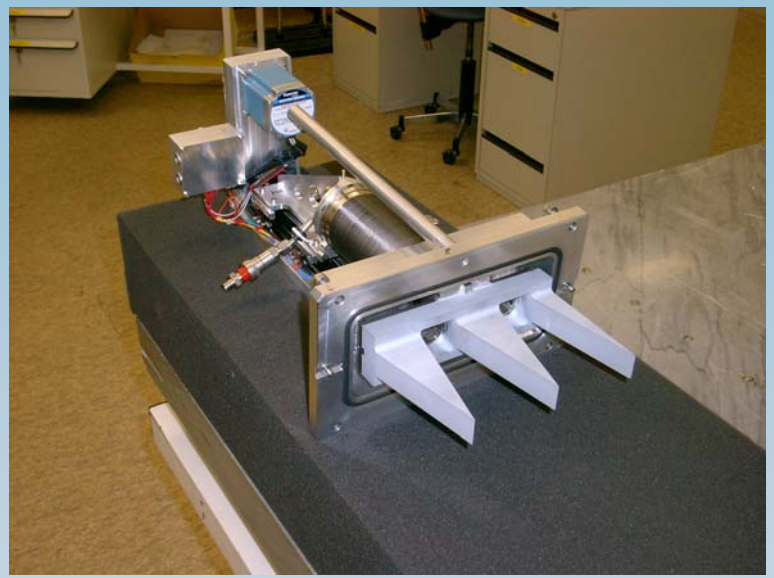
DIAGNOSTICS – BEAM MONITORS



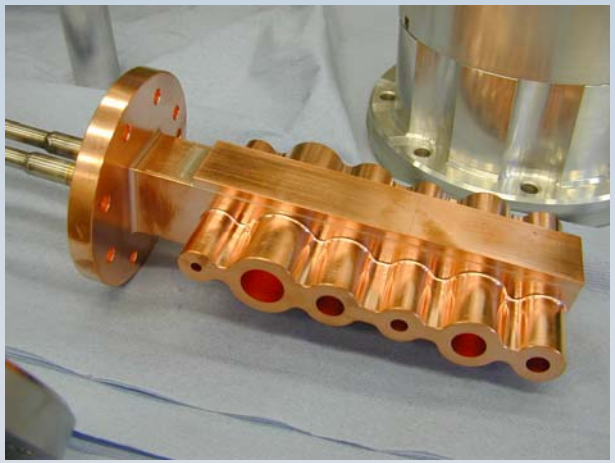




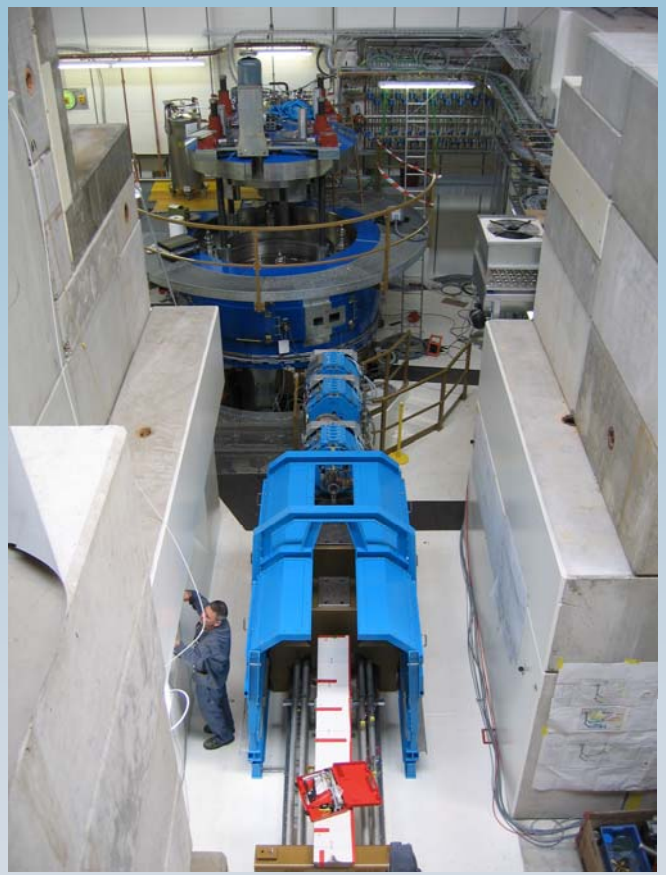
ENERGY DEGRADER



Degrading Plates

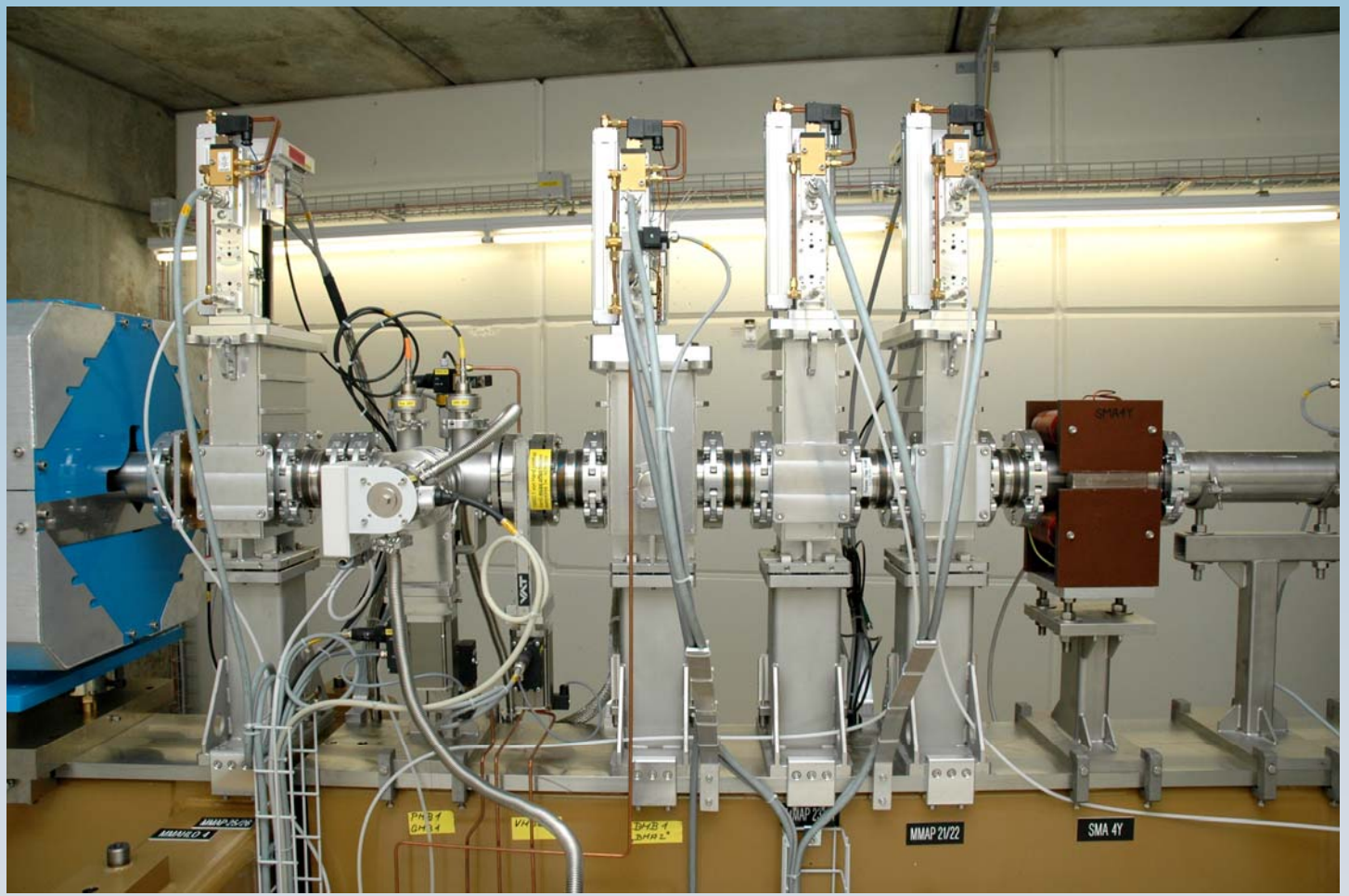


Collimators

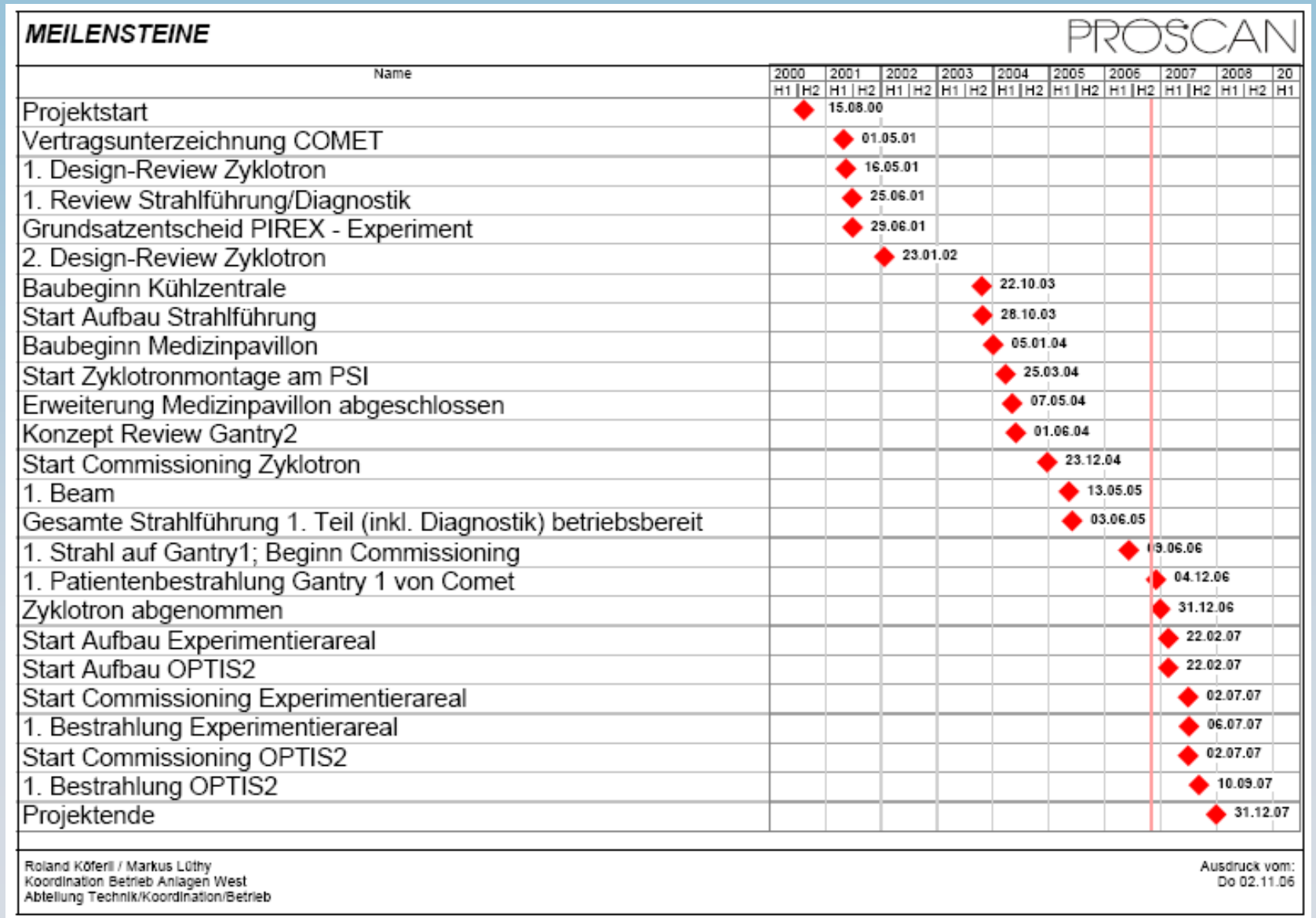


Location close to Cyclotron

PART OF BEAM LINE



SCHEDULE


MEILENSTEINE
PROSCAN
Name
2000 H1 H2
2001 H1 H2
2002 H1 H2
2003 H1 H2
2004 H1 H2
2005 H1 H2
2006 H1 H2
2007 H1 H2
2008 H1 H2
20 H1
Projektstart 15.08.00
Vertragsunterzeichnung COMET 01.05.01
1. Design-Review Zyklotron 16.05.01
1. Review Strahlführung/Diagnostik 25.06.01
Grundsatzentscheid PIREX - Experiment 29.06.01
2. Design-Review Zyklotron 23.01.02
Baubeginn Kühlzentrale 22.10.03
Start Aufbau Strahlführung 28.10.03
Baubeginn Medizinpavillon 05.01.04
Start Zyklotronmontage am PSI 25.03.04
Erweiterung Medizinpavillon abgeschlossen 07.05.04
Konzept Review Gantry2 01.06.04
Start Commissioning Zyklotron 23.12.04
1. Beam 13.05.05
Gesamte Strahlführung 1. Teil (inkl. Diagnostik) betriebsbereit 03.06.05
1. Strahl auf Gantry1; Beginn Commissioning
1. Patientenbestrahlung Gantry 1 von Comet 04.12.06
Zyklotron abgenommen 31.12.06
Start Aufbau Experimentierareal 22.02.07
Start Aufbau OPTIS2 22.02.07
Start Commissioning Experimentierareal 02.07.07
1. Bestrahlung Experimentierareal 06.07.07
Start Commissioning OPTIS2 02.07.07
1. Bestrahlung OPTIS2 10.09.07
Projektende 31.12.07
Roland Köferli / Markus Lüthy
Koordination Betrieb Anlagen West
Abteilung Technik/Koordination/Betrieb
Ausdruck vom:
Do 02.11.06

SUMMARY

- PIF in 2006 operated using old low energy (70 MeV) site as well as temporary high energy site (250 MeV)
- About 18 user test blocks and 42 beam days
- User community very broad (space, HE Physics, industry)
- PROSCAN experimental PIF area construction from Feb07
- New PIF facility commissioning and first beams in Jul07
- Good beam diagnostics due to new, integrated monitors
- Easy operation with two degraders (main and local)
- Good energy resolution at low energies