

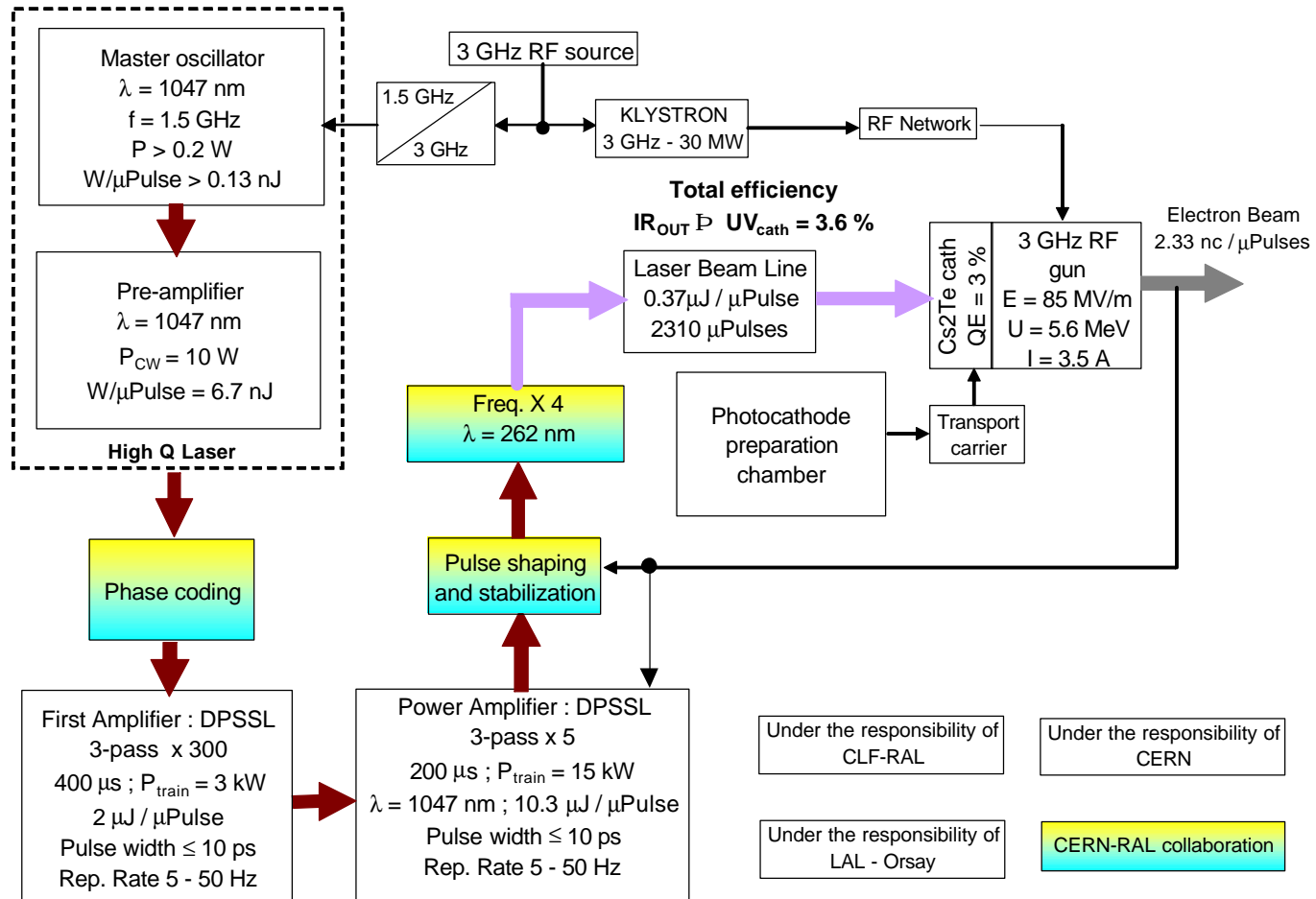
CERN activities within the PHIN framework

May – October 2004

- CERN main topics
- RF gun
- Laser
- Photocathode studies
- Photo-injector installation
- Schedule

CERN main topics

- Photocathode studies
- Design, construction, installation and commissioning of the CTF3 photo-injector



RF gun of the CTF3 drive beam

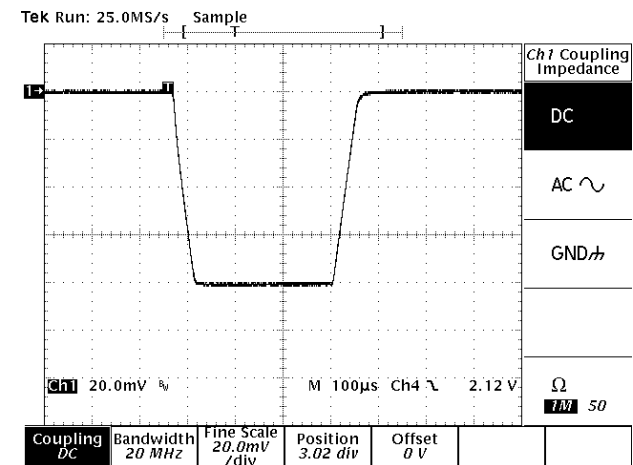
RF gun design & construction by LAL

- Participation in the design
 - ★ 4 videoconferences since May 2004
- CERN contribution:
 - ★ e-beam parameter list, photocathode properties
 - ★ CTF experiments
 - ★ e-beam optics

LASER of the CTF3 drive beam

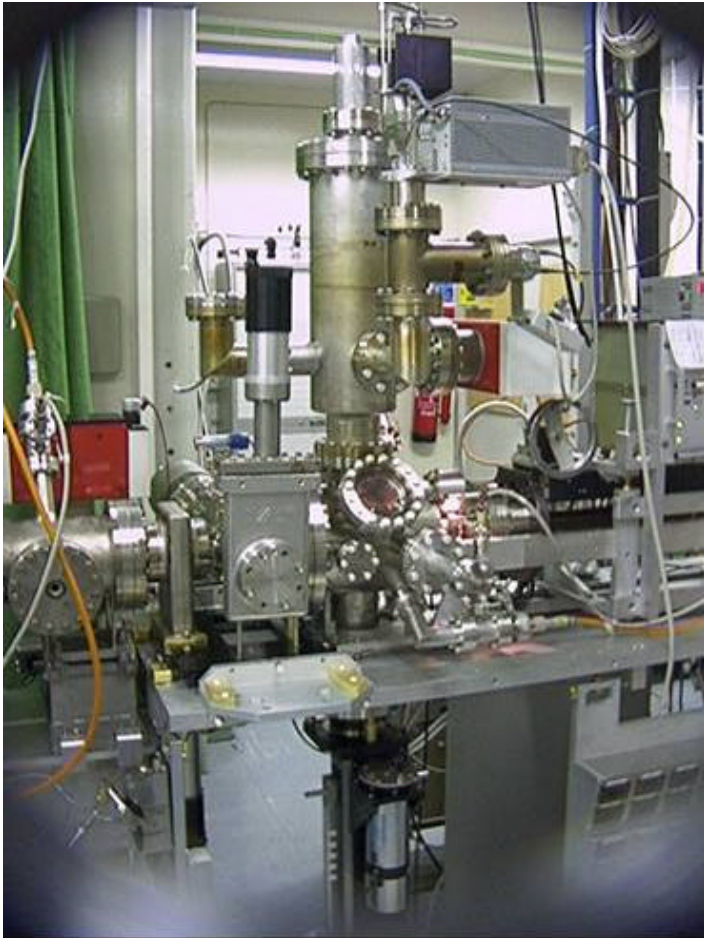
LASER design & construction by RAL

- Participation in the design
 - ★ 3 videoconferences since May 2004
- CERN contribution
 - ★ Design of the 1.5 GHz RF source and the ps timing
 - ★ Prototype of a diode power supply
 - ★ Call for tender and order of the 1.5 GHz laser oscillator within RAL specs.
 - ★ Call for tender of 18 kW pumping diodes within RAL specs.



100 A / 100 V – 50 Hz
Flat top stability : better than 0.1 %

Photocathodes

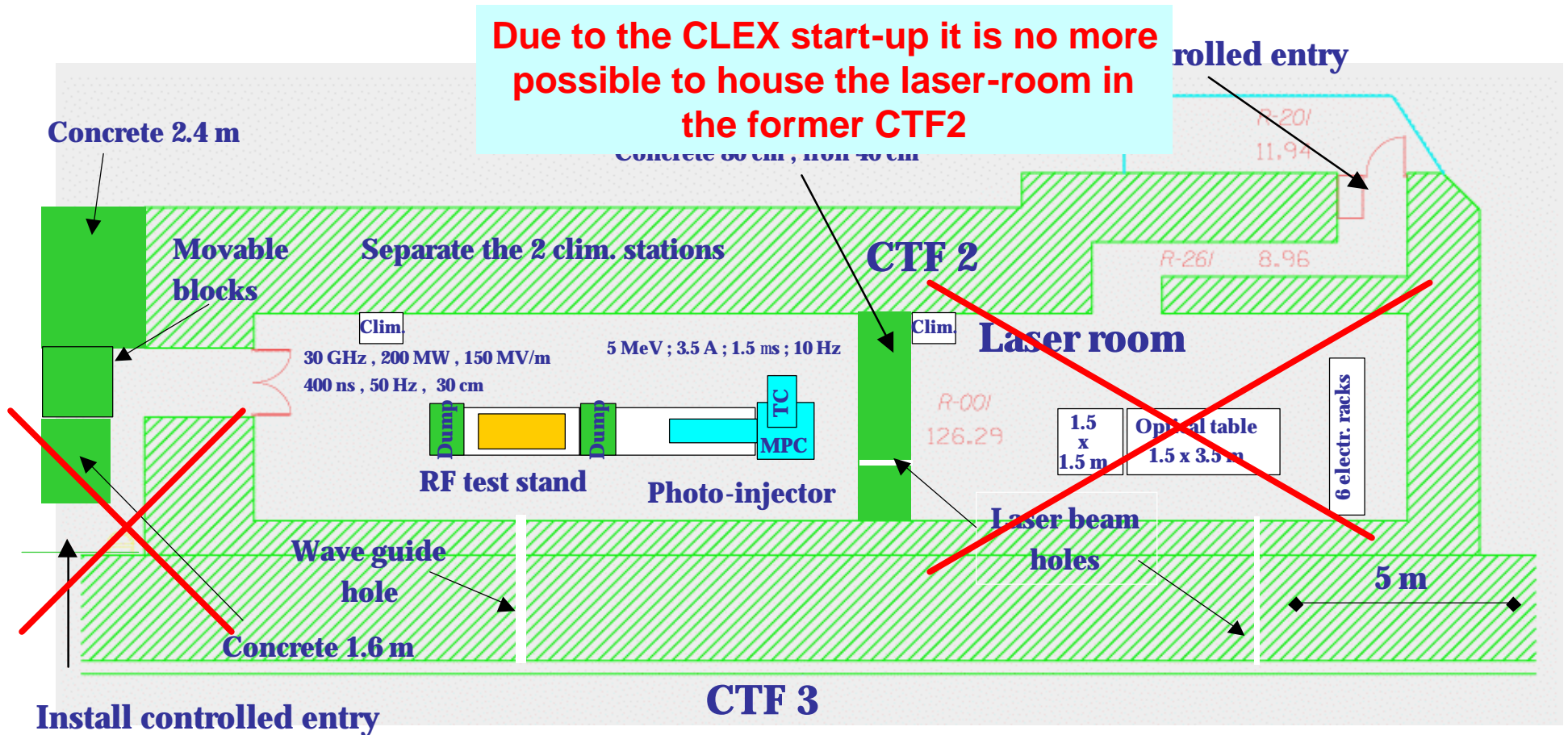


- The rejuvenation of the preparation chamber is completed
- A new port has been added to allow cathode transfer for analysis without breaking the vacuum (XPS)
- Design study of a small transport chamber between preparation chamber and XPS analysis bench, is completed
- A new mass spectrometer with mass up to 200 has been installed
- A new bake-out installation, clean-room compatible, was designed and ordered. Installation expected for the end of November.

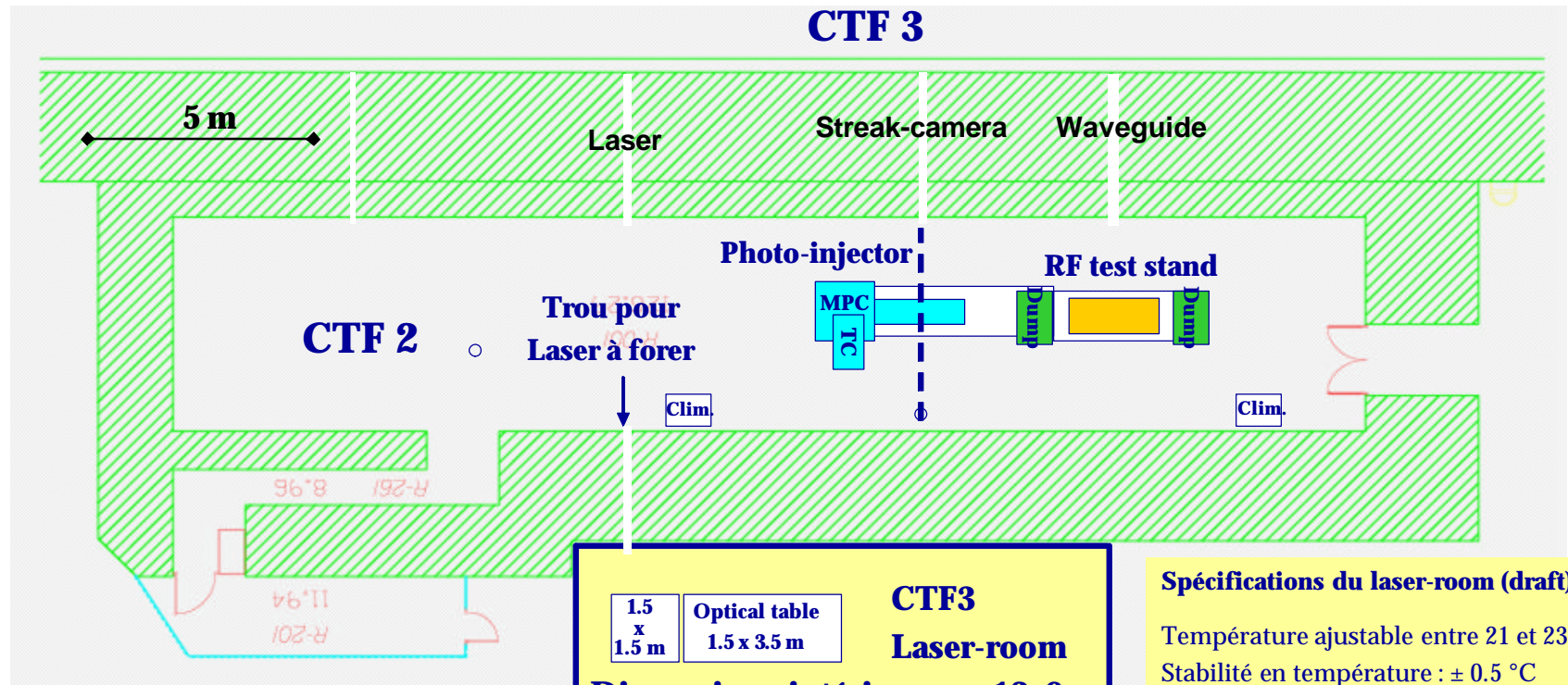
Photo-injector installation

- In a first step the photo-injector will be installed and commissioned in the former CTF2

Due to the CLEX start-up it is no more possible to house the laser-room in the former CTF2



New proposal for the CTF3 Laser-room



Spécifications du laser-room (draft)

Température ajustable entre 21 et 23 °C
 Stabilité en température : ± 0.5 °C
 Pour -20°C = T_{ext.} = 40 °C

Variations entre CTF3 et Laser-room :
 = ± 15 µrad à f > 20 mHz
 = ± 60 µrad à f < 20 mHz
 Les dérives lentes < 0.5 mm/h jusqu'à
 ± 3 mm peuvent être compensées

**New laser-room outside CTF2
 under study and estimation.
 End of building : march 2005
 with adequate resources**

CERN schedule inside the PHIN program



Operational photo-injector in the CTF2 in the end of 2006

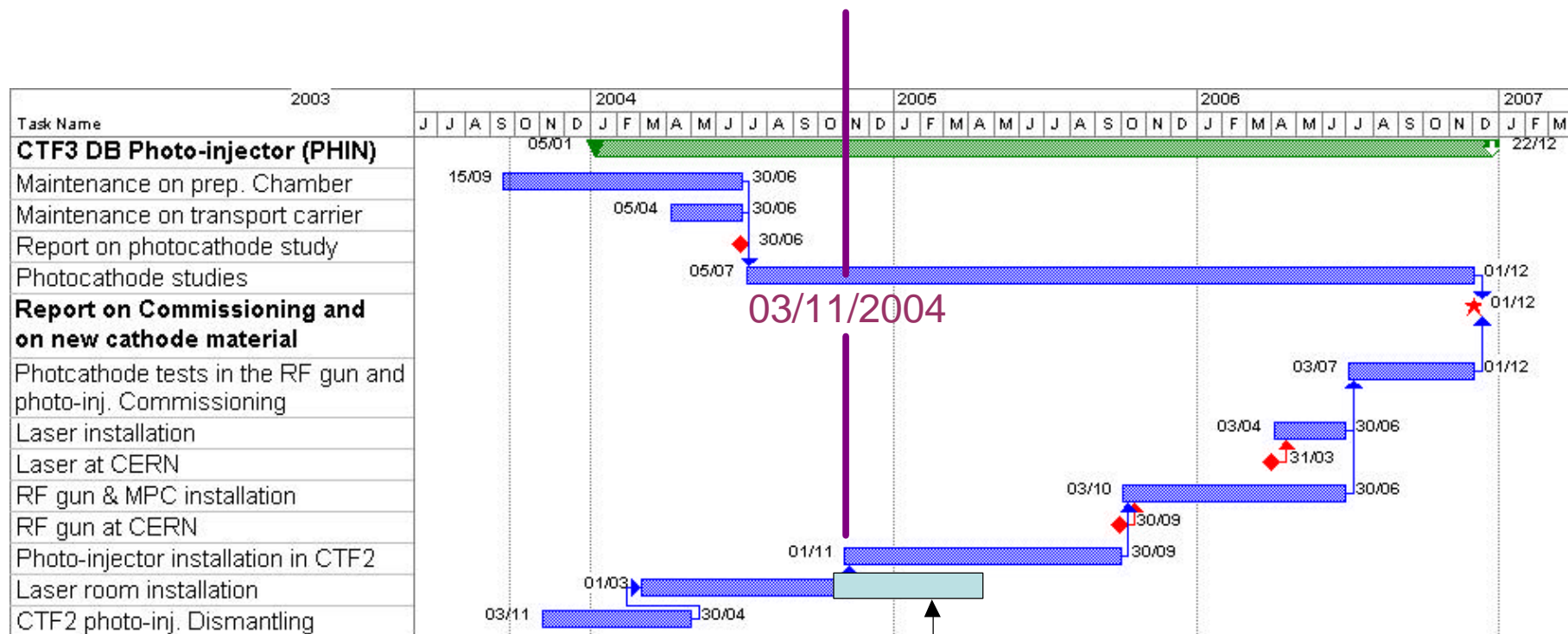


Photo-injector and laser-room installation no more connected.
 No incidence on the final delivery time with adequate resources