

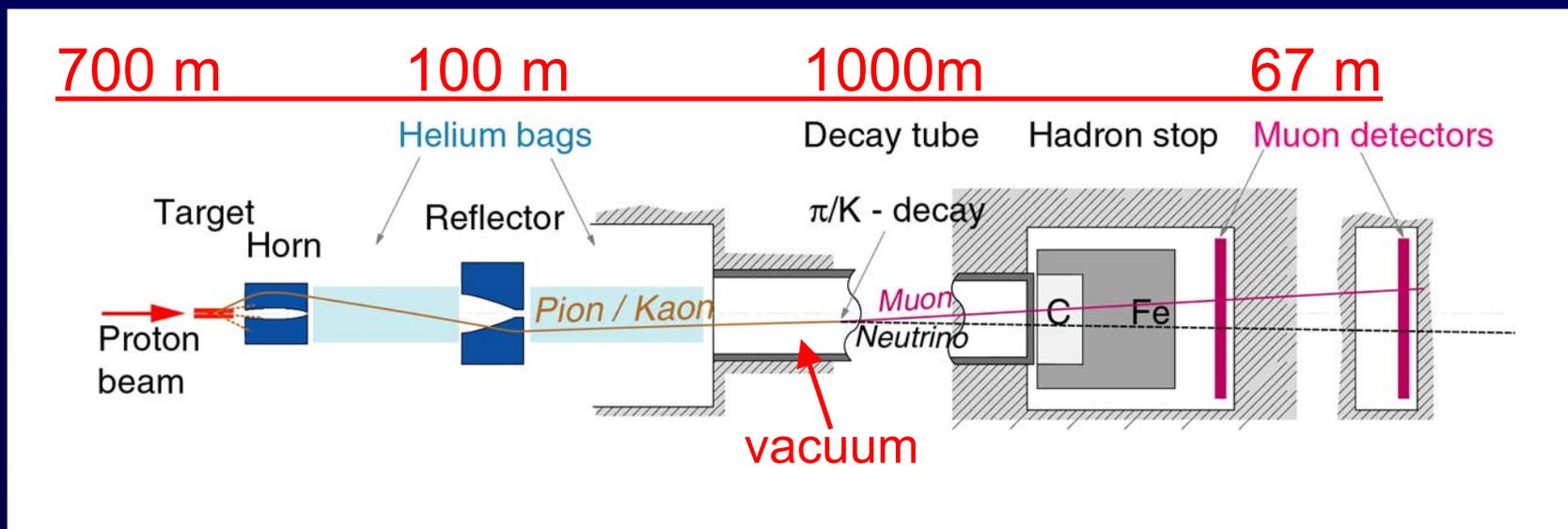


CNGS - Status of works

presented by

Konrad Elsener, CERN SL Division

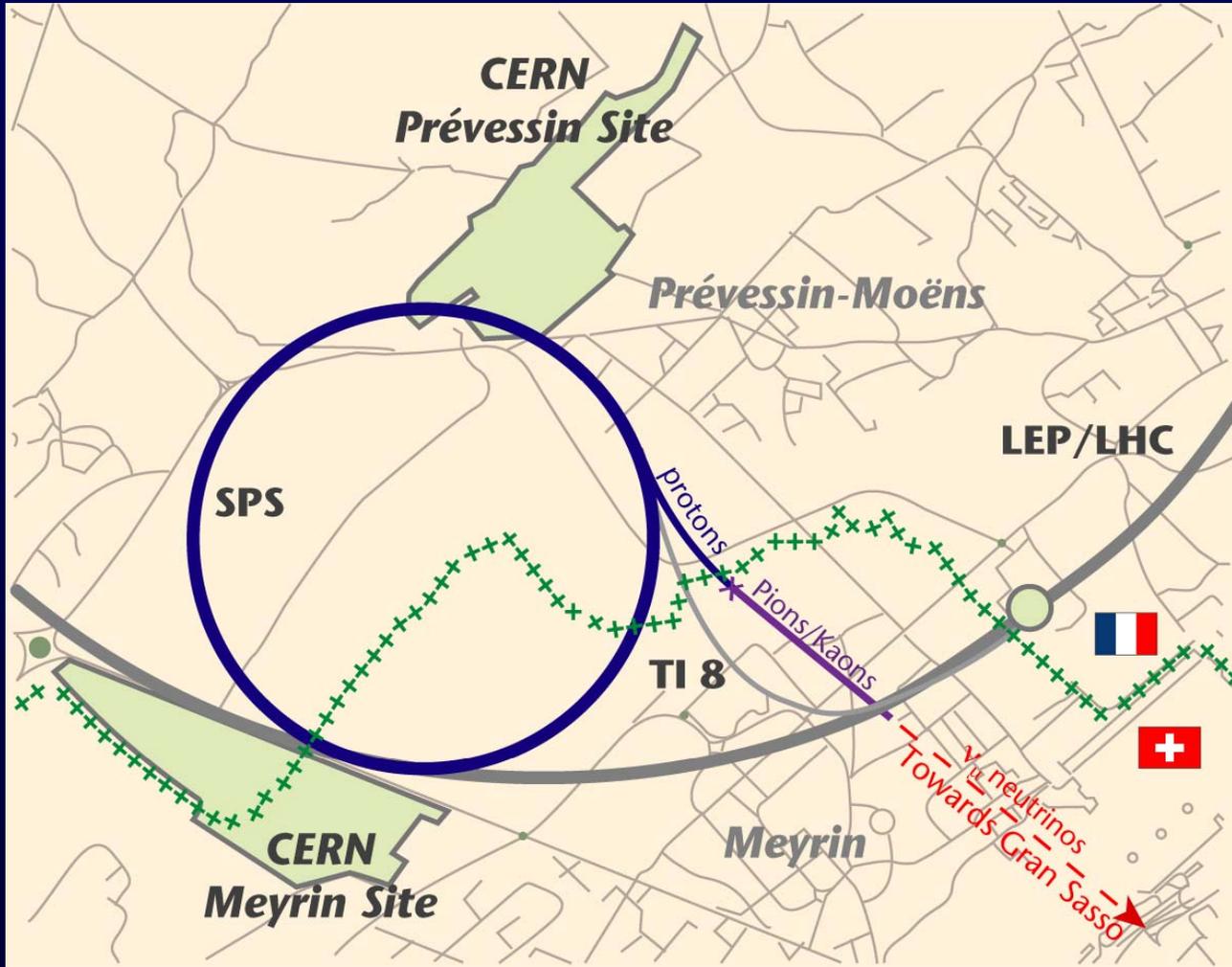
CNGS: the main components



Proton beam (1)



New fast extraction system at point 4 of SPS
(common with LHC): **FIRST TESTS IN 2003**



Proton beam (2)



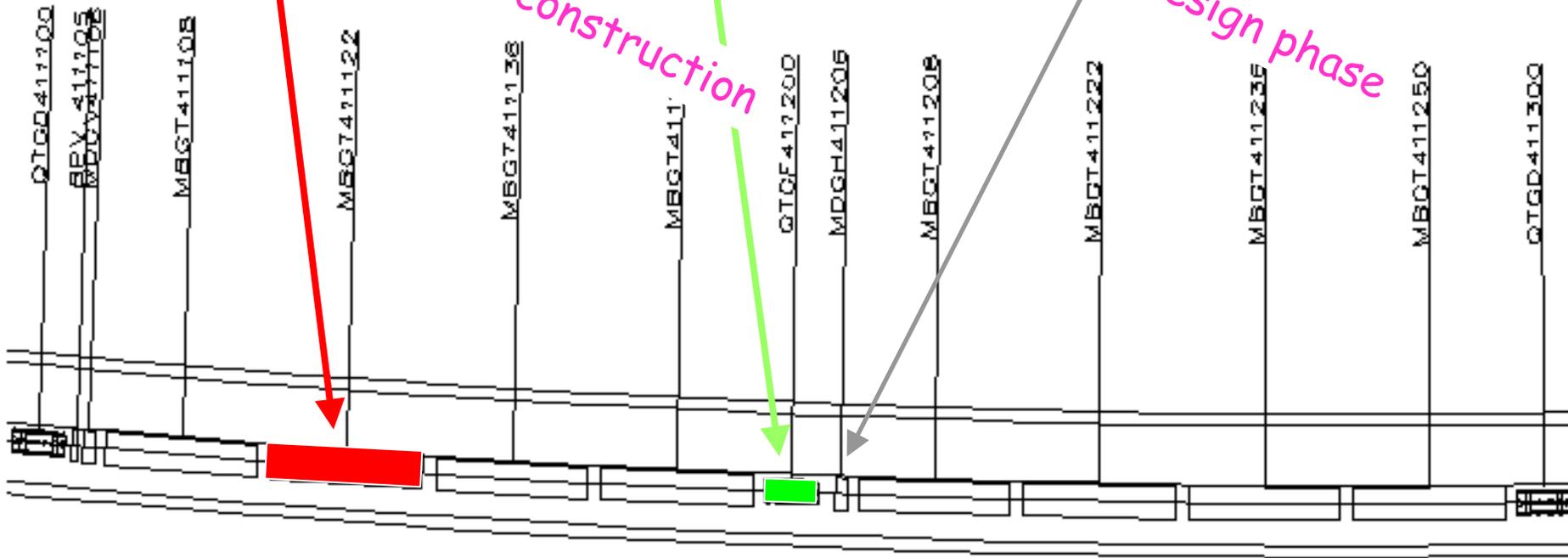
73 deflection (dipole) magnets (6.4 m long) +

21 quadrupole magnets + correction dipoles

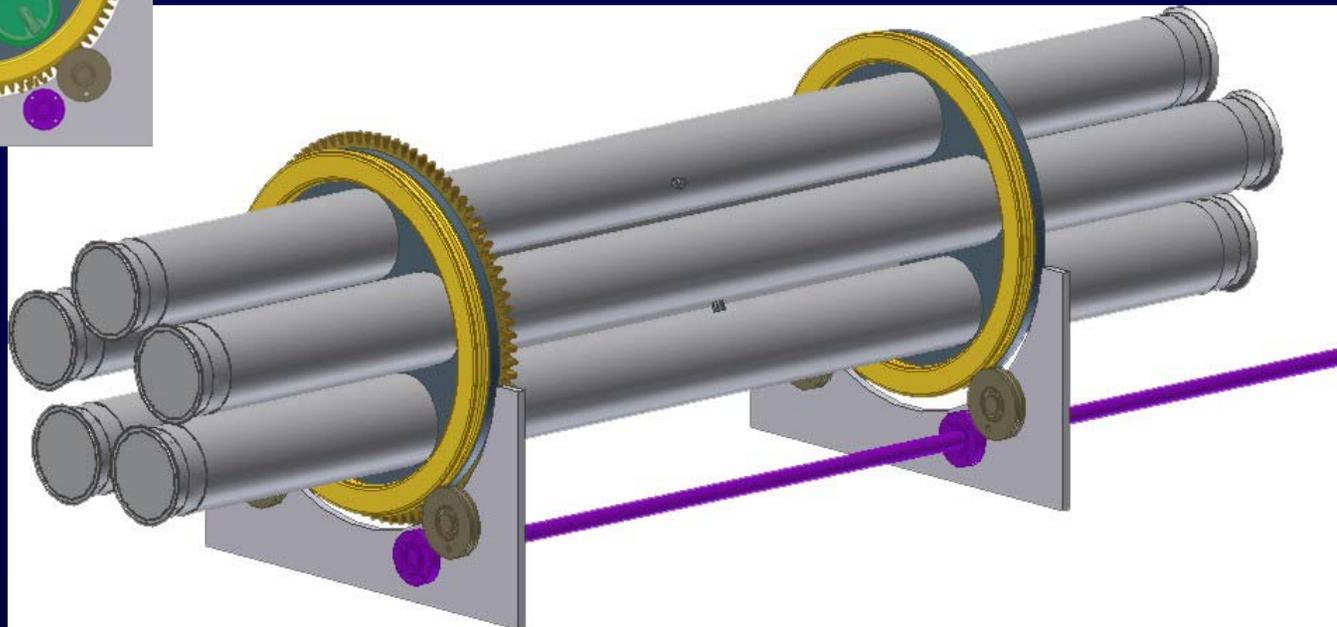
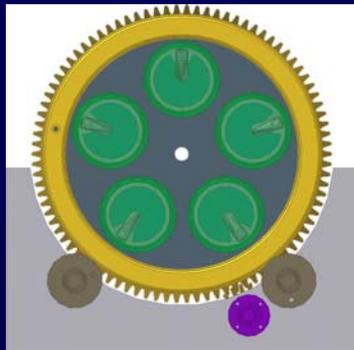
+vacuum + beam observation + ...

prototypes under construction

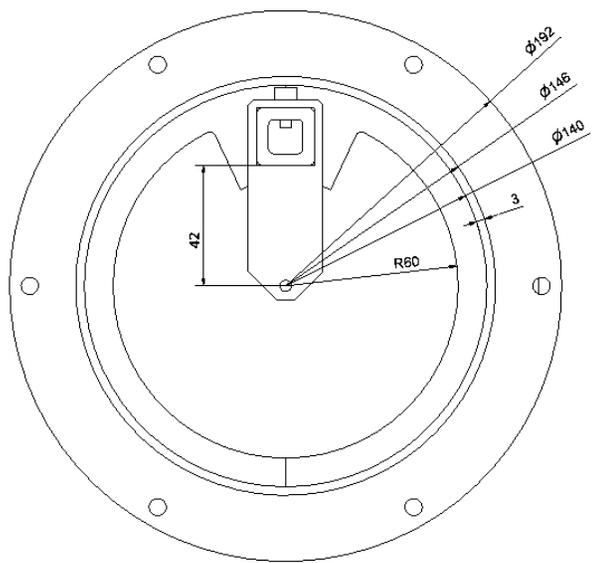
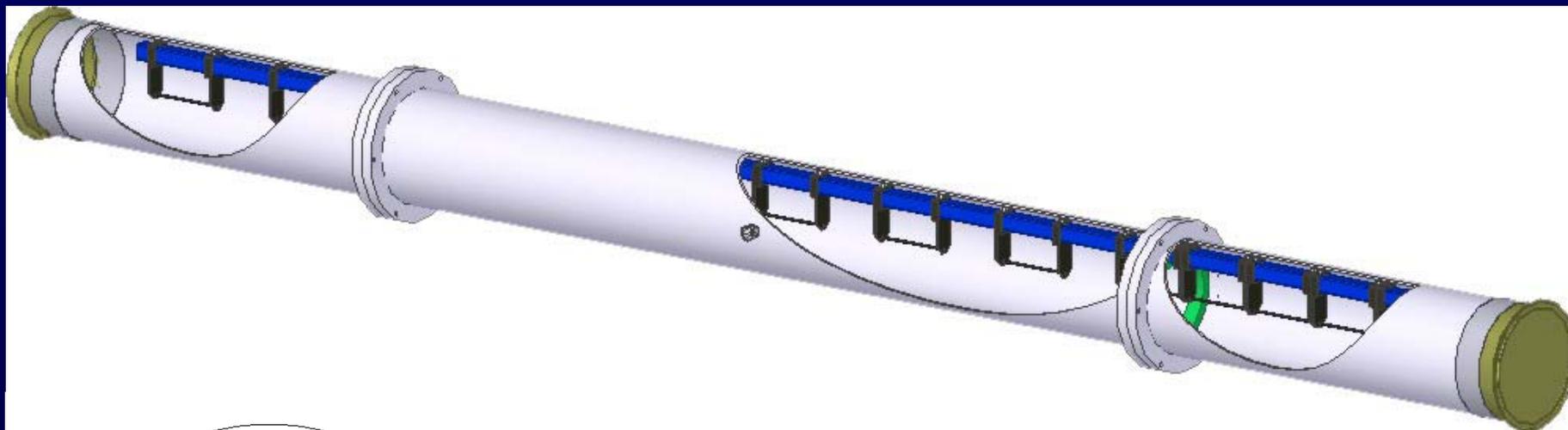
design phase



Target Box - under design (5 target units, i.e have spares in-situ)



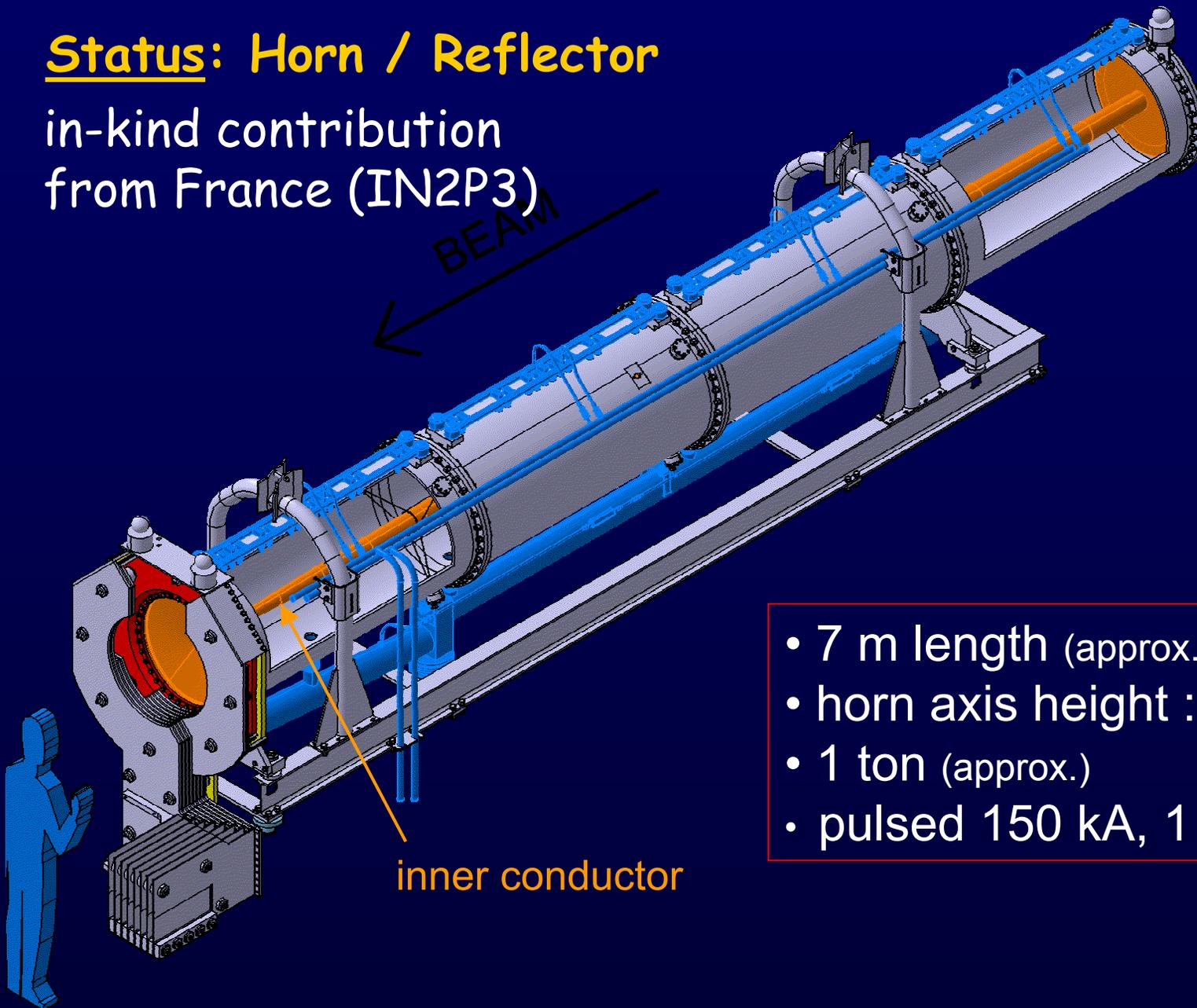
Target Unit



13 graphite elements, 10 cm long, ϕ 4 or 5 mm
elements held by C-C "cards", inside Ti tube
overall target length: 2 metres

Status: Horn / Reflector

in-kind contribution
from France (IN2P3)

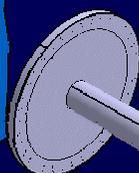


- 7 m length (approx.)
- horn axis height : 1.6 m
- 1 ton (approx.)
- pulsed 150 kA, 1 ms

Inner conductor

⇒ most difficult part of a magnetic horn

under construction at CERN Workshop

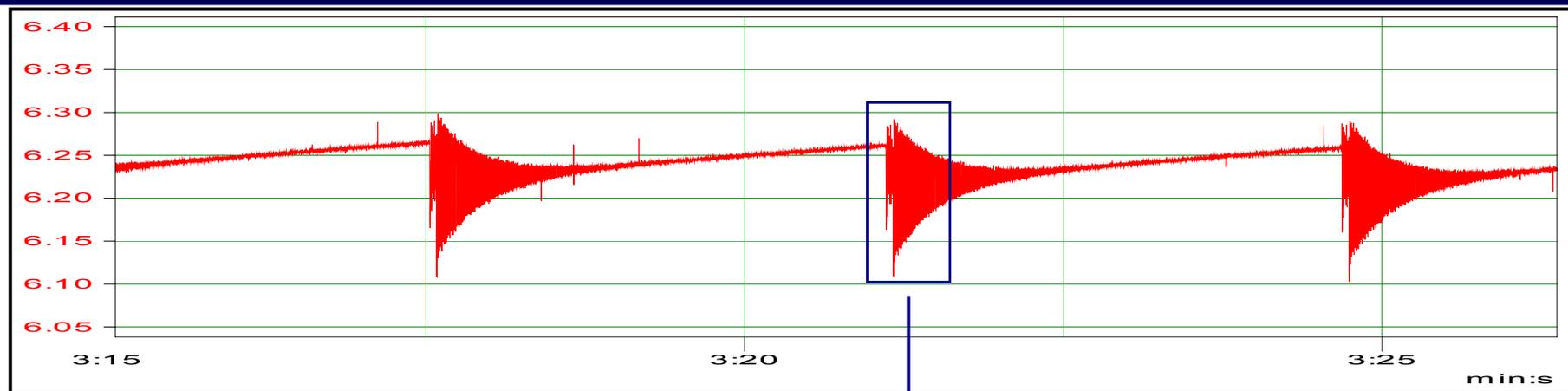


- length : 6.65 m
- min. thickness : 1.8 mm
- diameter : 30.8 to 136 mm
- made up of 9 conical parts and 2 flanges



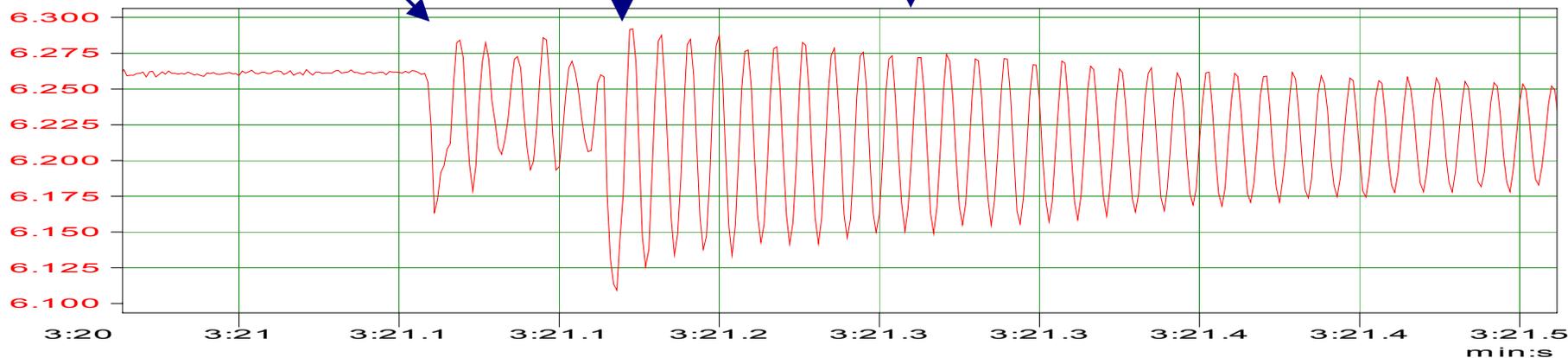
Mechanical stress from electric pulsing:

Experimental results on prototype horn (W. Coosemans, CERN)



1st pulse

2nd pulse



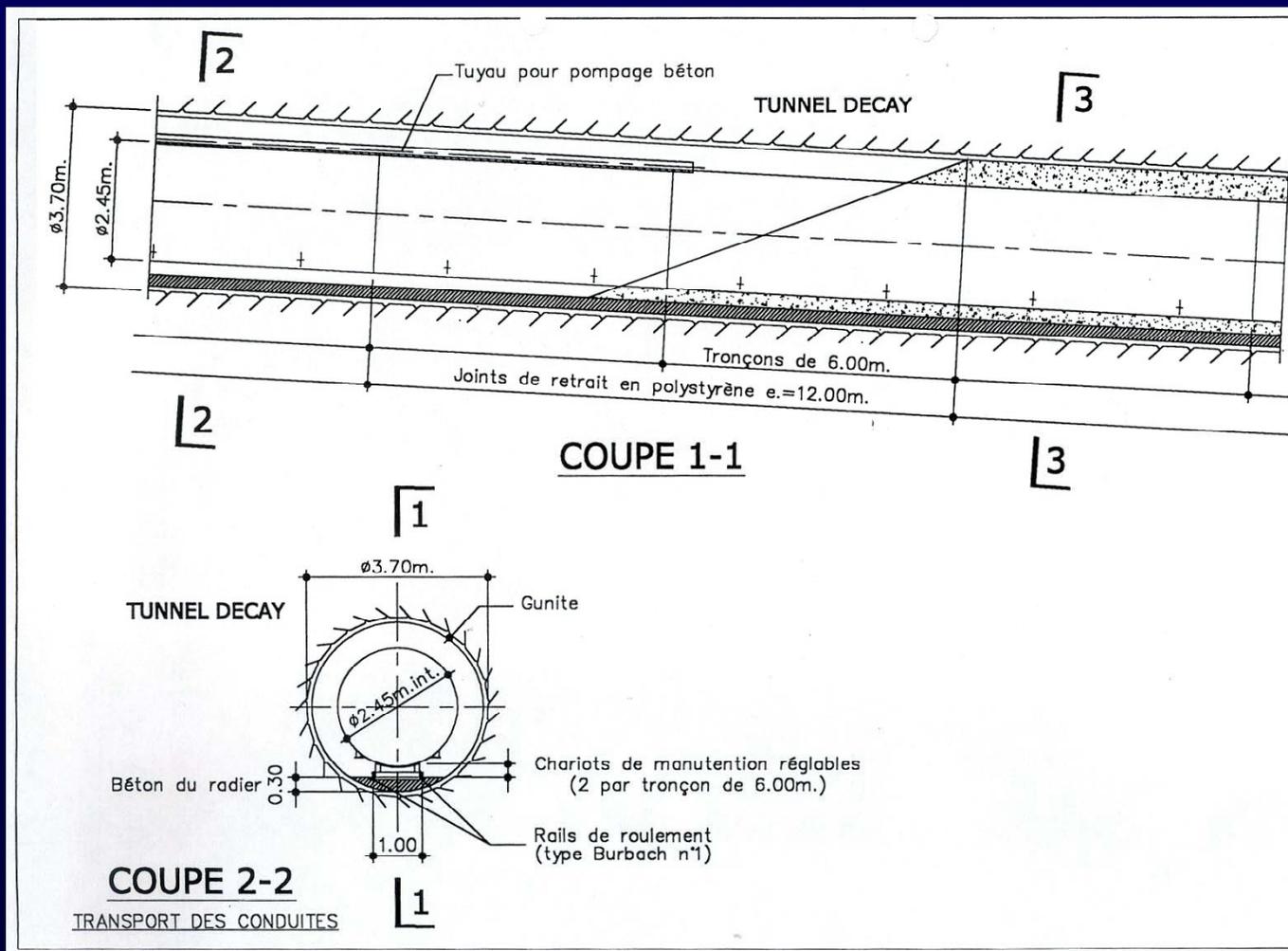
Status: Decay Vacuum Tube

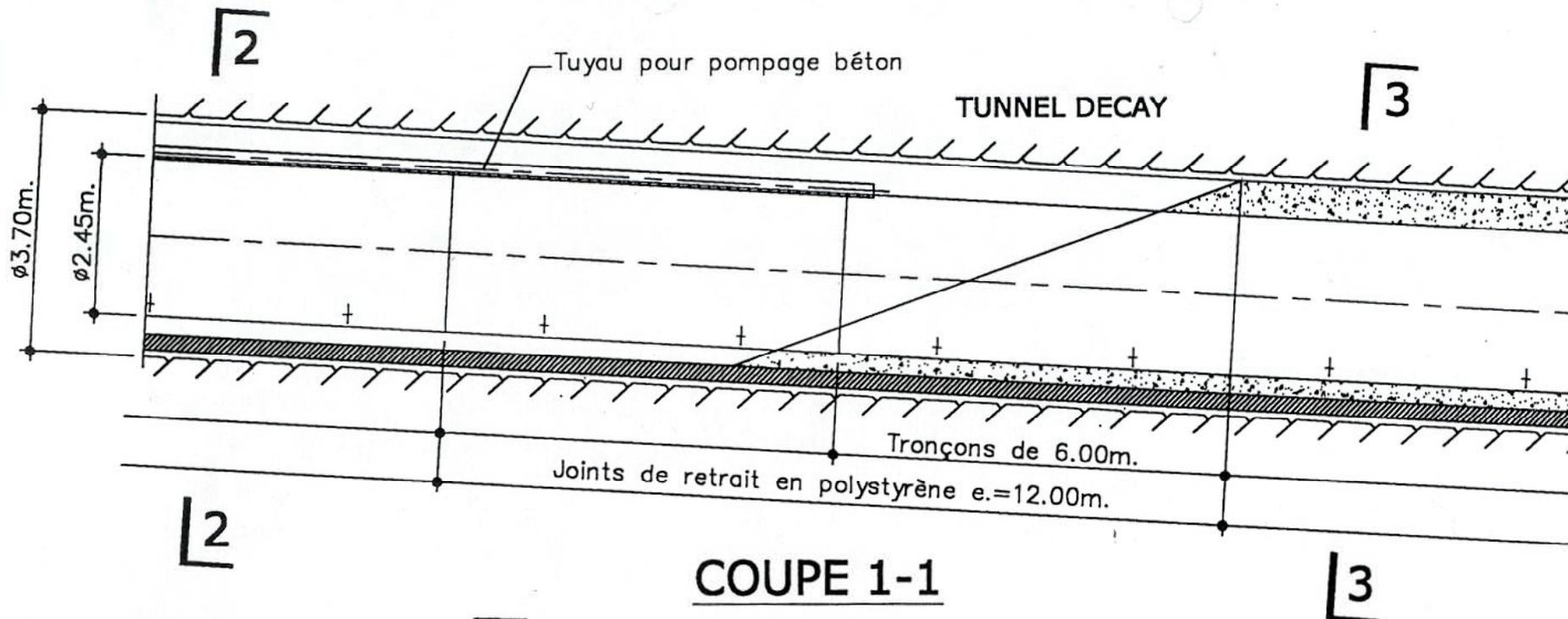
steel tube $\phi=2.45$ m
(6 m long sleeves)
welded in-situ;

-> buried in
concrete

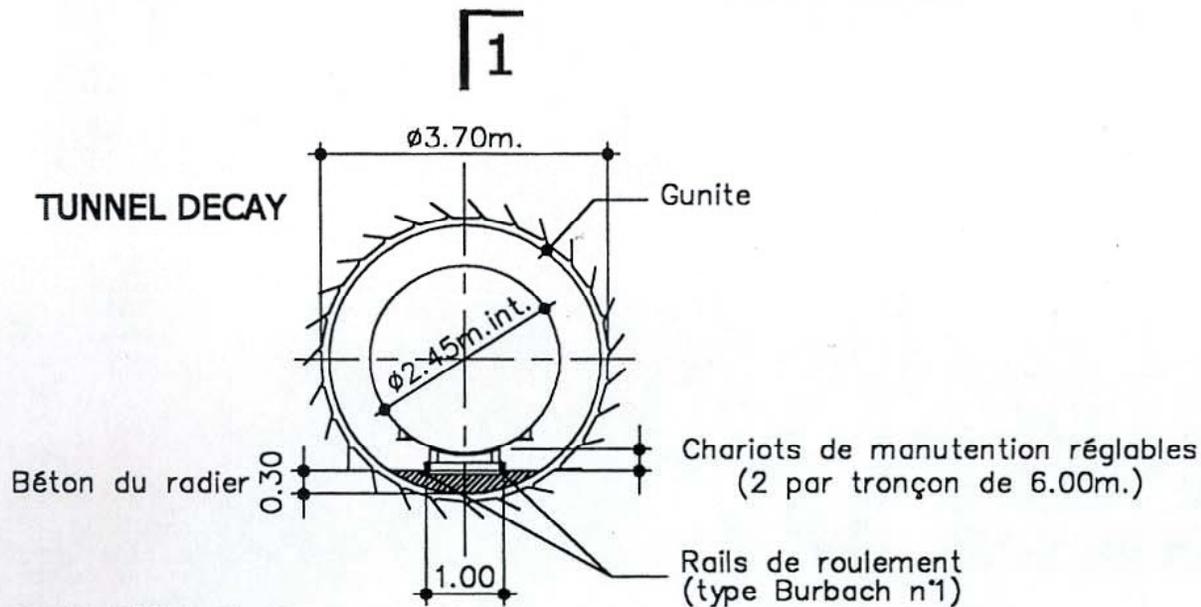
Adjudication:
19 Sept. 2002

Works:
 \approx August 2003 -
 \approx February 2004



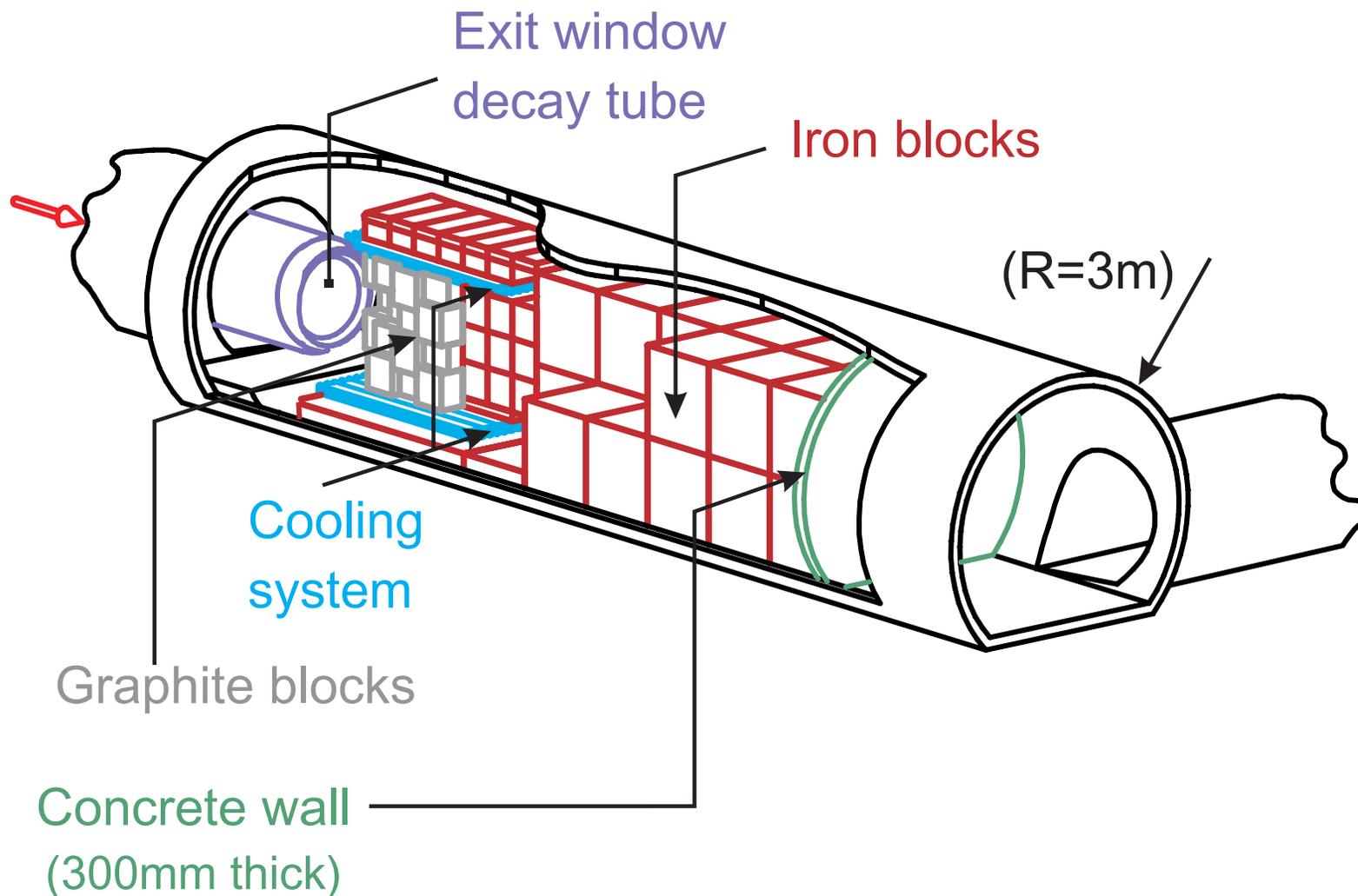


COUPE 1-1

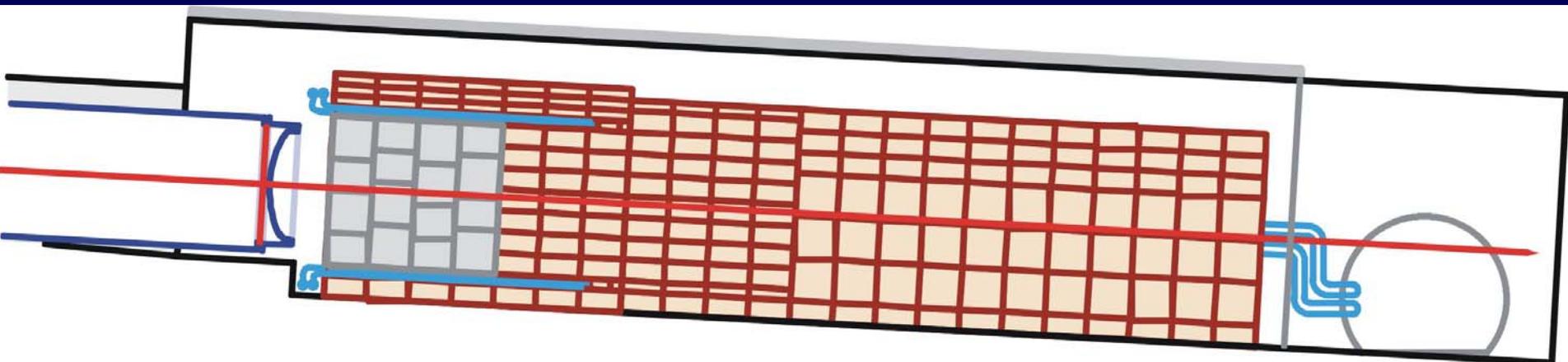


COUPE 2-2

Hadron stop (beam dump)



- ◆ Design is ready
- ◆ Graphite blocks: call for tender
- ◆ Iron blocks recuperated from WANF



Installation: summer 2003

490 iron blocks,
56 graphite blocks,
16 aluminum blocks + ...



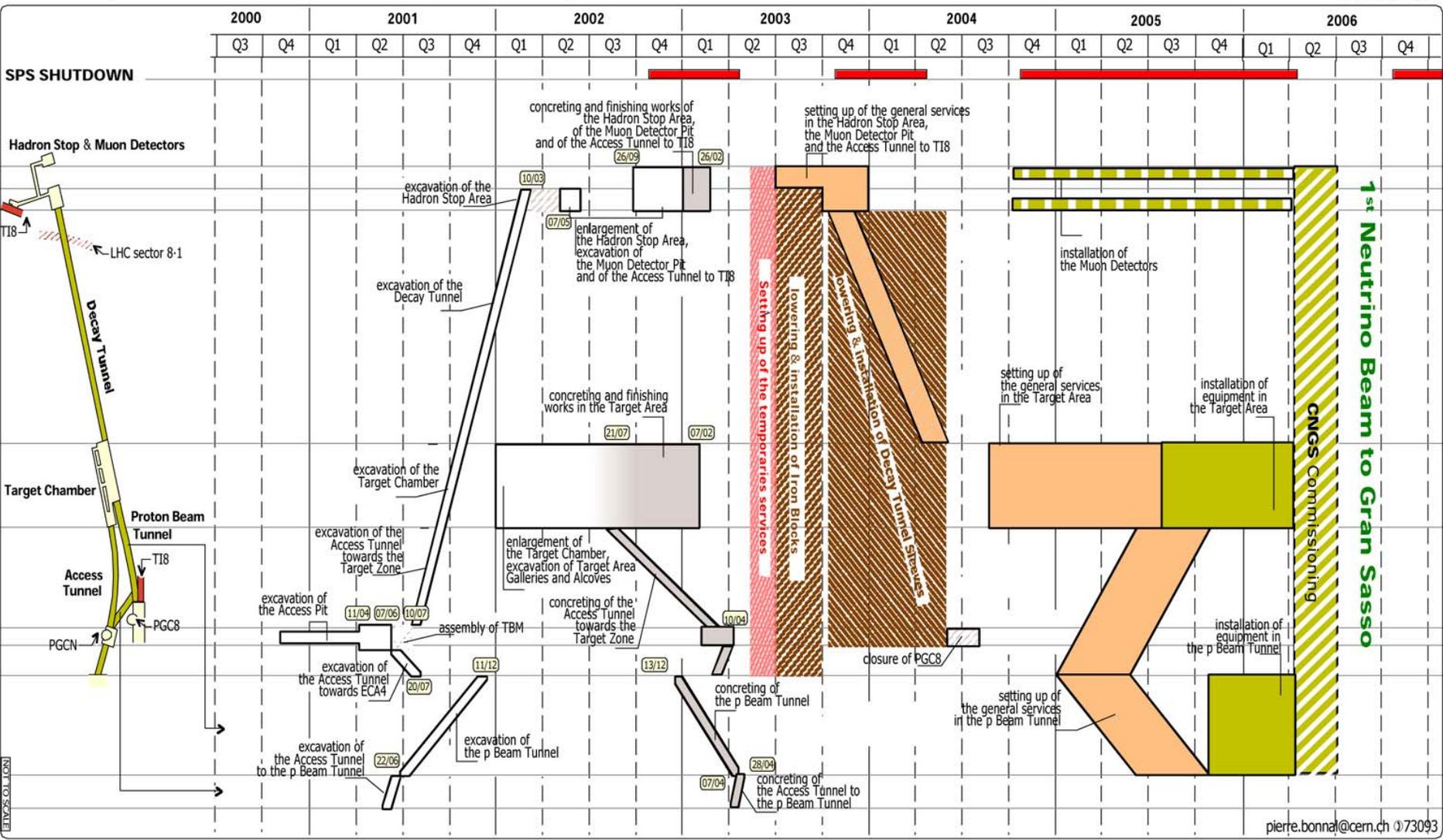


CNGS Project

Construction & Installation

Preliminary Co-ordination Schedule

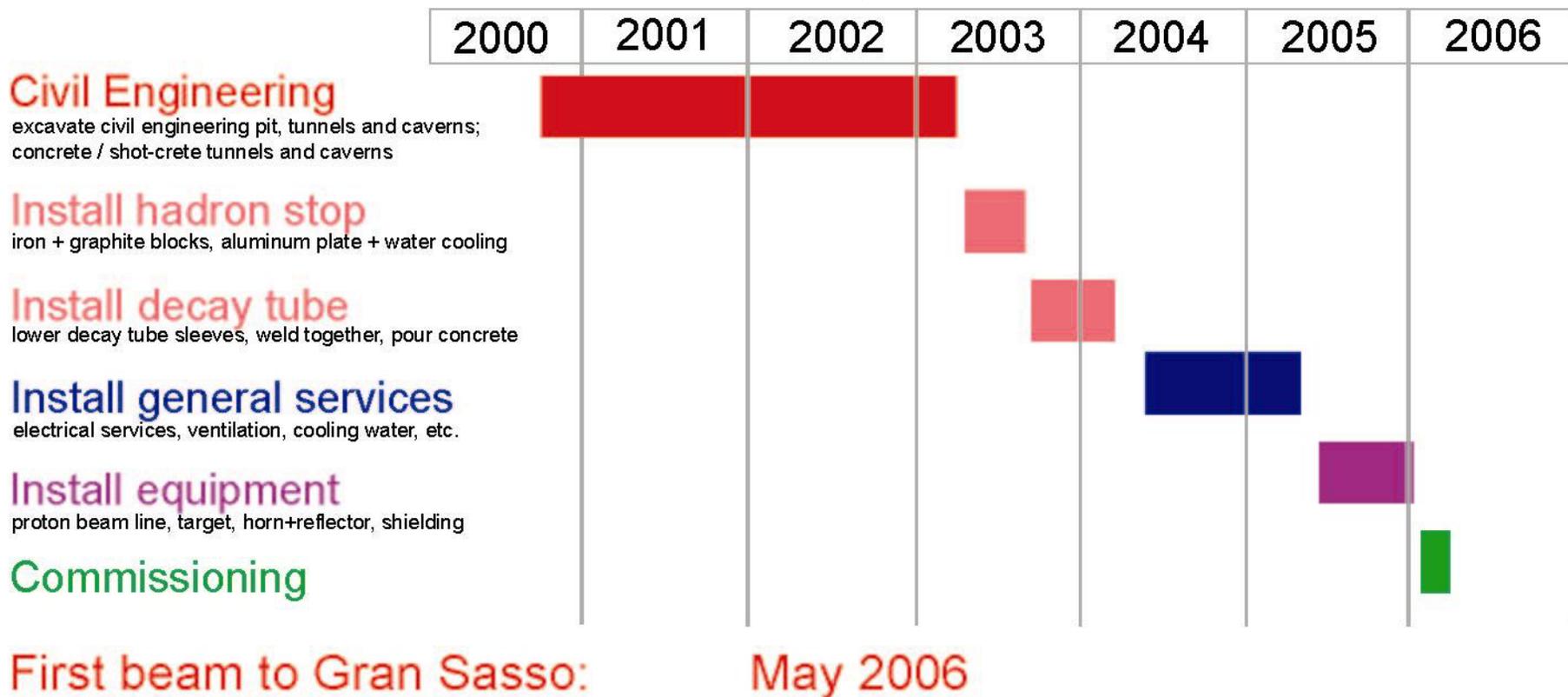
Date : 2002-07-26



CNGS schedule



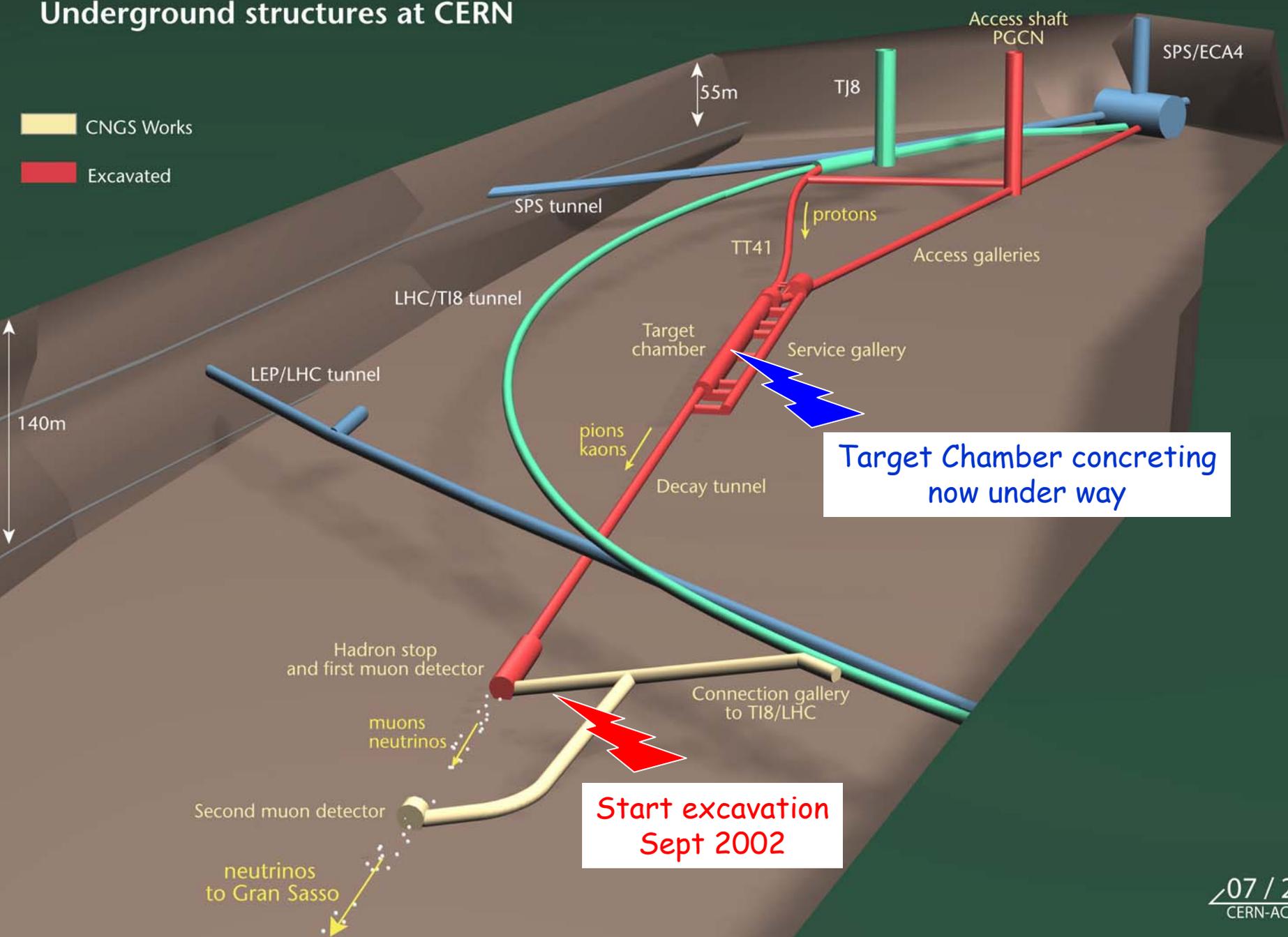
“today”



CERN NEUTRINOS TO GRAN SASSO

Underground structures at CERN

-  CNGS Works
-  Excavated



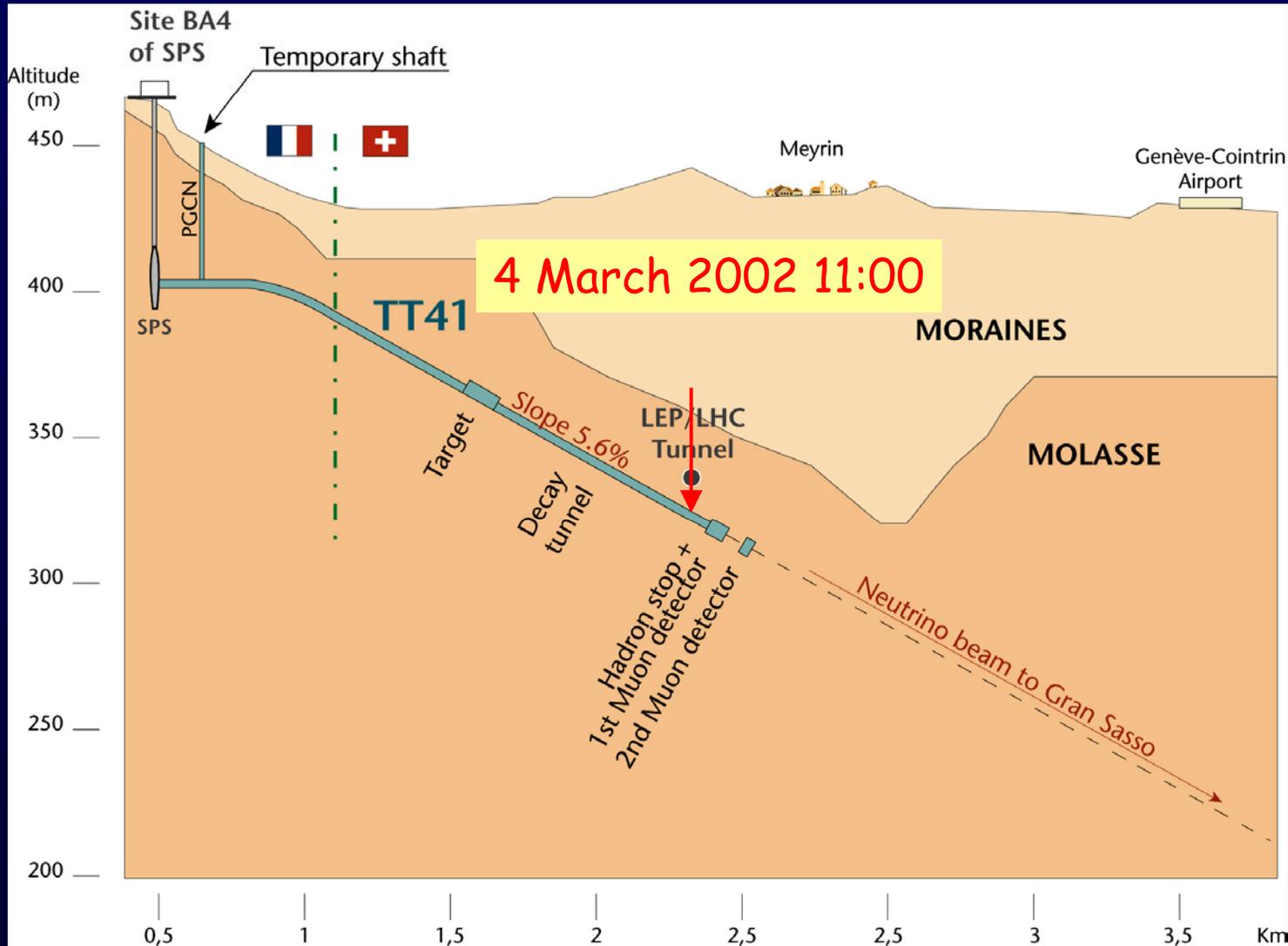
Target Chamber concreting now under way

Start excavation Sept 2002

Accuracy of the decay tunnel (cf. EST-SU):

$\Delta X = -6 \text{ mm}$ $\Delta Y = +36 \text{ mm}$ $\Delta Z = -4 \text{ mm}$

...will be corrected at installation of decay tube





SUMMARY

- CNGS Civil Engineering is "on schedule"
- Design of components well advanced, prototypes of magnets, final horns under construction
- First beam in 2006