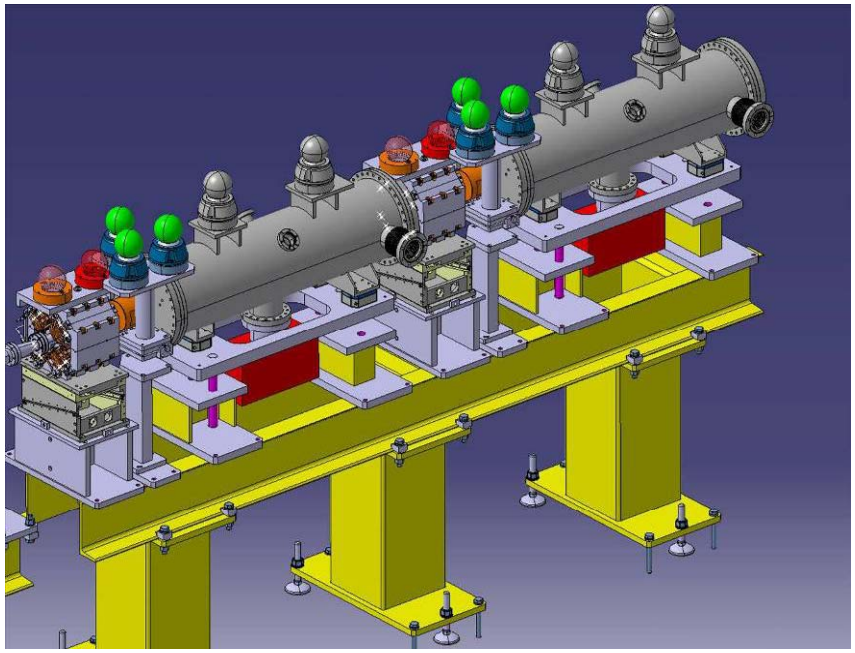
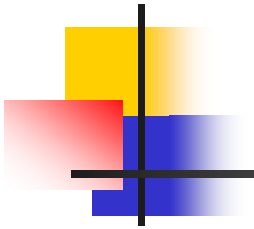
STATUS OF CIEMAT CONTRIBUTION TO CTF3 (20.11.2008)



Courtesy N. Chritin, CERN

MINISTERIO DE EDUCACIÓN Y CIENCIA
Ciemat Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

F. Toral, J. Calero, D. Carrillo, E. Rodriguez, I. Rodriguez
CIEMAT



Outline

- ✓ Tail Clipper.
- ✓ TBL movers.
- ✓ TBL PETS prototype.

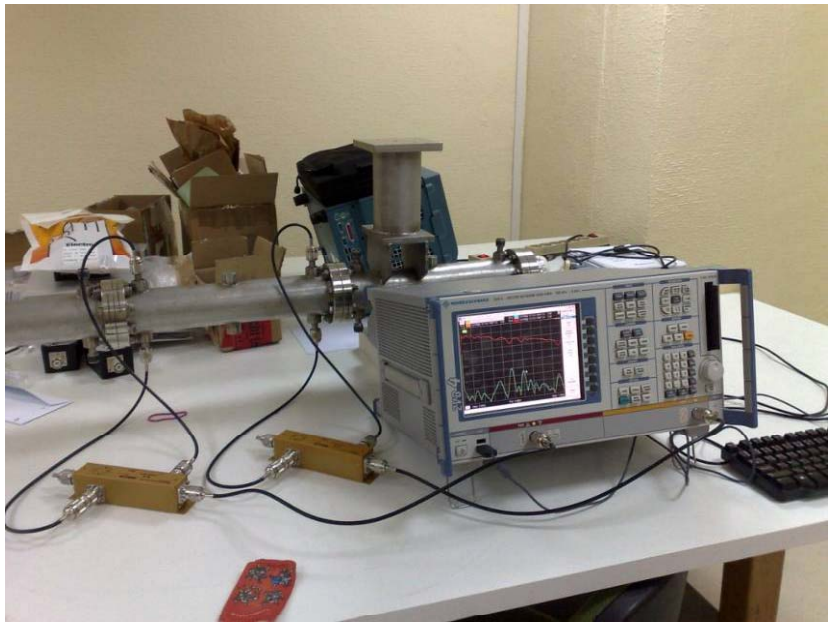
Tail Clipper (I)

- Manufacturing finished on time.

- Leak test successful. Leak rate: 2.53×10^{-11} mbar.l/s
- Vacuum level achieved after 12 hours pumping from one end with a turbo pump: 2.9×10^{-6} mbar. Soft bake-out required to reach 10^{-8} mbar.

Tail Clipper (II)

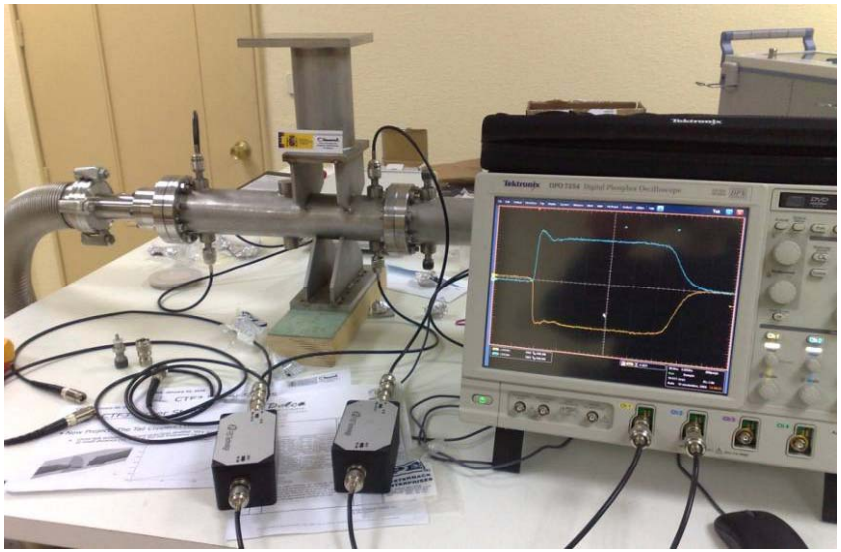
- Electromagnetic tests (I)
  - RF scattering parameters match calculations.



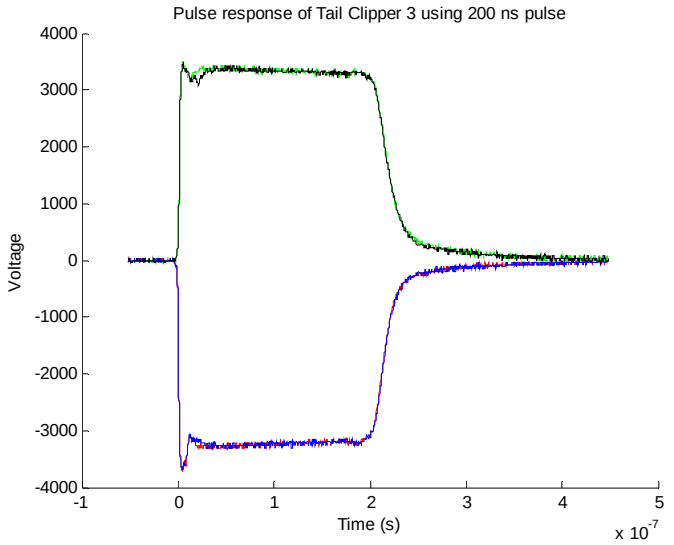
  - Strip-lines tested up to 3100 V (DC) to ground. Nominal pulse will have about 2800 V. No sparks happened.

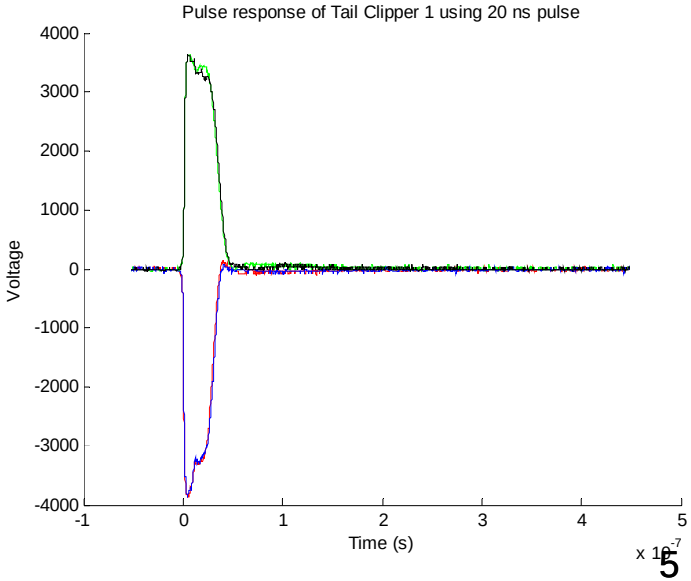
Tail Clipper (III)

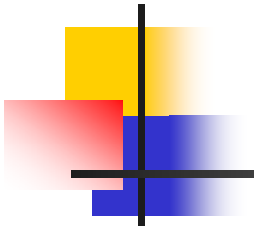
- Electromagnetic tests (II)
  - Excellent pulse response.



  - 3400V, 2.5 ns rise time pulses passed through the Tail Clippers without being modified (green and red are references).
  - Pulses of 20, 130 and 200 ns flat top were successfully tested.





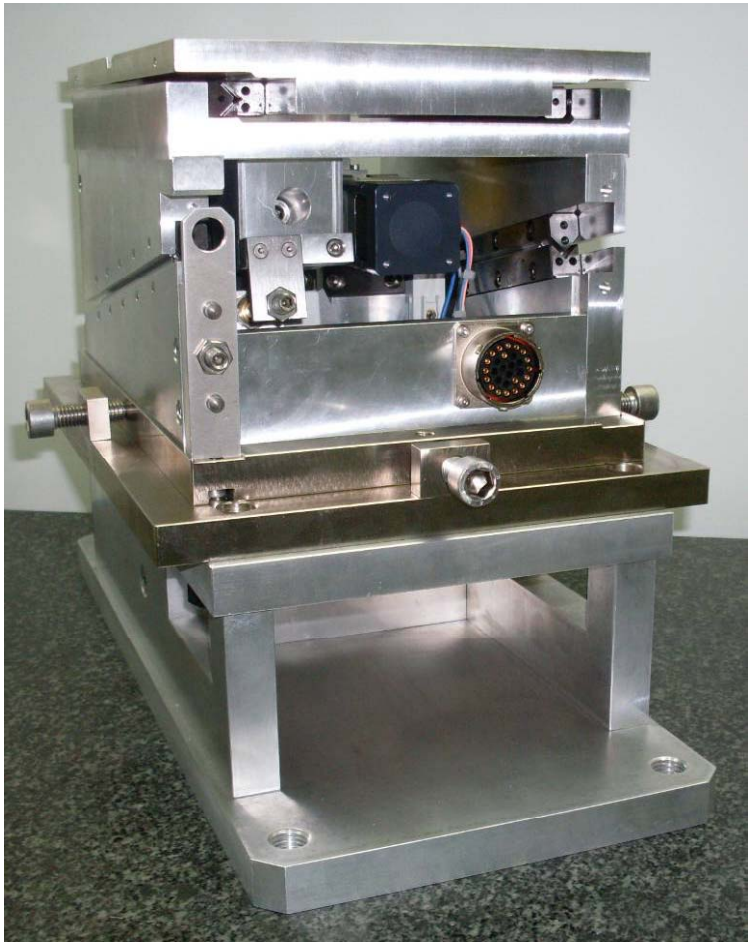


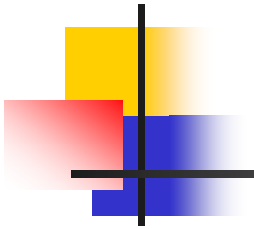
Outline

- ✓ Tail Clipper.
- ✓ TBL movers.
- ✓ TBL PETS prototype.

TBL movers

- The second prototype is completely finished, including acceptation tests. It will be sent to CERN next week.
- The third prototype is being validated. It will be delivered in few days.
- The order for the remaining 13 units has been placed, and it will finish in the first half of January. Three companies have been certified during prototyping.
- Once the contract is signed, the supports will be fabricated first, to be shipped to CERN as soon as possible and installed during the winter shut-down.



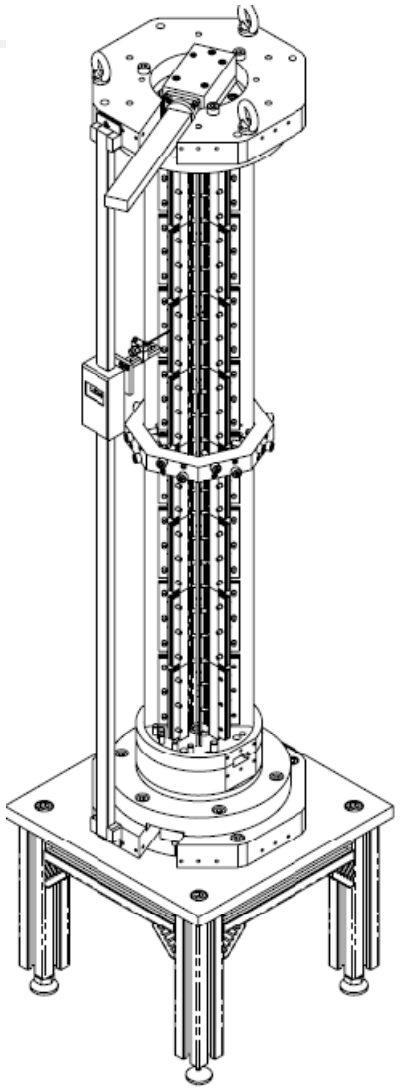


Outline

- ✓ Tail Clipper.
- ✓ TBL movers.
- ✓ TBL PETS prototype.

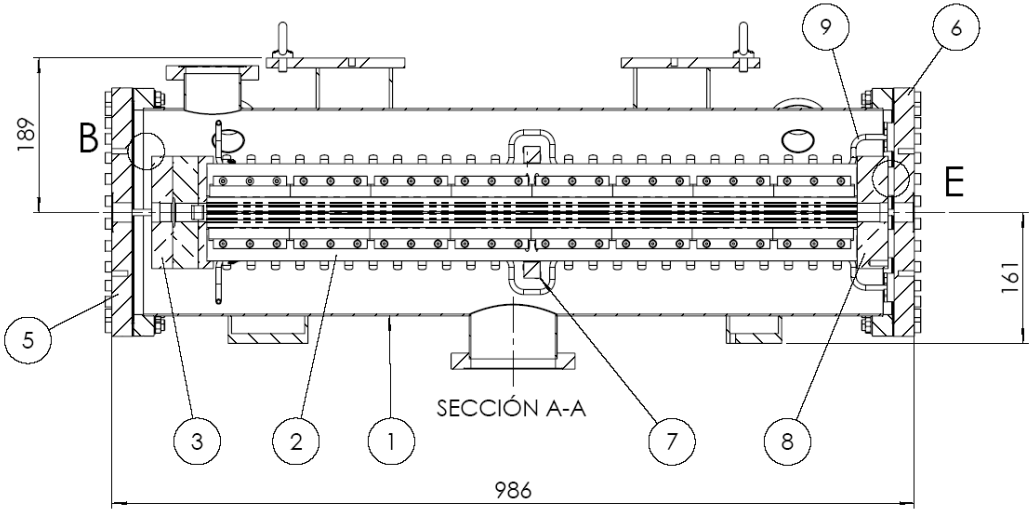
TBL PETS prototype (I)

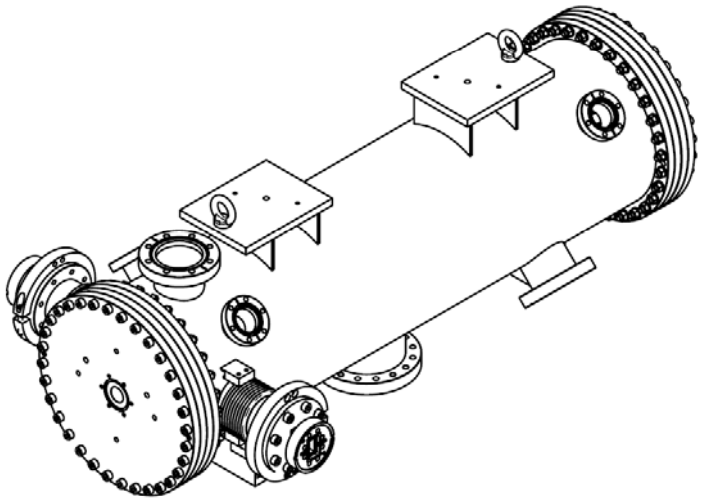
- COPPER RODS:
  - seven rods machined and measured. Some problems with internal stresses not released with heat treatment.
  - Eight (and last) rod will be finished next week.
- POWER EXTRACTOR:
  - Fabrication drawings have been modified because brazing on dummies was not good.
  - Two sets of copper parts will be finished next week. An intermediate heat treatment has been done to release stresses.
  - One set will be brazed at a Spanish Institute and another one at CERN.
- RF MEASUREMENT BENCH:
  - Mode launchers are being finished. They will be connected each other to be measured and validated.
  - Delivery of digital rule delayed by the supplier, we are looking for alternatives.
  - Some parts are already fabricated.



TBL PETS prototype (II)

- COOLING CIRCUITS:
  - Copper pipes are already bent with the custom made tooling.
  - Connectors have been sent for nickel plating before brazing.
  - We need a high number of drilled screws for high vacuum conditions.
- WAVEGUIDES:
  - Parts are being machined.
  - We will use a brazing alloy 82% gold 18% nickel.
- VACUUM TANK:
  - Drawings finished and sent to CERN for validation.
  - Fabrication has already started. All commercial parts are procured.





Near future schedule and conclusions

- TAIL CLIPPER:
  - Already finished and tested. Ready for shipment.
- TBL MOVERS:
  - Second prototype finished. Third one being tested.
  - Series order is in progress.
- PETS PROTOTYPE:
  - All drawings finished and sent to CERN for validation.
  - All missing parts under fabrication.
  - This is the most critical item, it must be finished for the end of January.