

Status of CTF3 work at INFN Frascati

Andrea Ghigo for CTF3 Collaboration

Frascati (INFN - LNF) collaboration

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L.Pellegrino, B.Preger, M.A.Preger, R.Ricci, C.Sanelli,
M.Serio, F.Sgamma, A.Stecchi, A.Stella, M.Zobov**

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Accelerator Division Technical Staff

Delay Loop installation sequence

- **Feb. 2005:** mark out in the hall
- **Mar.2005:** supports and magnets of the arcs
- **June-August 2005:** wiggler magnet, wiggler chamber, all ring vacuum chambers and supports.
- **November 2005:** RF deflector, 6 BPM, injection-extraction corrected chamber, connection with the Linac. Vacuum chamber evacuated: ready for commissioning



CLIC TEST FACILITY (CTF3)



WIGGLER



QUADRUPOLE AND SEXTUPOLE

DELAY LOOP



SEPTUM CHAMBER



RF DEFLECTOR

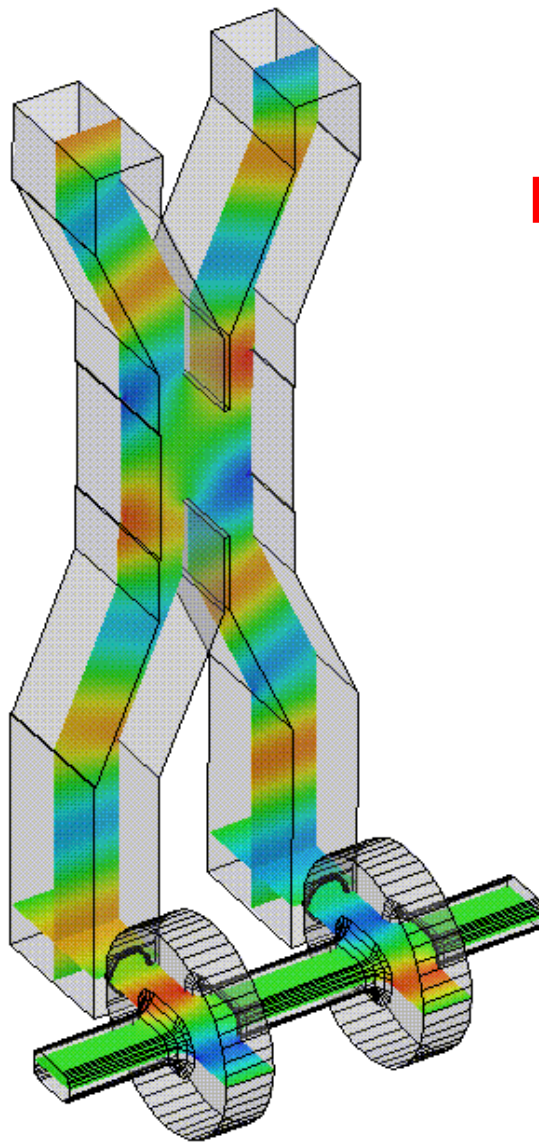
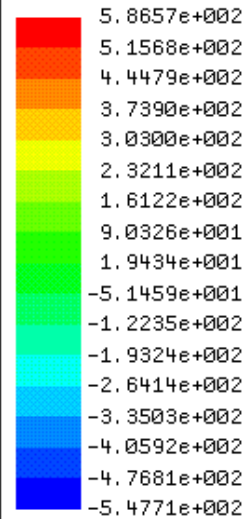
CHICANE



TRANSFER LINES



NamedExpr

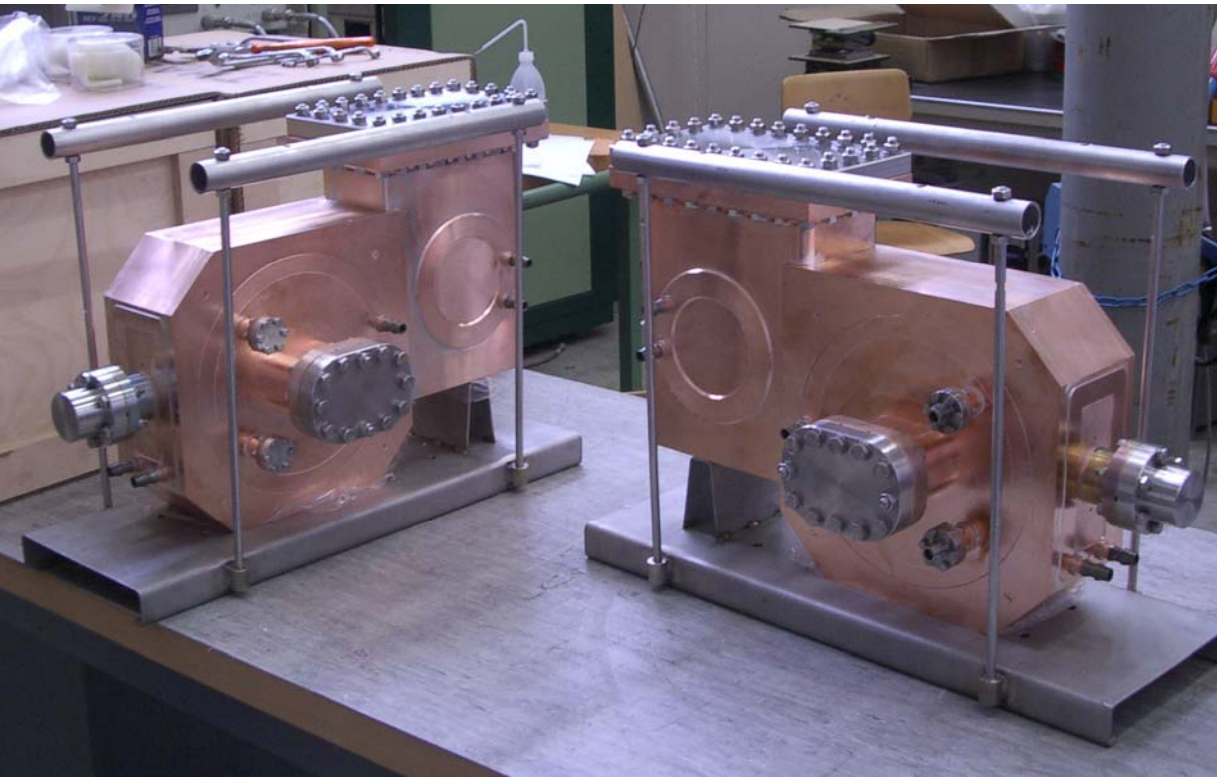
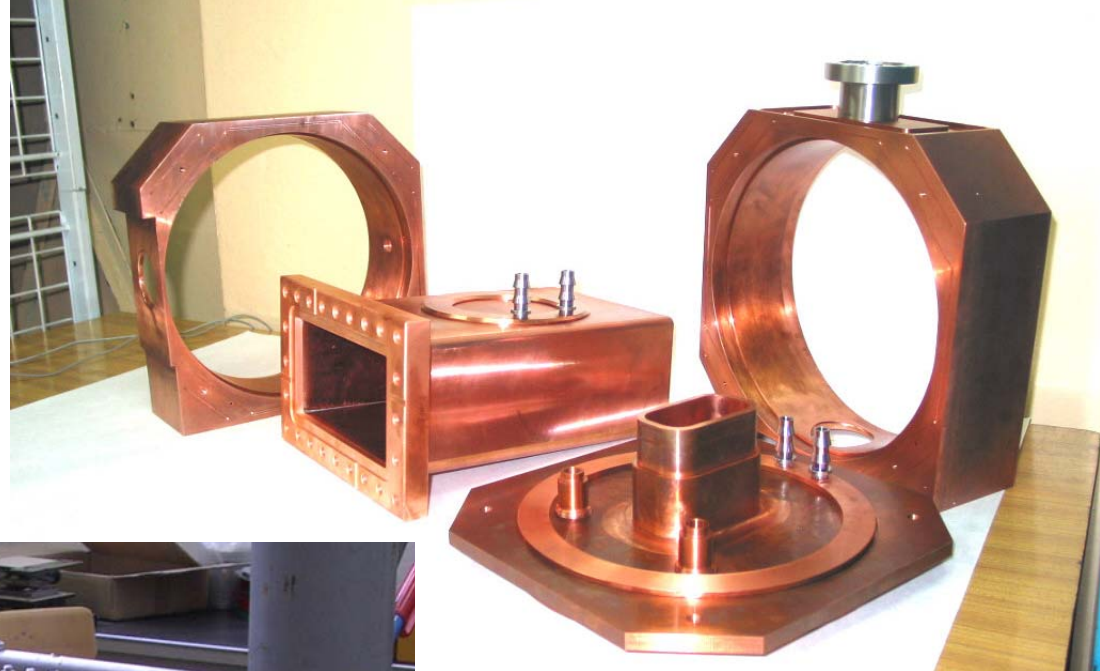


**RF deflector
HFSS simulation**

RF deflector parts

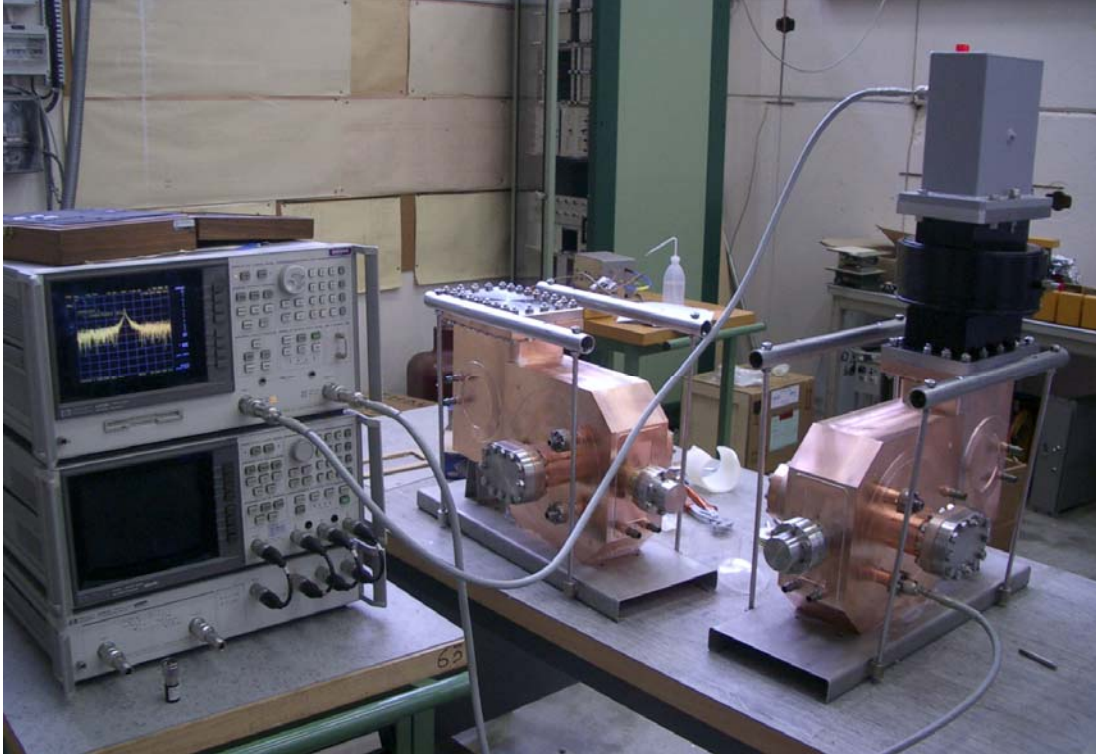
Cavity before welding

Assembled cavities

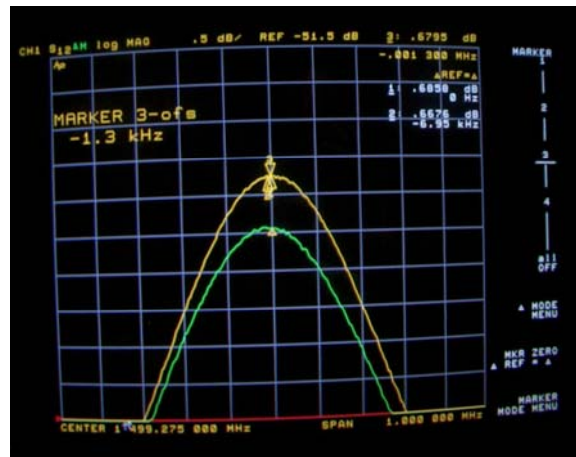


RF window

RF deflector bench measurements



Cavities tuning

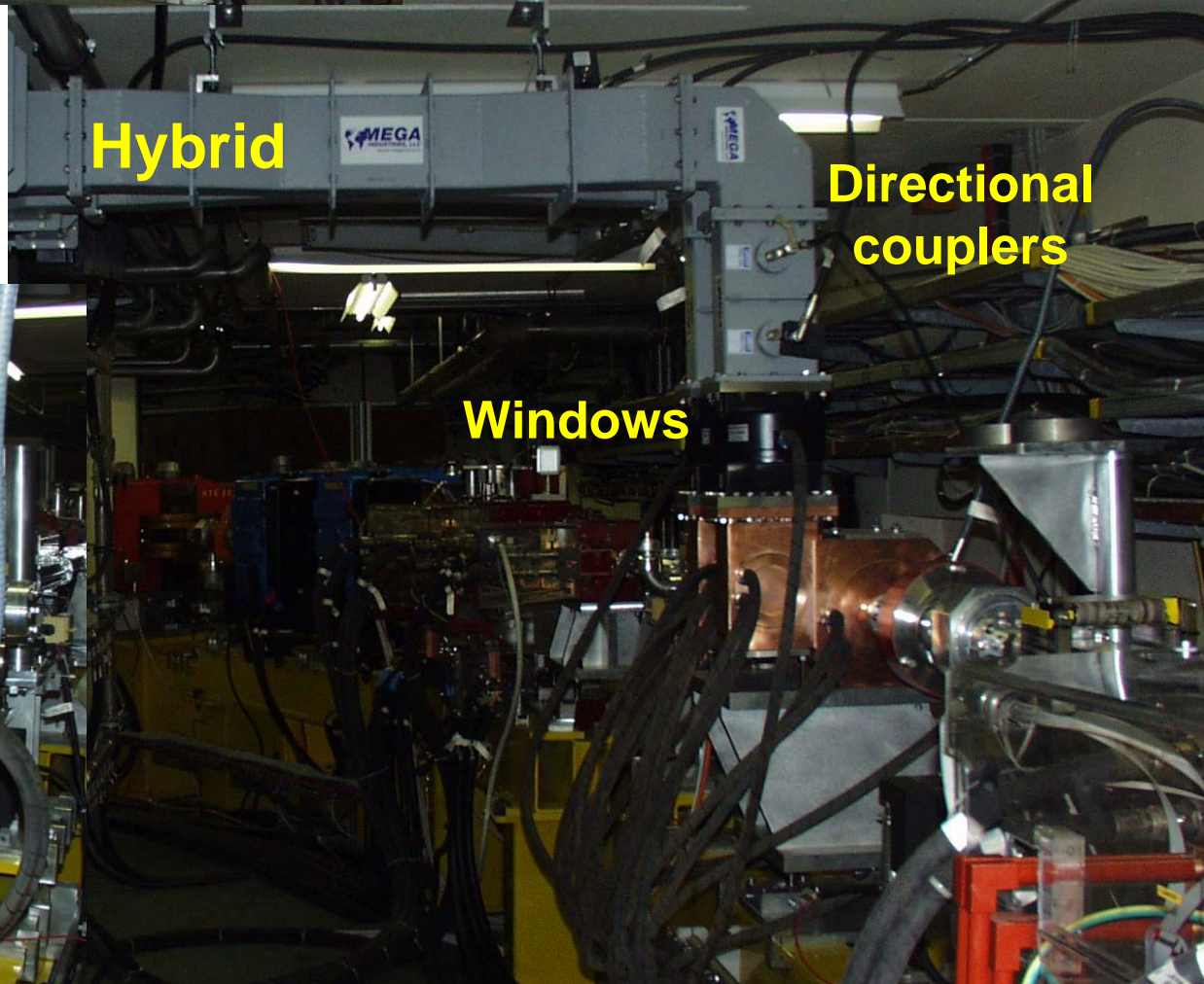
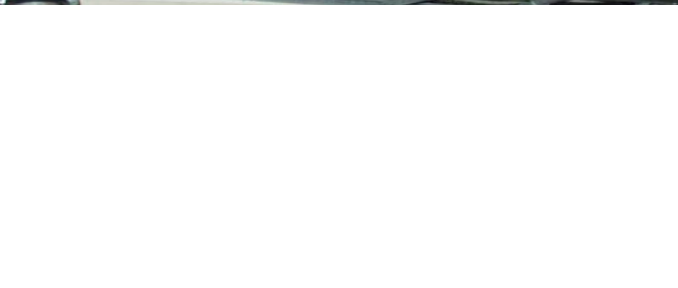


Deflector assembly test



Load

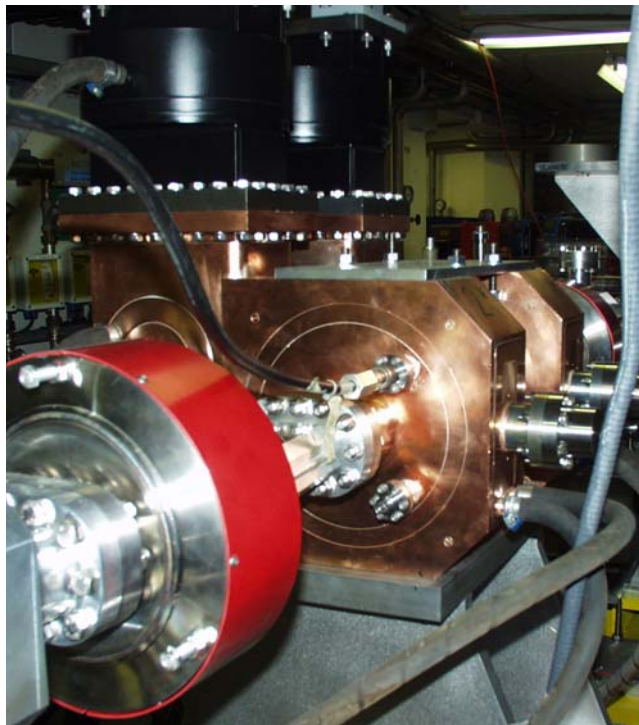
**1.5 GHz components
installation**



Hybrid

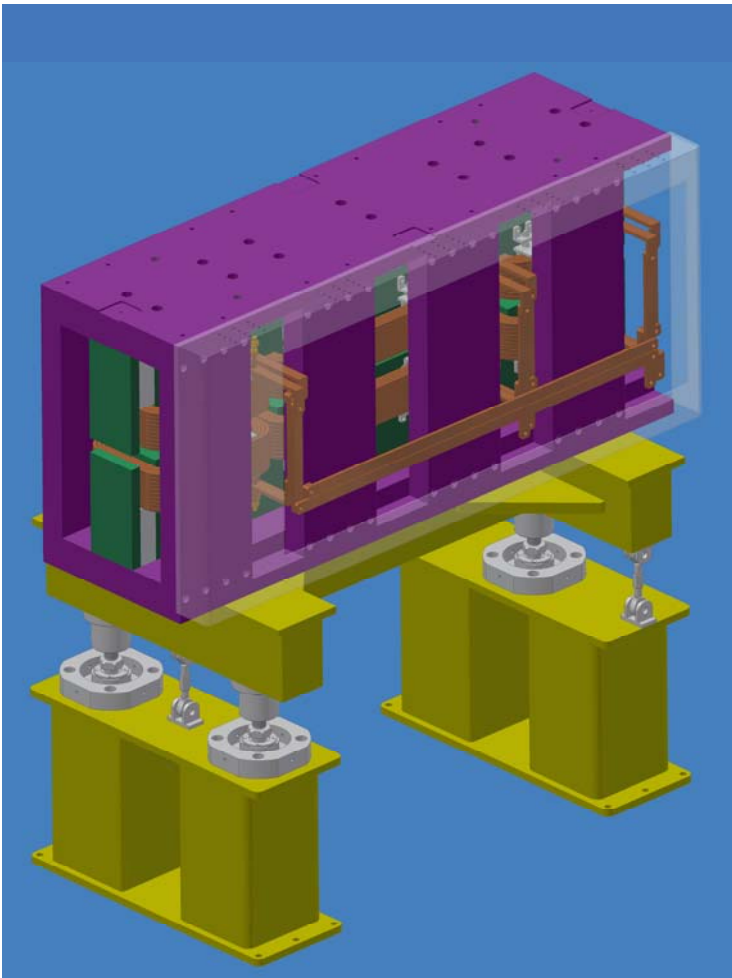
**Directional
couplers**

Windows



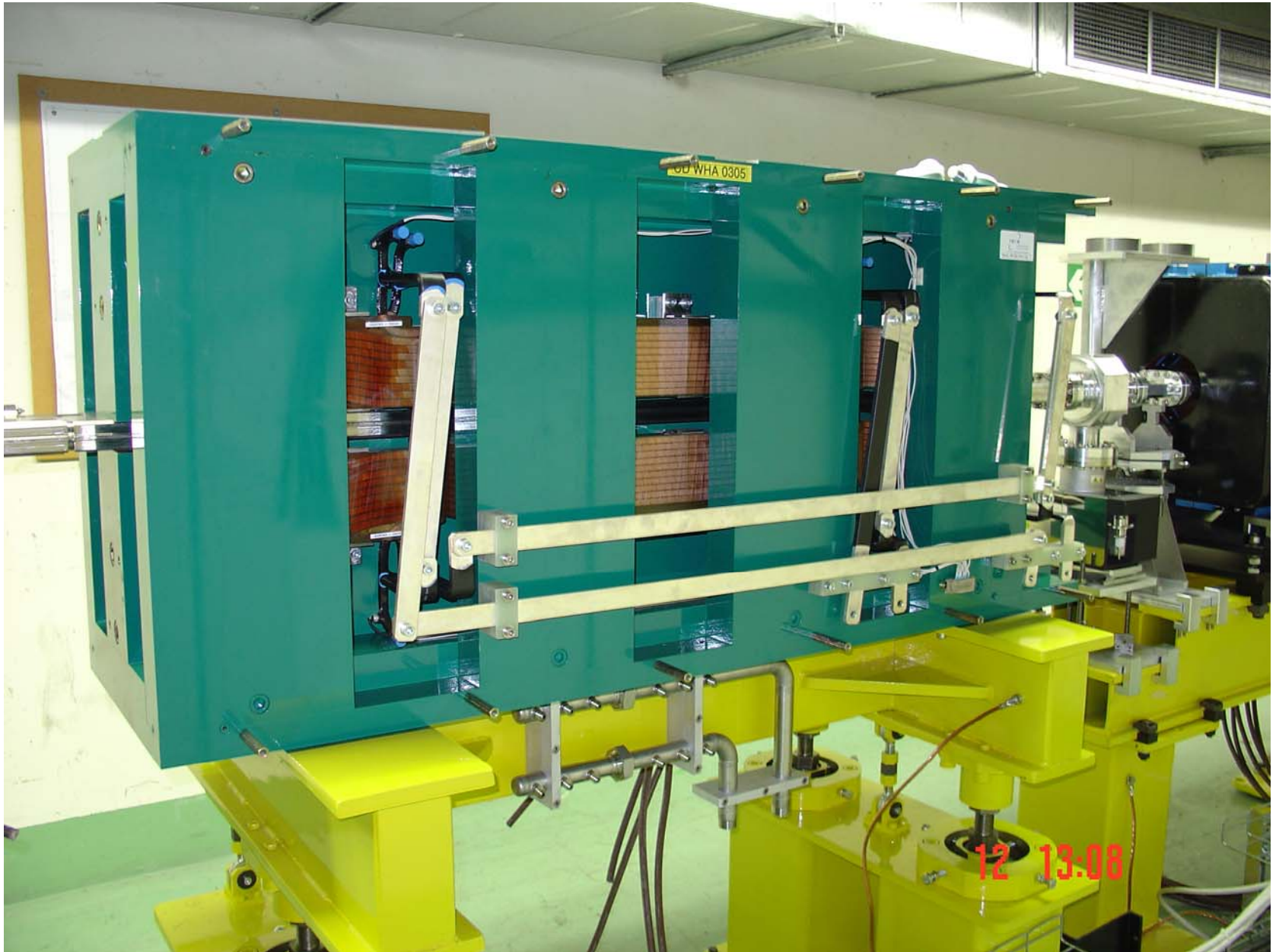
Wiggler magnet

Wiggler 3D “INVENTOR”
drawing



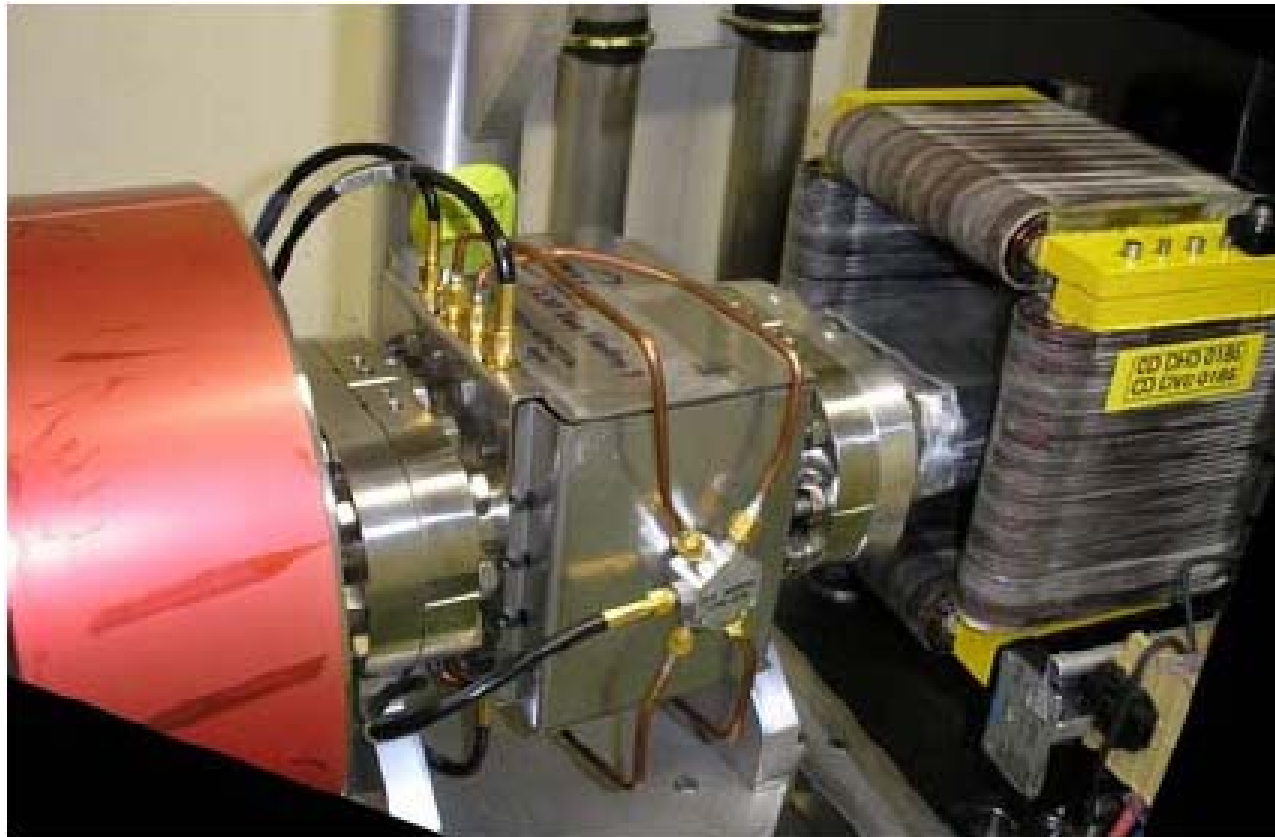
Wiggler before
shipment

Wiggler magnet installed

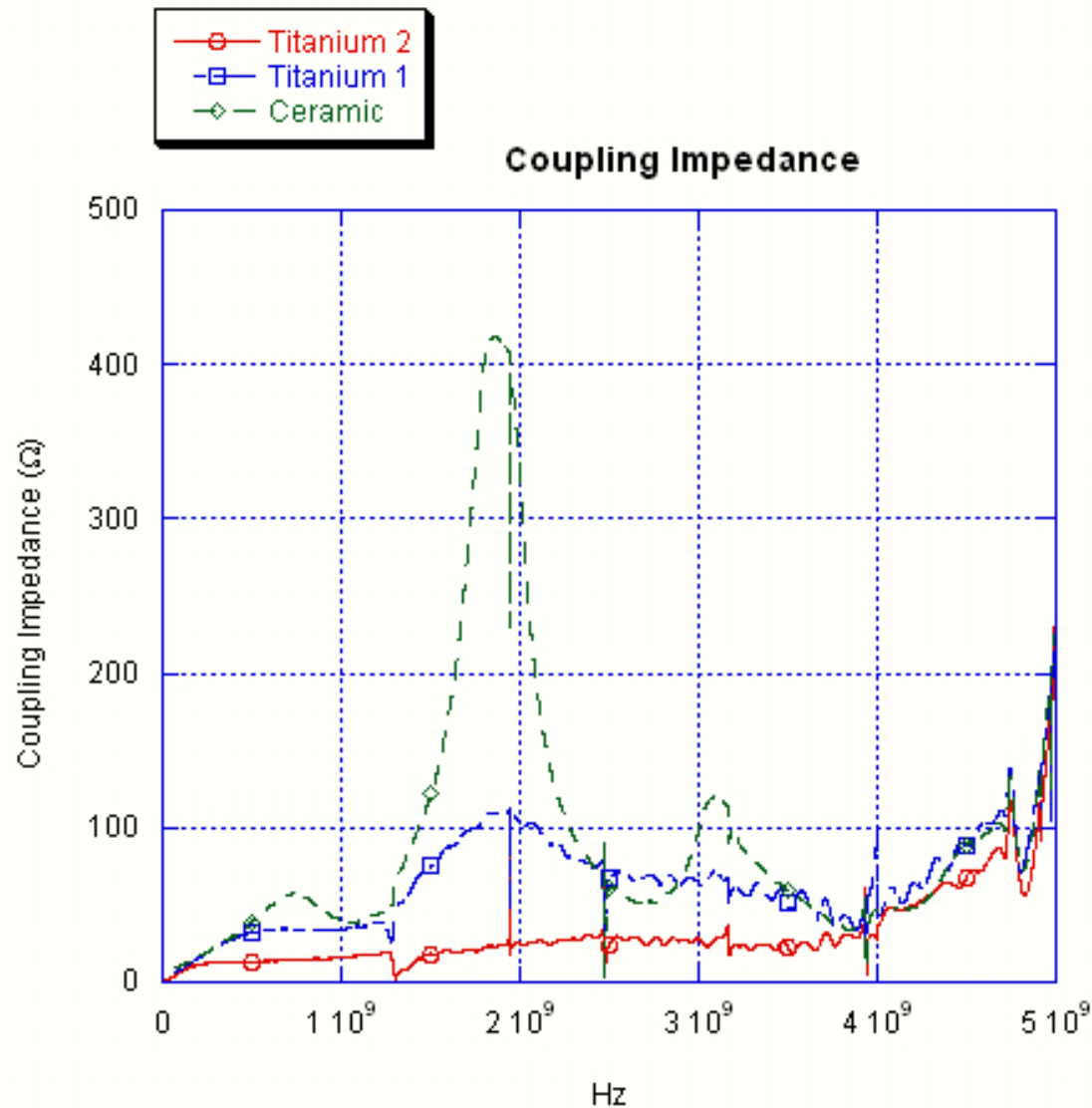


Beam Position Monitor (BPM)

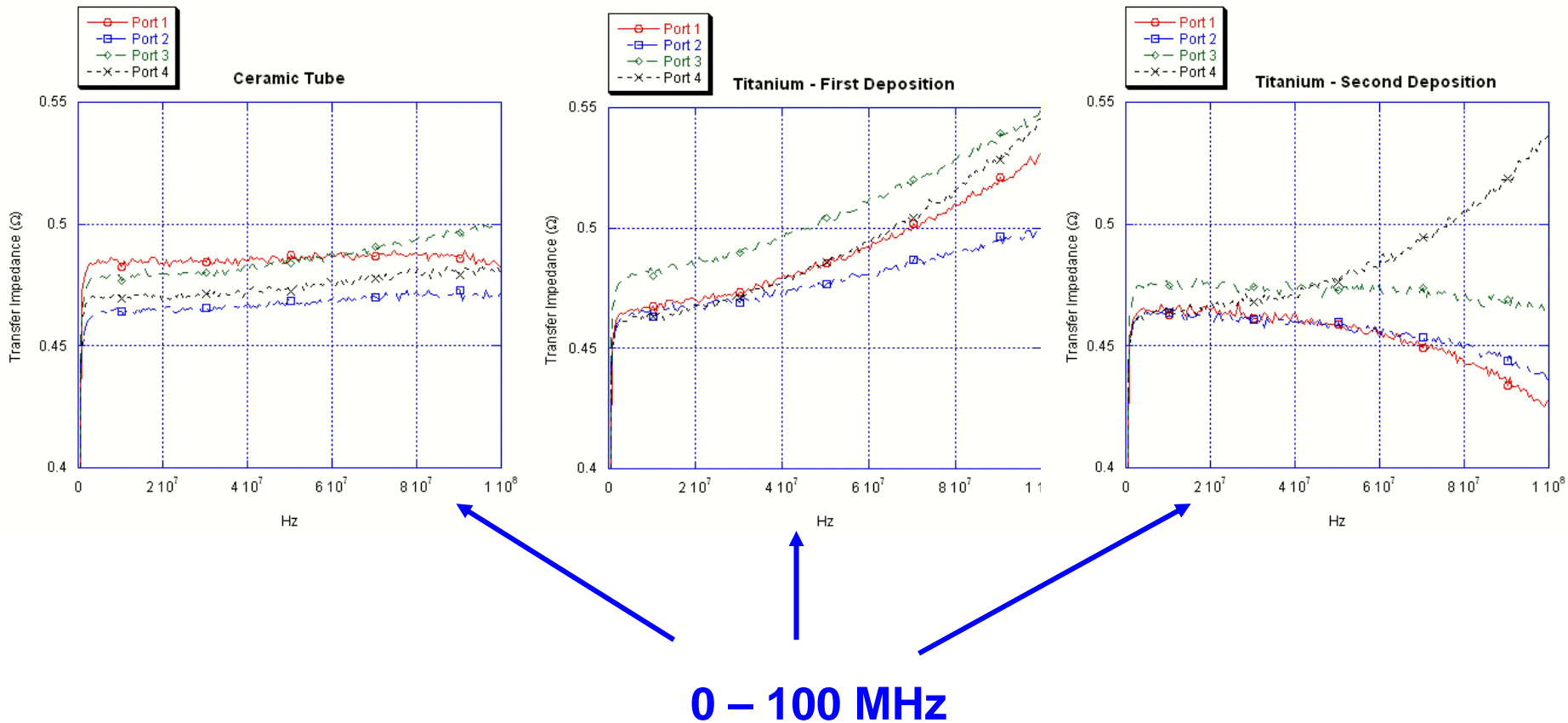
The internal surface of the BPM ceramics has been titanium coated. The thickness of the coating has been shown to lower the coupling impedance at the bunch characteristic frequencies and to be transparent to the bunch train frequencies.

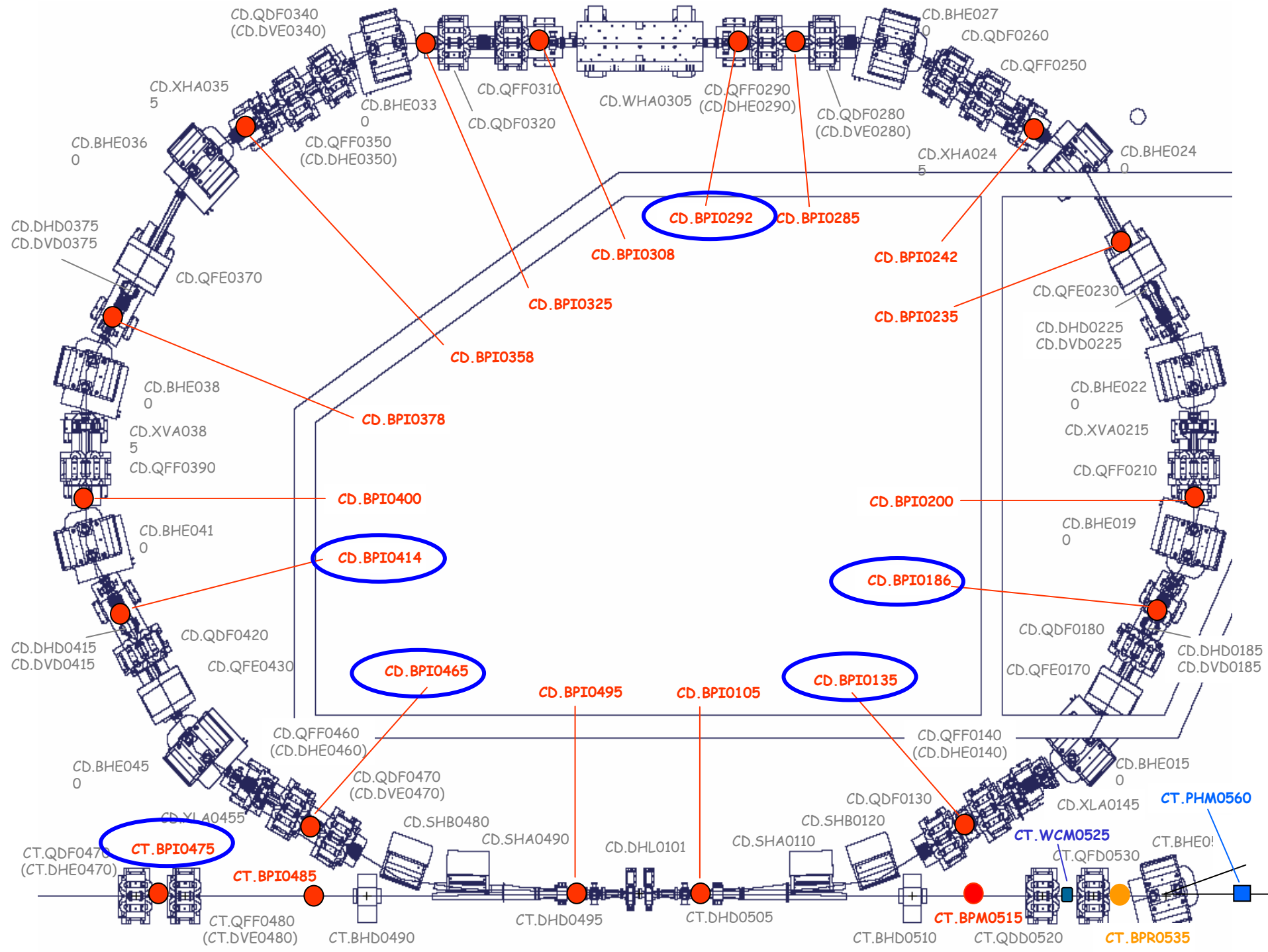


Coupling Impedance measurements comparison



Transfer Impedance measurements comparison





Subject: Re: INFN order status p/n 20519-01-A

Date: Fri, 18 Nov 2005 15:00:52 -0500

From: DMoore@ceramtec.com

To: Angelo Stella <Angelo.Stella@lnf.infn.it>

CC: KHewlett@ceramtec.com

Hello Angelo,

We are planning on shipping the balance of 15 units in two groups.

| | Planned | | |
|-------|-----------|-------------------|---|
| Group | Ship Date | Quantity | Comments |
| 1 | 11/29/05 | Yield of 9 units | Parts are going through assembly prior to welding and machining. |
| 2 | 12/15/05 | Balance of 6 unit | Ceramics are processing through final grinding prior to assembly. |

Sincerely,

Don Moore

Engineering Manager

CeramTec North America

One Technology Place

Laurens, SC 29360

CERAMTEC last scedule

Delay Loop synchrotron radiation monitor



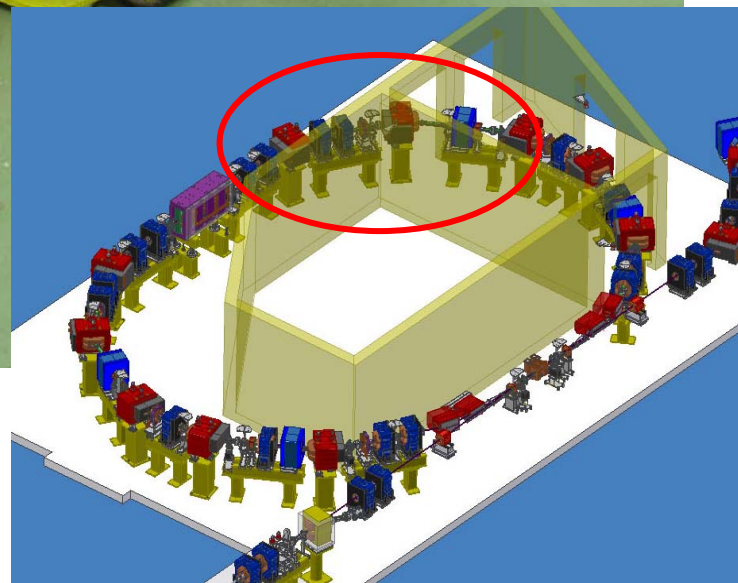
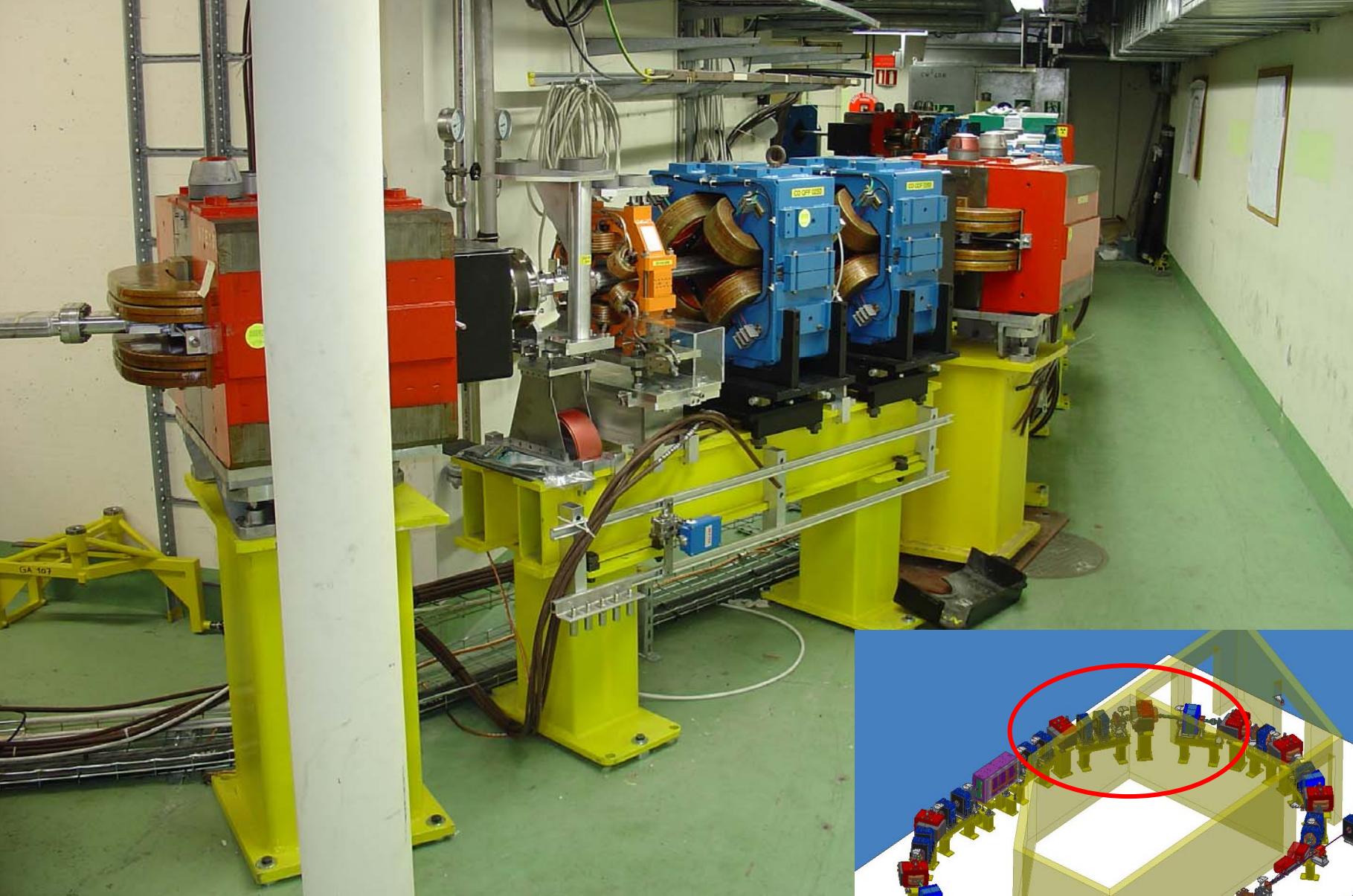
CD.MTV0241



CD.MTV0331

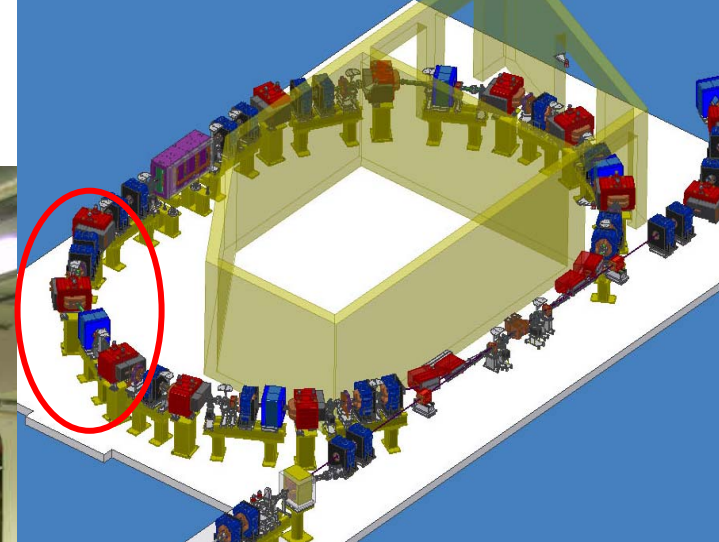
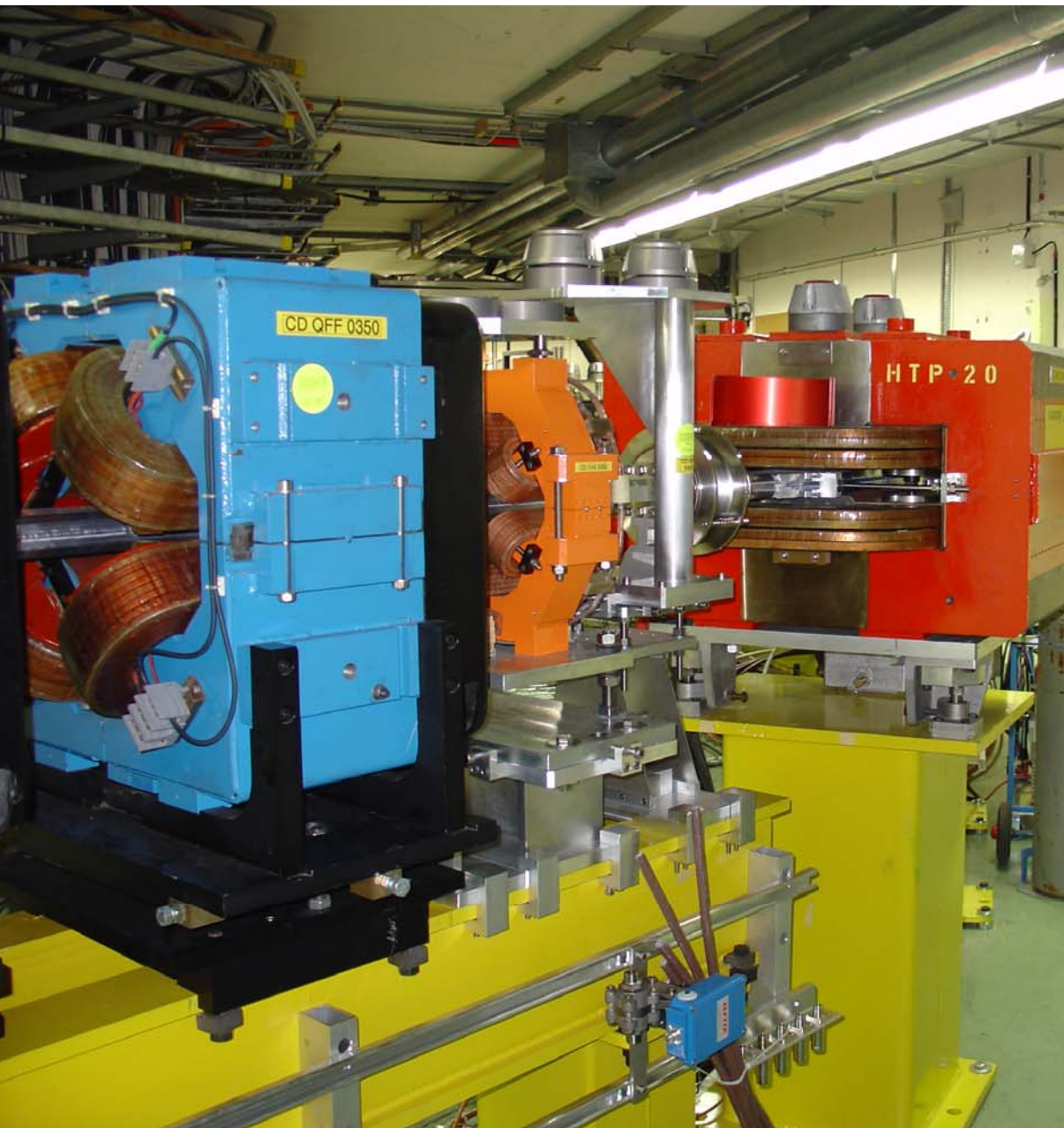


CD.MTV0361



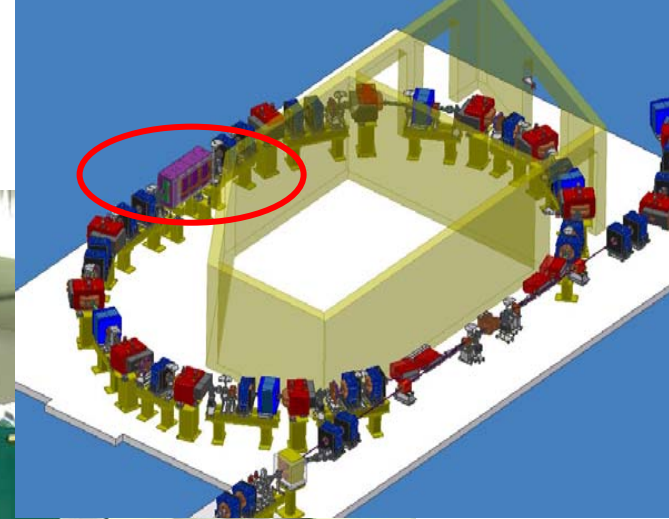
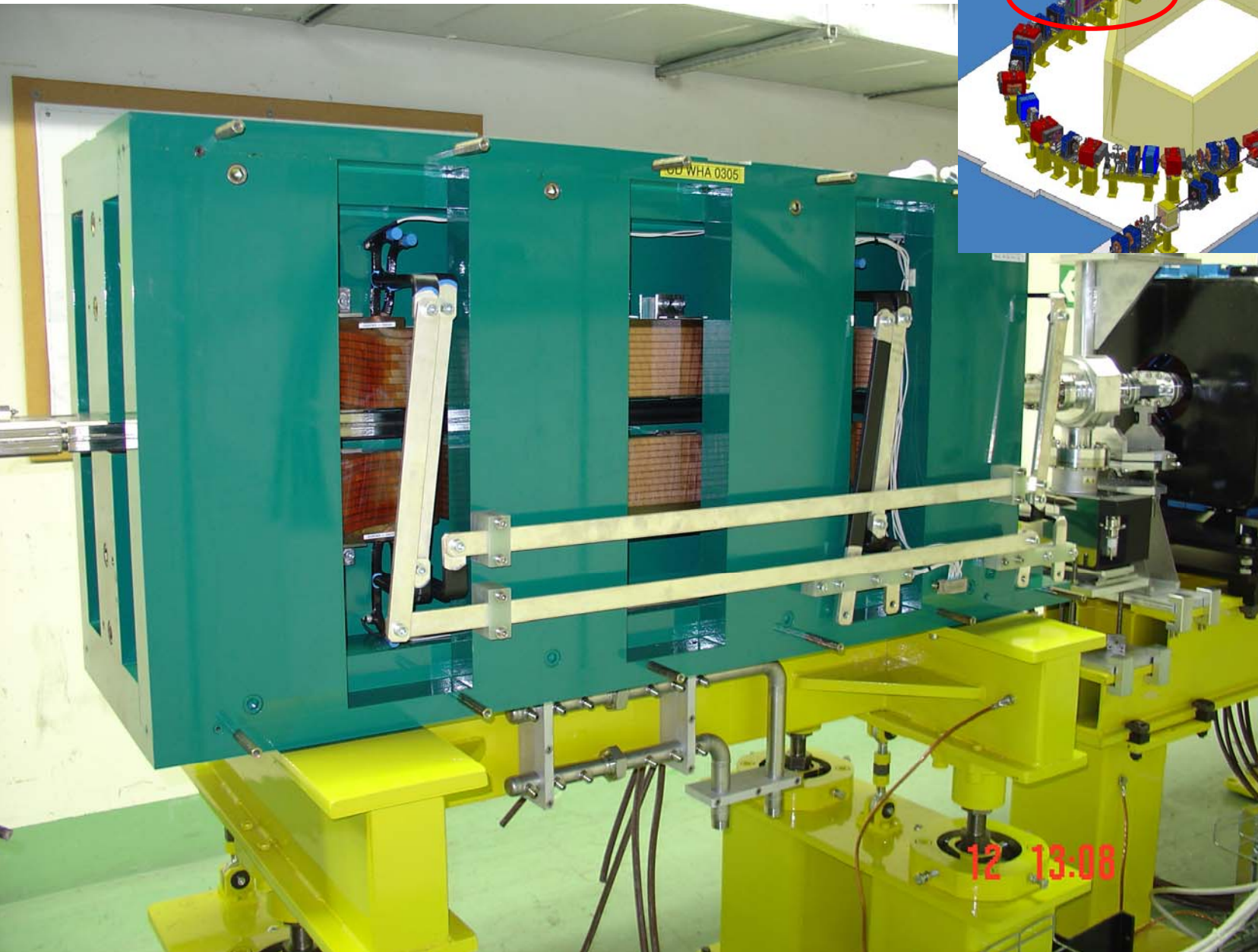
Delay Loop installation

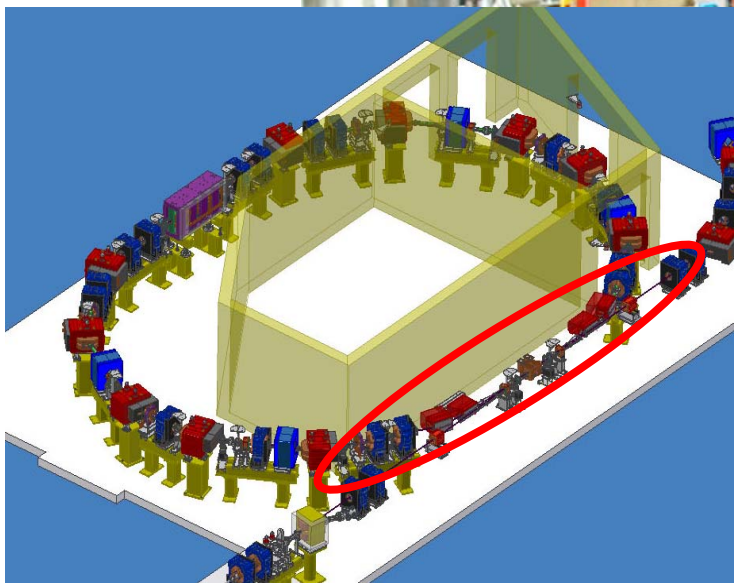
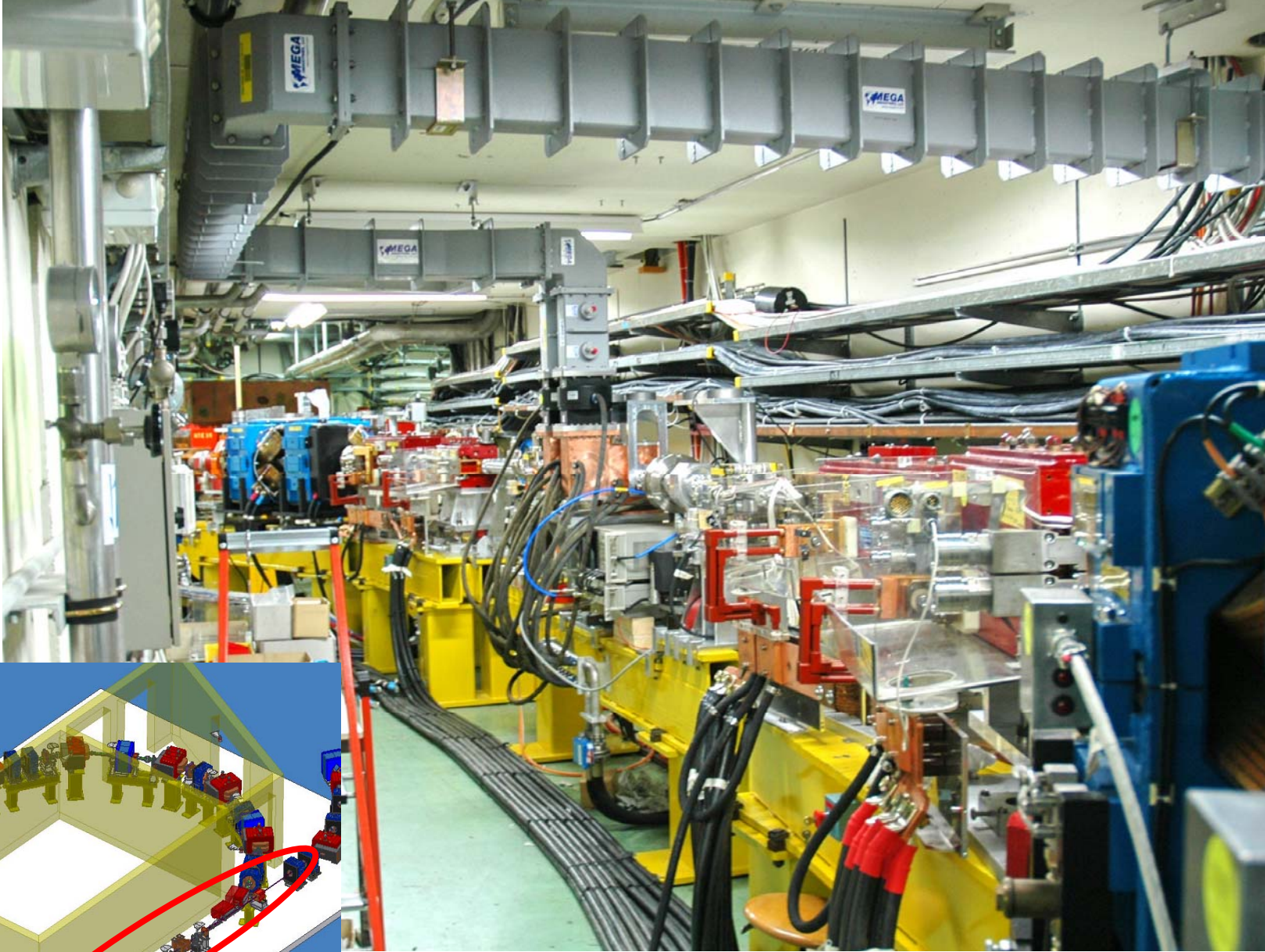
Delay Loop installation



12 13:07

Delay Loop installation





Delay Loop installation

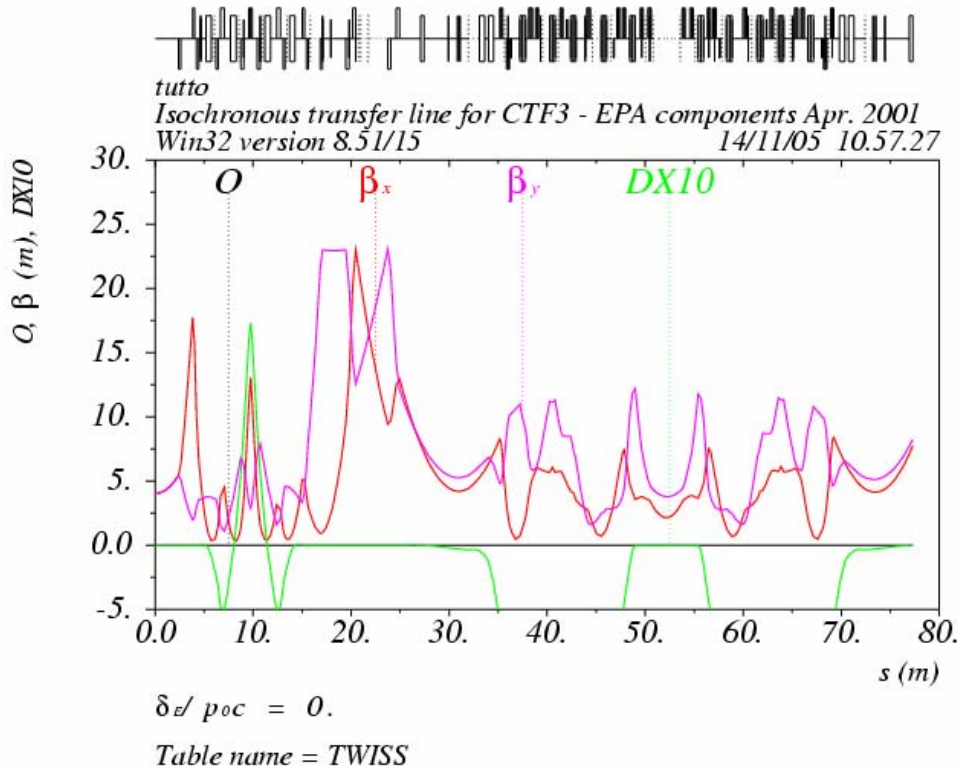
CERN has been taken responsibility of:

- **Alignment**
- **Power Supplies**
- **Cabling**
- **Cooling**
- **Control System**
- **RF power**

Very good and fruitful collaboration in:

- **Mechanical installation**
- **RF test**
- **Vacuum operation**
- **Beam Diagnostics**

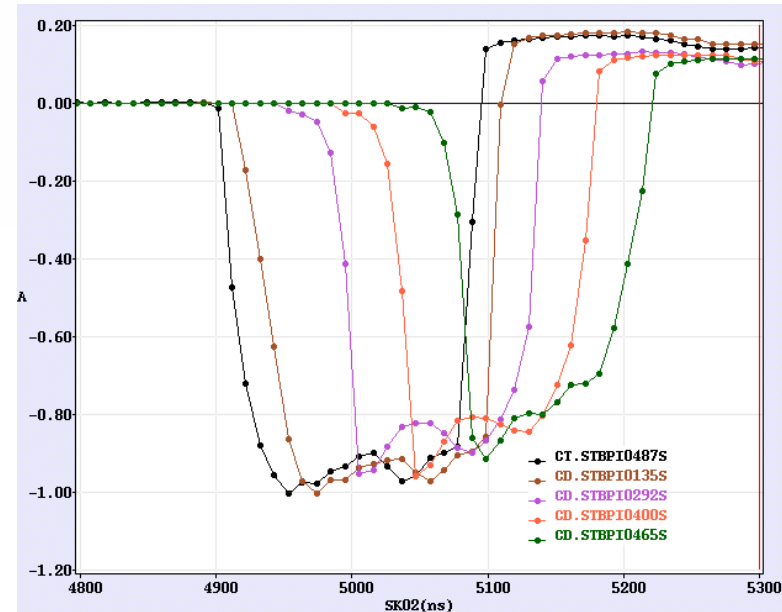
Operation



Delay loop not achromatic
($R56 = -4.7$ m) wiggler off
 $Q_x = 2.64$
 $Q_y = 1.38$

First turn in the Delay Loop:
BPM signals

Dedicated shifts for Delay Loop
commissioning are necessary next year

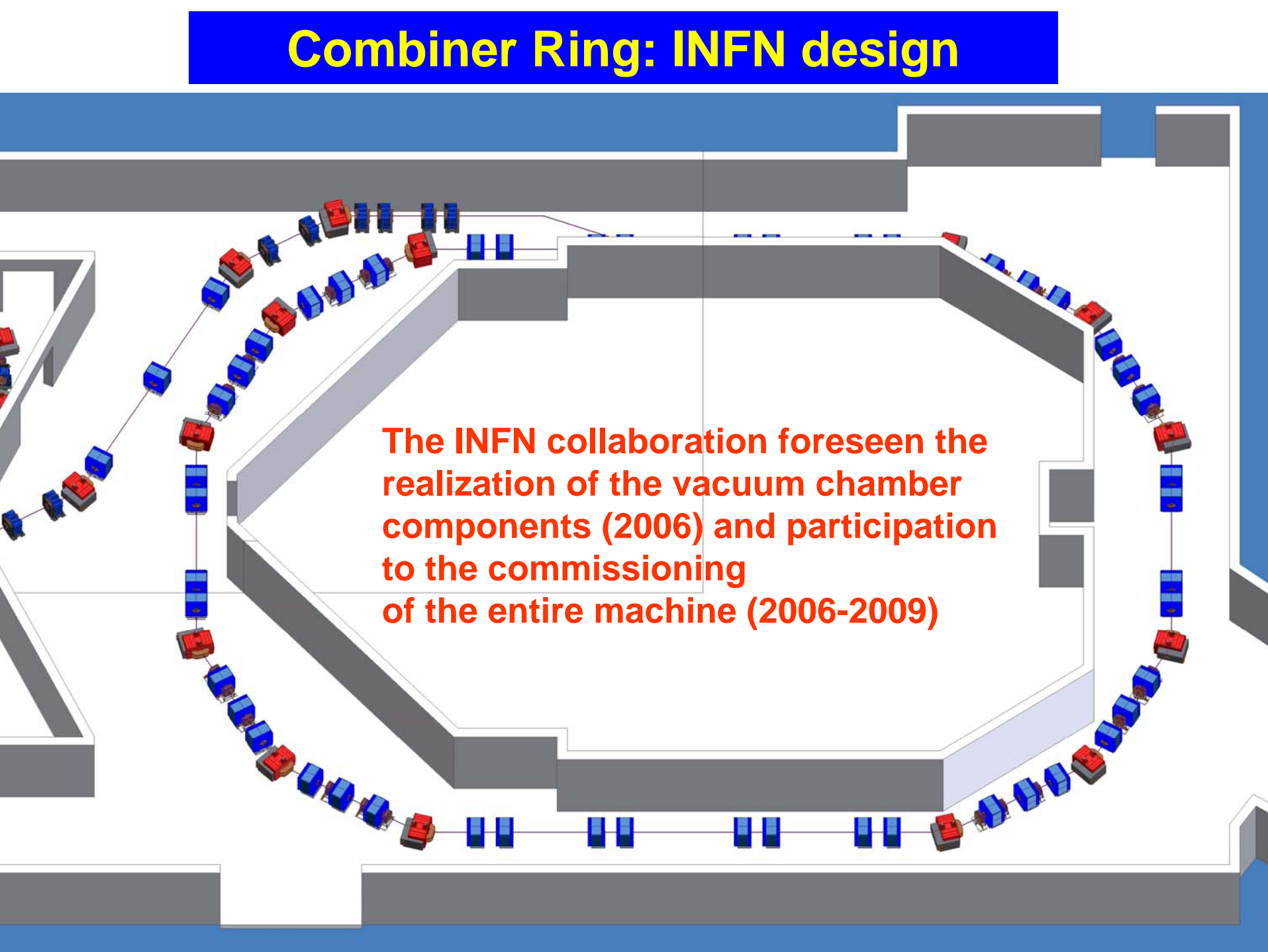


Operation



..... many thanks to the CTF3 collaboration !

Combiner Ring: INFN design



The INFN collaboration foreseen the realization of the vacuum chamber components (2006) and participation to the commissioning of the entire machine (2006-2009)