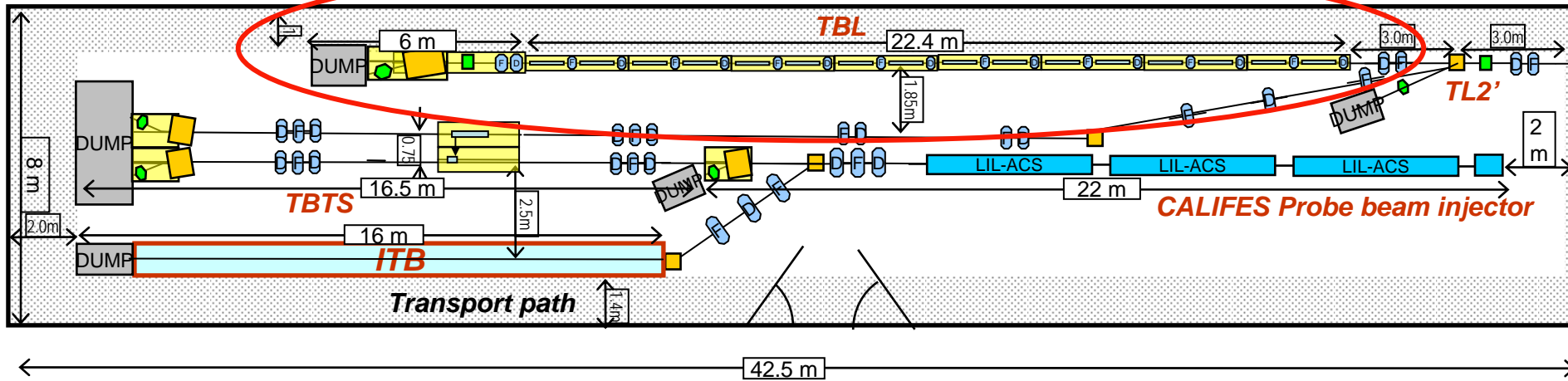


Status of the Test Beam Line

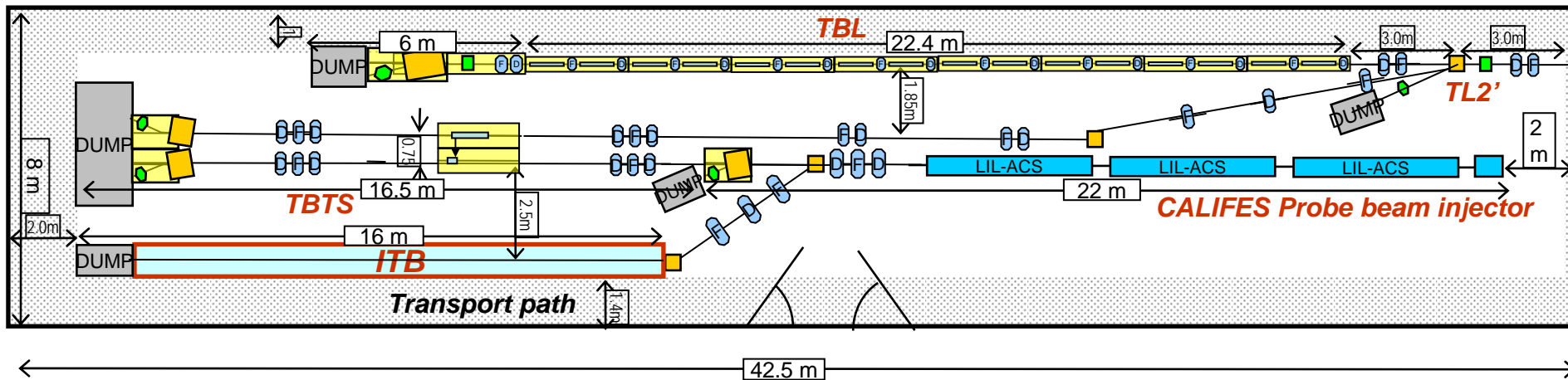


Goals and Requirements

- o High energy spread beam transport, low losses
(Bench mark simulations)
- o RF Power Production, Stability
(End Energy <50%, 2.6 GW of RF power)
- o Alignment (Test procedures for BBA)
(100 microns alignment for PETS)
- o Drive Beam Stability, Wake fields
(no direct measurement of the wake fields)
- o 'Realistic' show case of a CLIC decelerator
- o Industrialization of complicated RF components
- o Modular Construction:
Build FODO lattice first, add PETS units
(Different Designs or Frequencies possible)

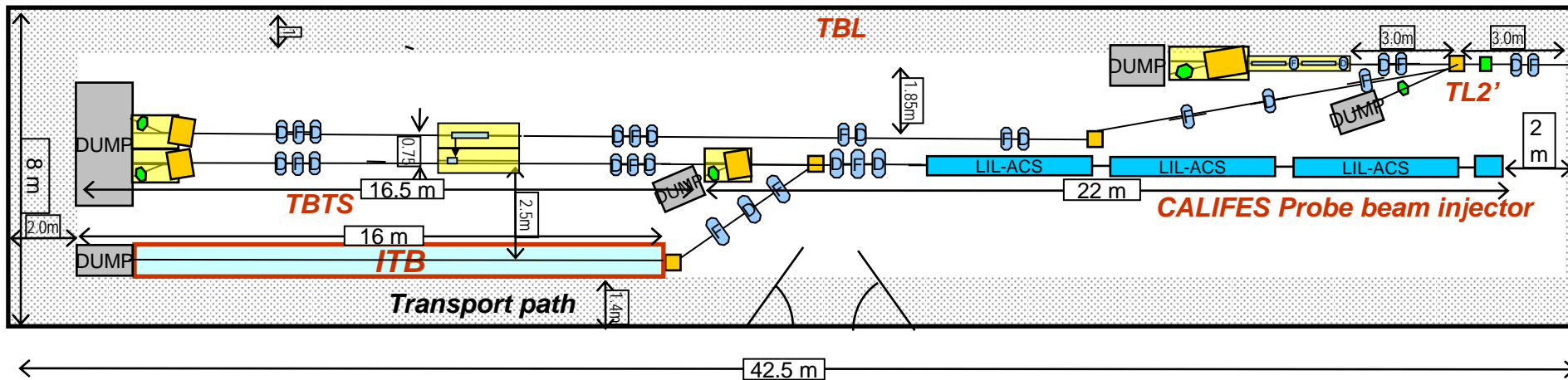
Status 01/2007

- o We have a conceptual design including schedule and cost (See CTF3-Note-076)
- o New TBL-PETS frequency will be 12 GHz (this decision makes the TBL-experiment more relevant for CLIC)
- o Detailed simulations started (see Erik's talk)
- o Design and Prototyping of key components started (BPM, Movers and PETS)



Reduced plans for shutdown 2007/2008

- o Because budget constraints revised plan necessary
- o Only one module to test the prototype elements



TBL-cell

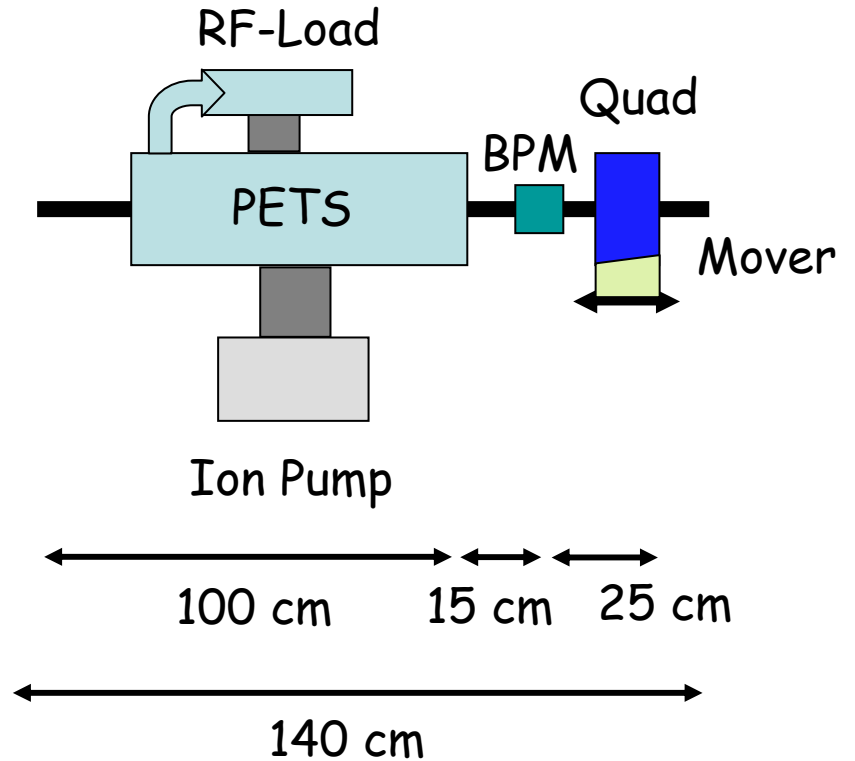
TBL cell length 140 cm

PETS: active length max 80 cm

16 cells planned = 22.4 m

23 mm aperture in PETS

24 mm max in Quads/BPM's



FODO lattice:

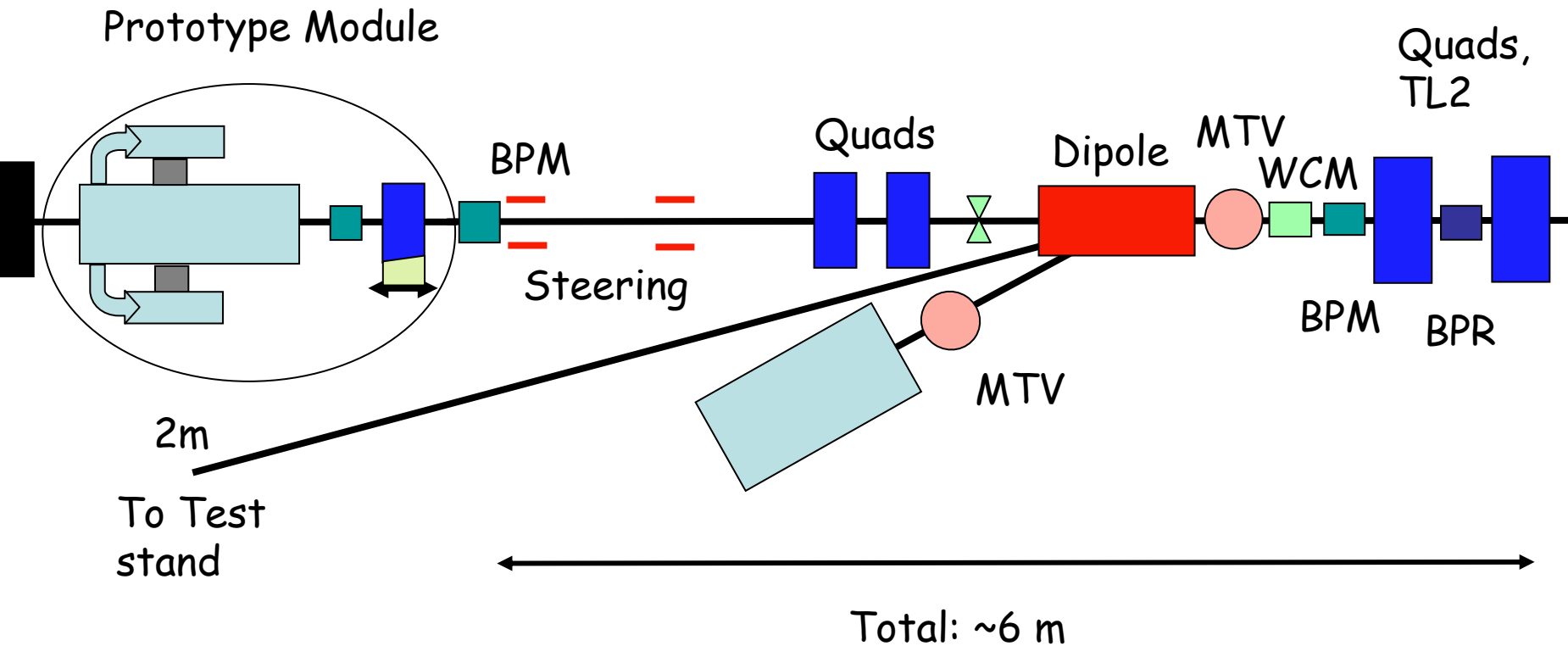
β -max = 4.72 m

β -min = 0.83 m

μ -cell = 90 deg

TBL

2007/2008

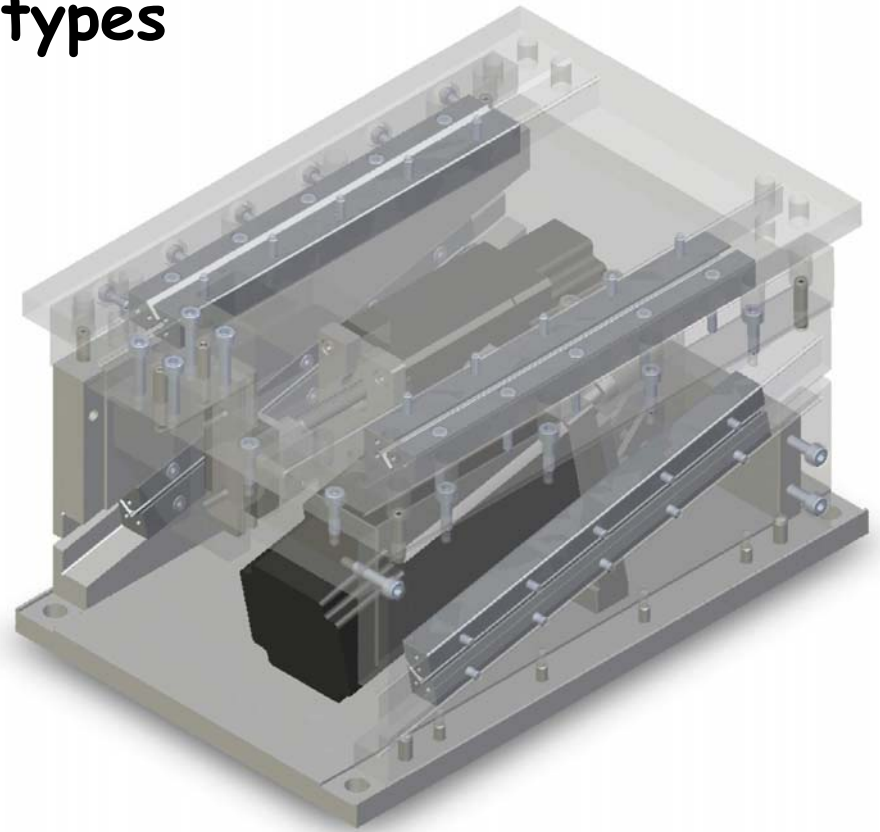


Status of the prototype components

- PETS: rf design finished (see Igor's talk),
PETS manufacturing and tank design progressing
(see Fernando's talk)
- BPM's: design of the pick up and front end electronics finished,
prototype fabrication started
- Quads: New design by Th. Zickler, prototype for next year
- Quad-Movers: Ciemat prototype ready to be shipped to CERN
- High power rf: directional couplers and loads needed
- Low Level rf: conceptual design started
- TL2' diagnostics: Should be ready if started now

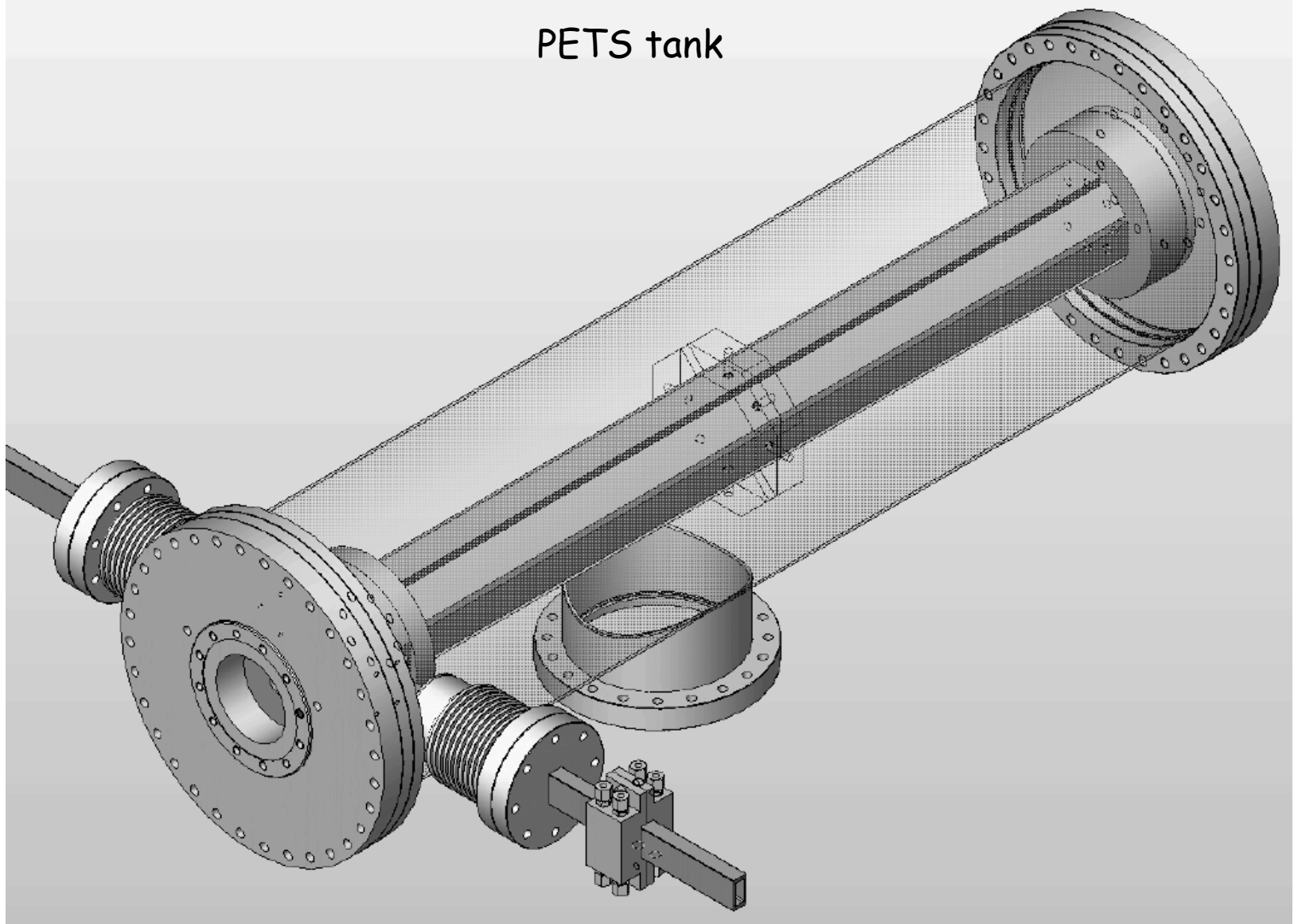
Prototypes

Quad moving table,
Prototype finished



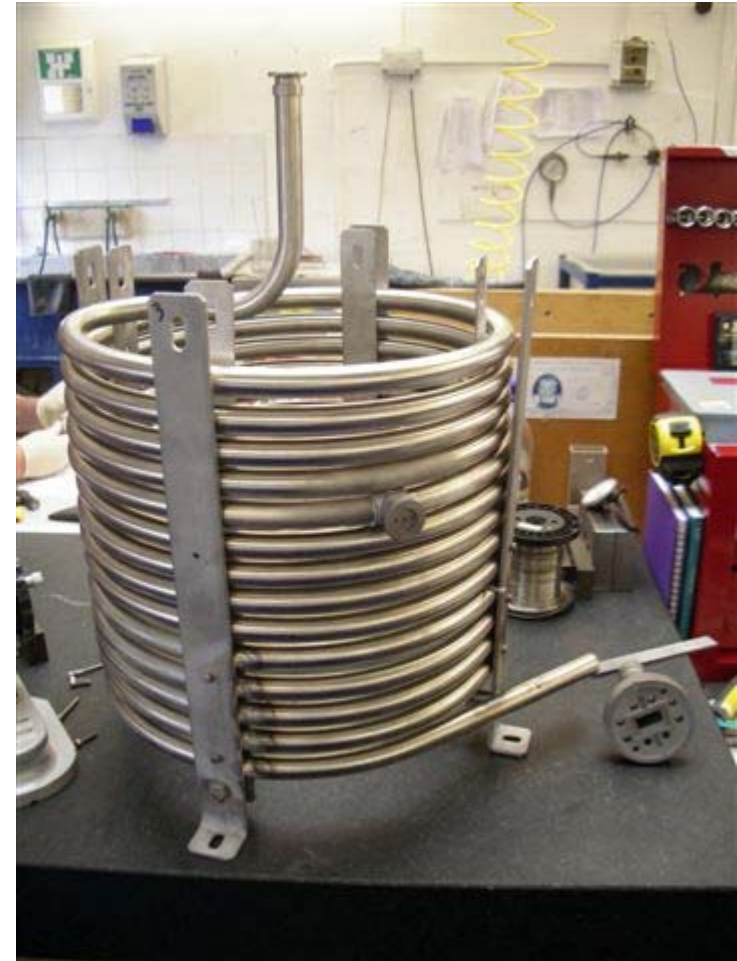
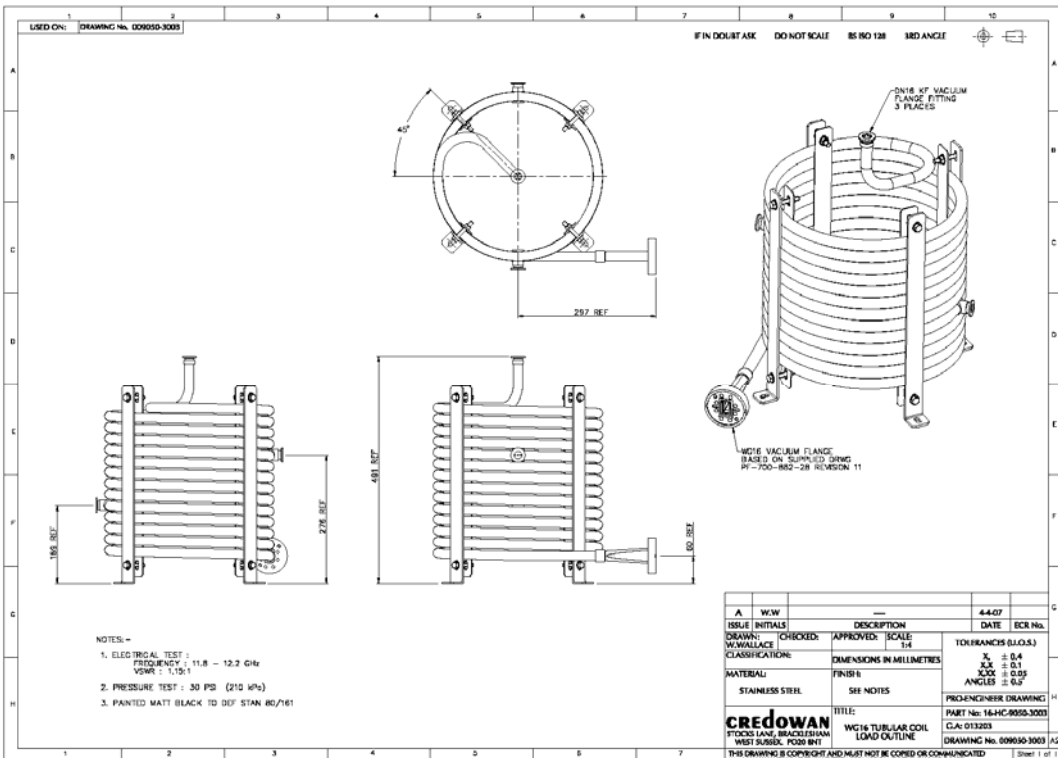
Prototypes

PETS tank



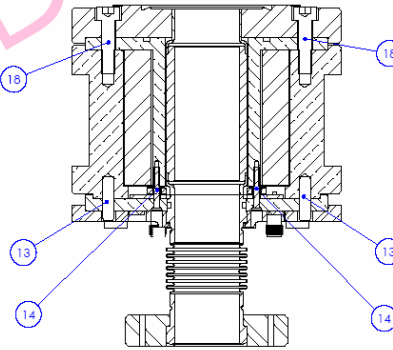
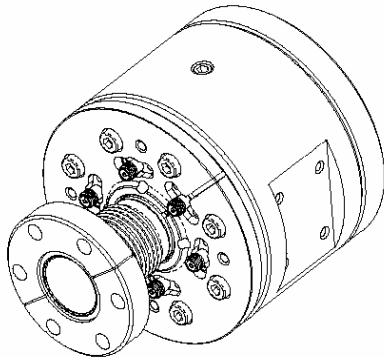
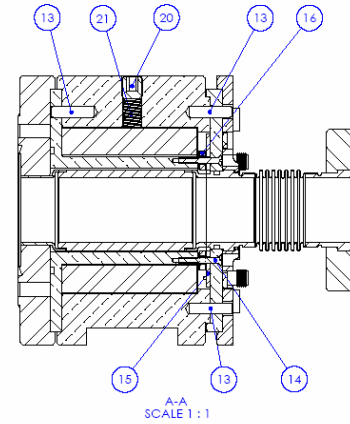
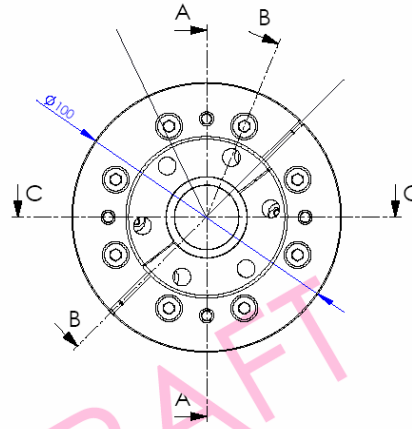
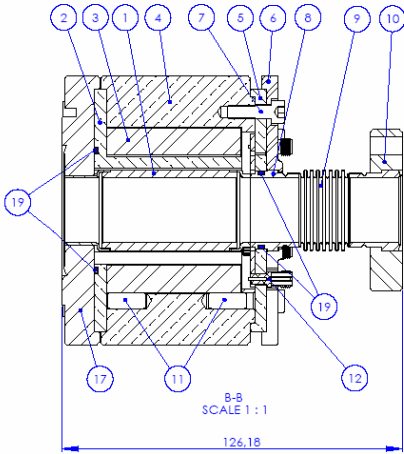
Prototypes

12 GHz high power coil load,
Expected delivery ~3 weeks



Prototypes

BPM

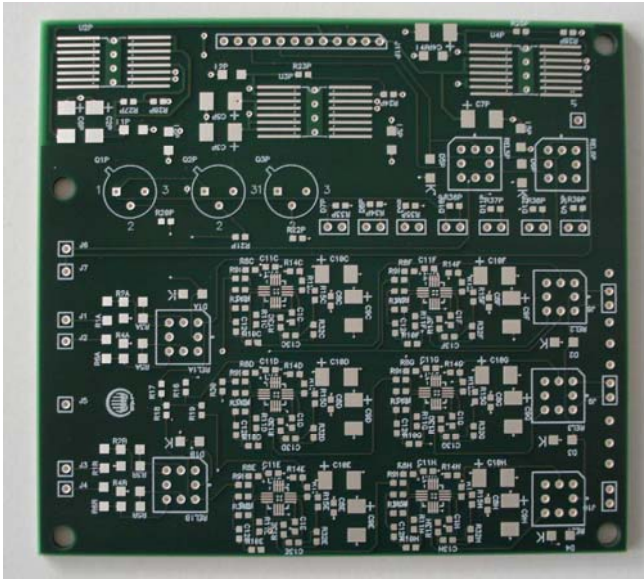


POS.	DESCRIPTION	MATERIAL	QUANT.	OBSERVATIONS
1	Vacuum chamber assembly	----	1	----
2	Electrode	Cu OFE	1	Ref. UNS C 10
3	Magnetic core	C2050	1	----
4	Body	Cu-OFE	1	Ref. UNS C 10
5	Copper bridge	Cu-OFE	1	Ref. UNS C 10
6	Flange	AlSi 304L	1	----
7	Screw DIN 912	Stain. Steel	8	M5 x 16
8	Joint Collar	AlSi 304L	2	----
9	Bellow	----	1	----
10	Rotatable Flange	AlSi 304L	1	----
11	Cyl. Pin	Steel	4	ISO 8734 - $\phi 6h6 \times 14$
12	SMA Connector	----	6	Huber-Suhner 23_SMA-50-0-13/111_N
13	Cyl. Pin	Steel	5	ISO 8734 - $\phi 4h6 \times 16$
14	Screw ISO 2009	Cu Be	4	M2 x 16
15	PCB	Glass Fibre	2	----
16	Transformer	----	4	T6009-E4006-W650
17	Flange	AlSi 304L	1	----
18	Screw DIN 912	Stain. Steel	6	M5 x 20
19	RF Contacts	----	2	BALSEAL BG15H5
20	Screw DIN913	Stain. Steel	1	M8 x 8
21	Comp. Spring	Stain. Steel	1	----

REV.		NAME	DATE	MODIFICATION
		NAME	DATE	TOLERANCES UNLESS OTHERWISE SPECIFIED (ANGULAR $\pm 0.5^\circ$) RADIAL ± 0.2
DRAWN	J. V. Civera	30/03/07		LINEAR DIMS ± 0.5 ± 0.6 ± 0.30 ± 0.20 ± 0.1000 ± 0.2000
CHECKED	J. V. Civera	30/03/07		MACHINED DIMS ± 0.1 ± 0.2 ± 0.3 ± 0.5 ± 1.2 ± 2
MATERIAL:		WELDED DIMS $-$ ± 0.5 ± 1 ± 2 ± 3 ± 4 ± 6		
SIZE	SCALE	SURFACE FINISH Rf		TITLE
A2	1:1	GEOMETRIC TOLERANCES		TBL BPM ASSEMBLY
IFIC Instituto de Física Corpuscular. CSIC - Universitat de València.				DRAWING NUMBER CTFBIPU0012-TBL
				REV. -

Prototypes

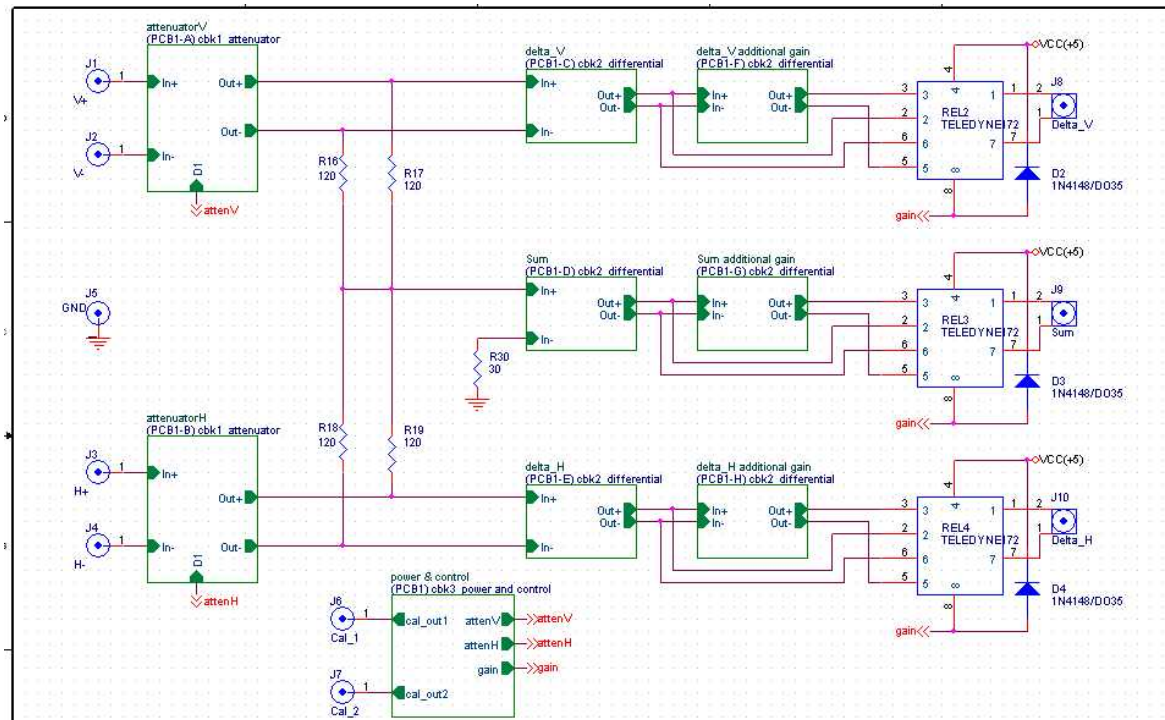
BPM-analog electronics



Design finished,

PCB finished,

Prototype testing has to be done



Tentative TBL-Schedule

Jul-Dec 06	Jan-Mar 07	Apr-Jun 07	Jul-Sep 07	Oct-Dec 07
Define module , Diagnostics, 12 GHz PETS	Fabrication of prototypes			
	Test of Prototypes			

Jan-Mar 08	Apr-Jun 08	Jul-Sep 08	Oct-Dec 08
Install 1 Module		Install a bit more ?	
Series production			

Jan-Mar 09	Apr-Sep 09	Oct-Dec 09	Jan-Mar 10	Apr-Jun 10
Install up to 8 PETS 1.2 GW	Run with 8 PETS 1.2 GW		Install remaining 8 PETS	Run with 16 PETS 2.4 GW

Conclusions

- With the current budget only prototyping can be done this year
- A minimal program of testing one prototype module is feasible and will help a lot for the project.
Prototypes of BPM, electronics, quad mover and PETS are being built by our collaborators
- If the prototypes are successful and the budget in 2008 sufficient the final project is only slightly delayed