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Two-beam Test Stand Status Report

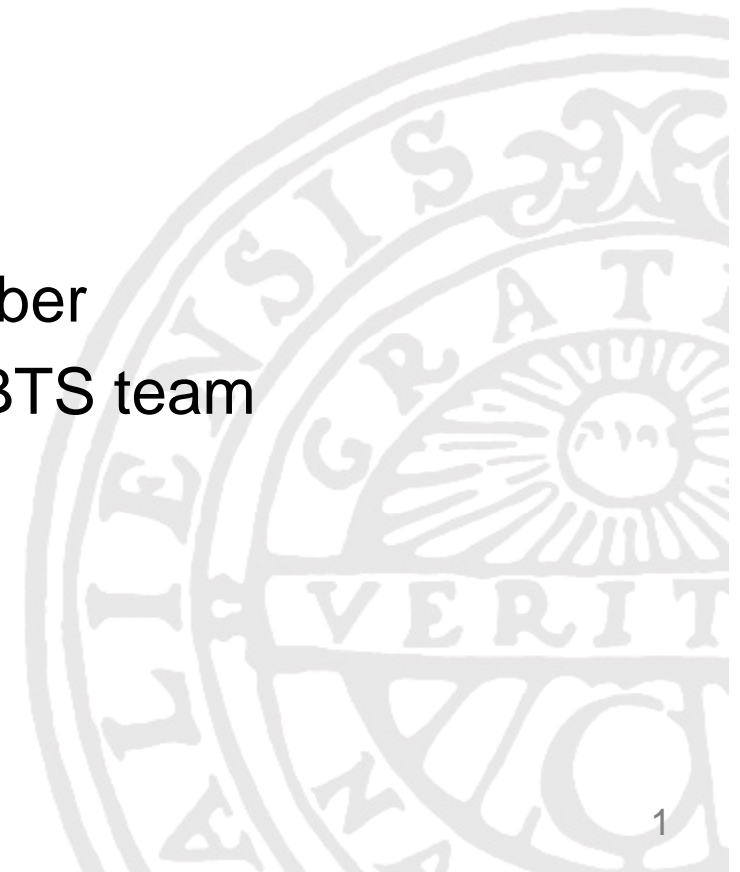
Roger Ruber
for the CTF3-TBTS team

Roger Ruber

CLIC08

15-Oct-2008

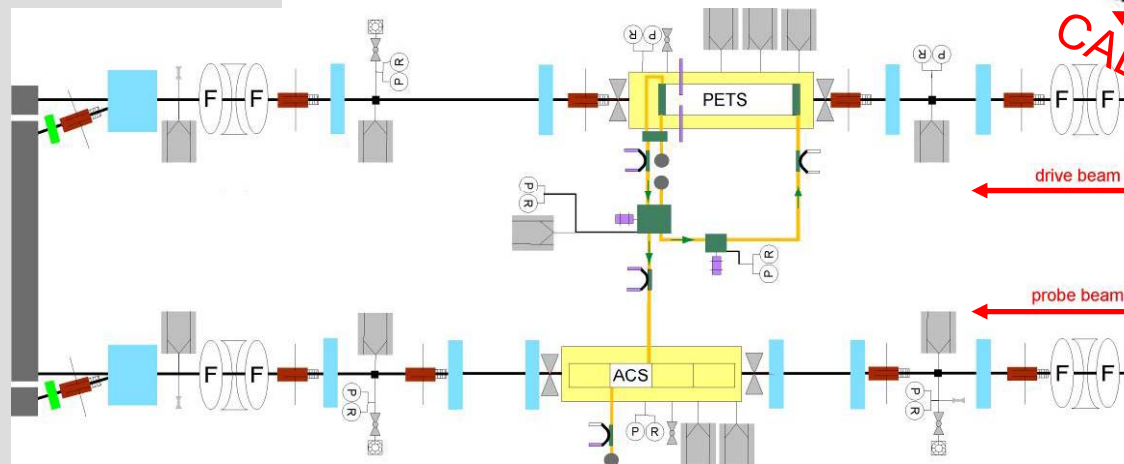
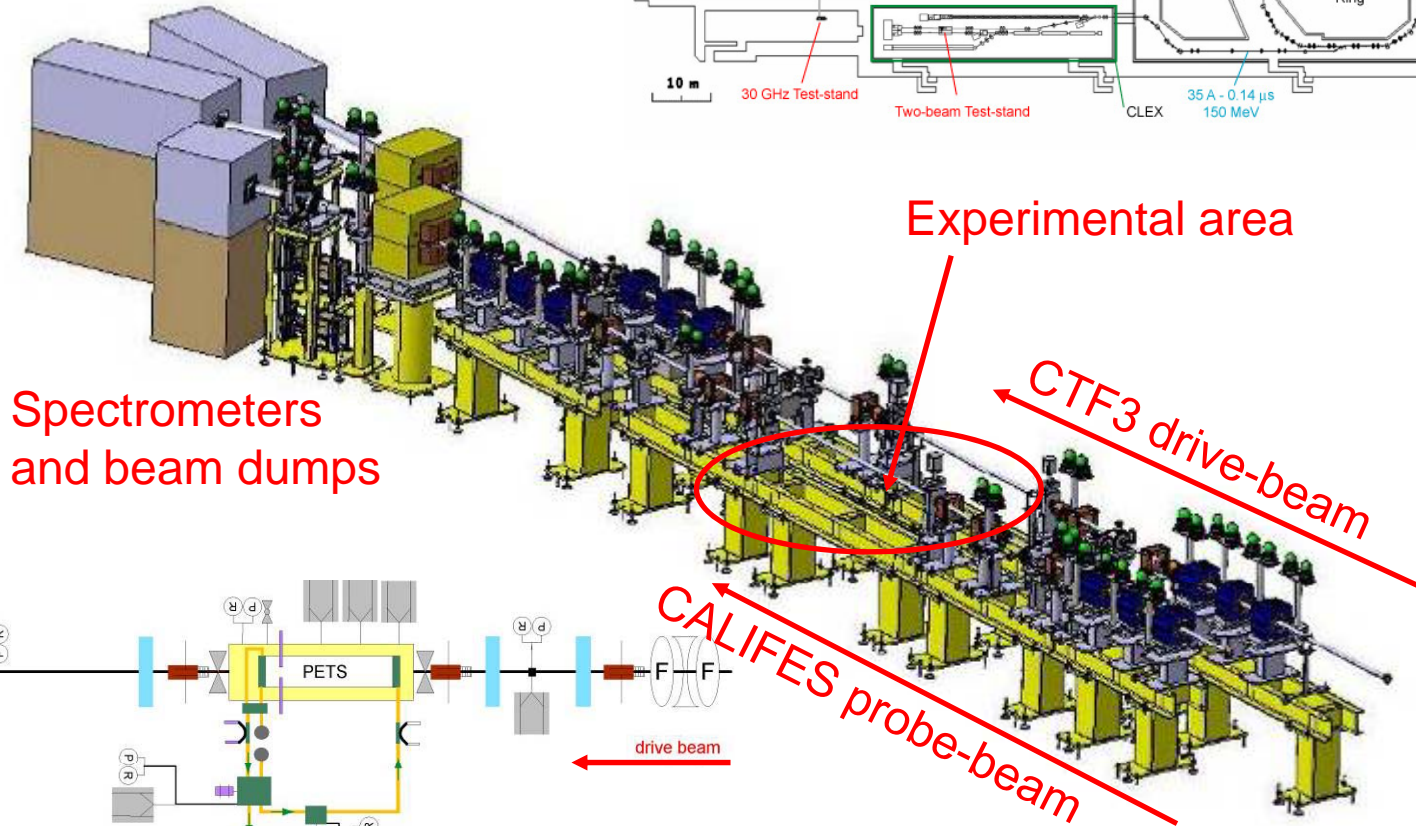
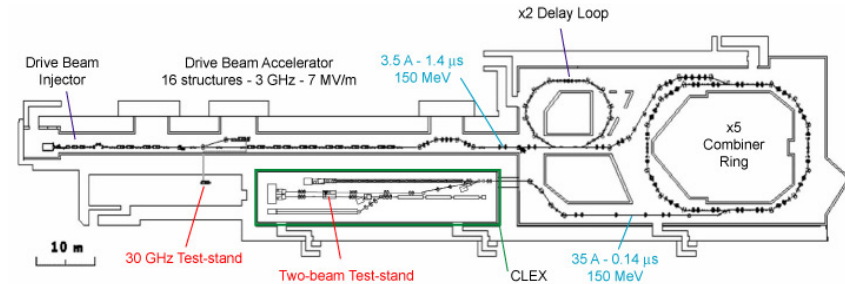
TBTS Status





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Two-beam Test Stand Layout



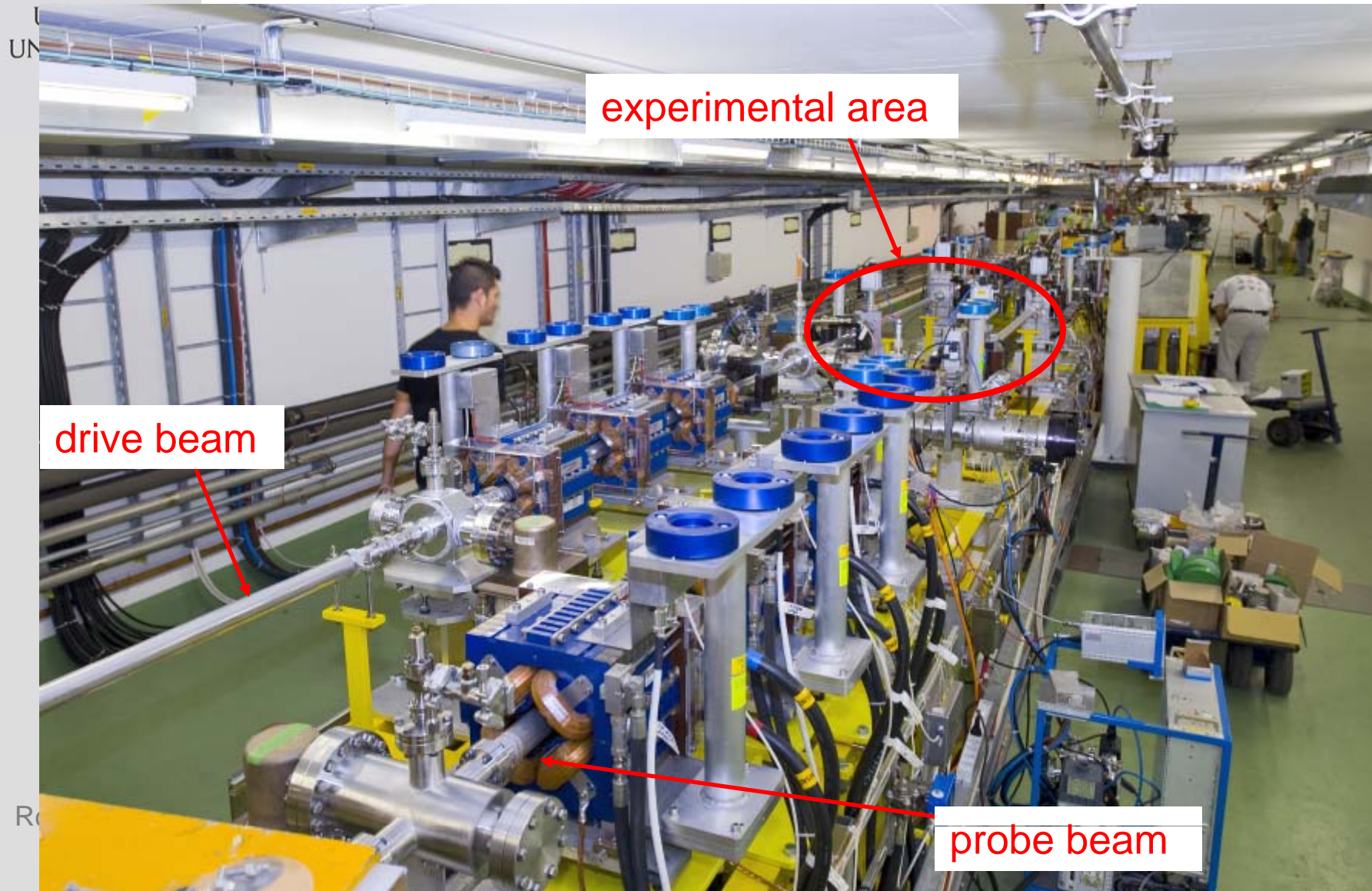
Construction supported by the Swedish Research Council and the Knut and Alice Wallenberg Foundation

15-Oct-2008

TBTS Status



CTF3 Two-beam Test Stand





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CTF3 Two-beam Test Stand Prospects

Versatile facility

- two-beam operation
 - high power drive-beam [$\sim 30\text{A}$ vs. 100A at CLIC]
 - high quality probe-beam [$\sim 1.0\text{A}$ like CLIC]
- excellent beam diagnostics, long lever arms
- easy access & flexibility for future upgrades

Unique test possibilities

- power production & accelerating structures
 - beam kick
 - beam dynamics effects
- full CLIC module
 - beam-based alignment

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TBTS Status



Testing Phases

Phase 0

- commissioning beam lines, w/o structures

Phase 1

- tests with PETS in drive beam line

Phase 2

- PETS in drive beam line
- accelerating structure in probe beam line



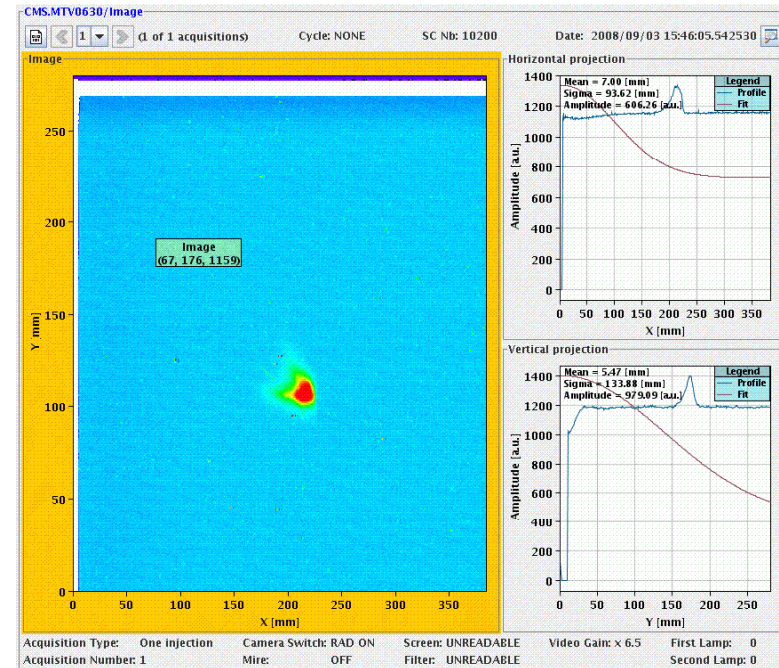
Phase 0: First Beam on 3rd September

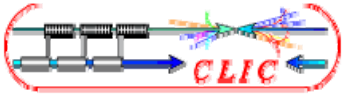
Commissioning

- beam passed through small losses w/o orbit correctors
- moderate debugging
 - 5x BPM's
 - 1x MTV

To be done

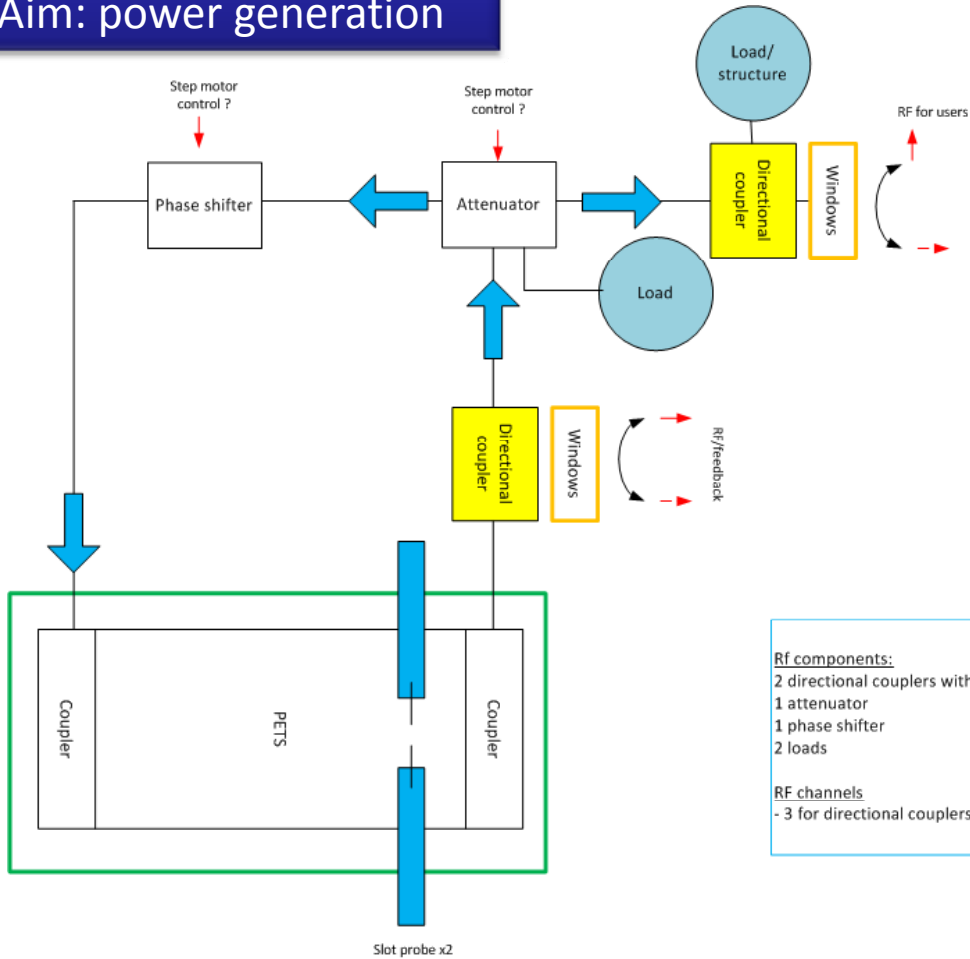
- R_{12} measurements, BPM-scales
- knobs for position and angle bumps
- knobs for beta-function and waist position
- emittance measurement with quad scan and MTV



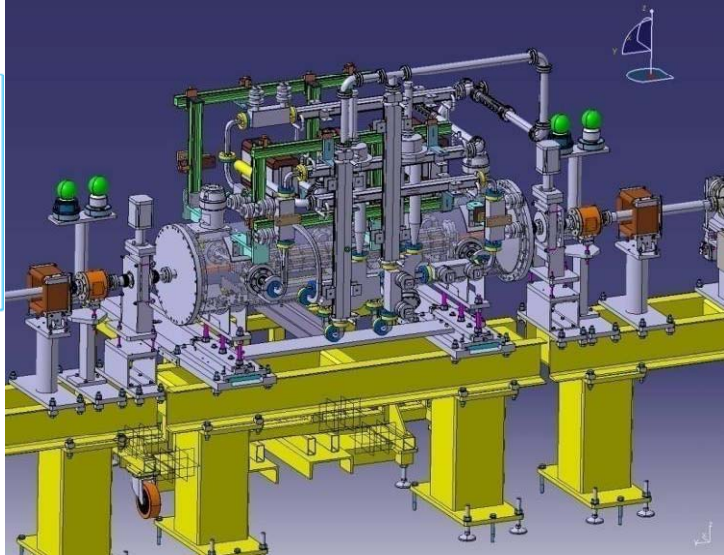
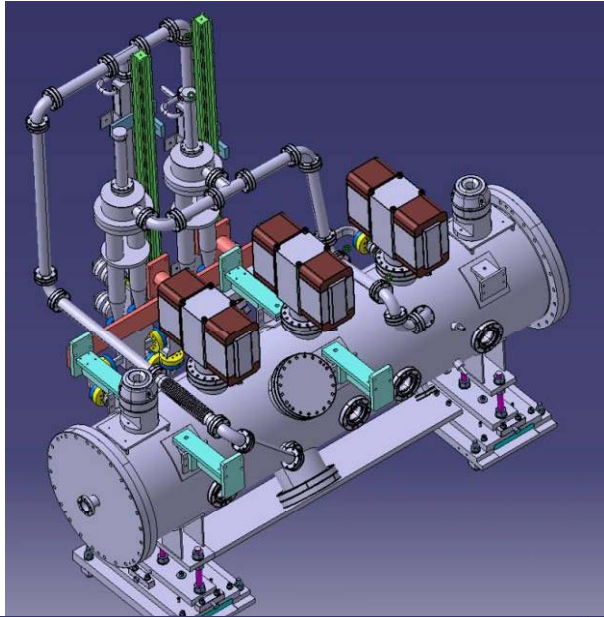


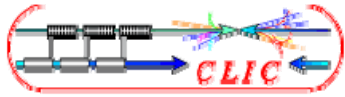
Phase 1 - layout

Phase 1: PETS only
Aim: power generation

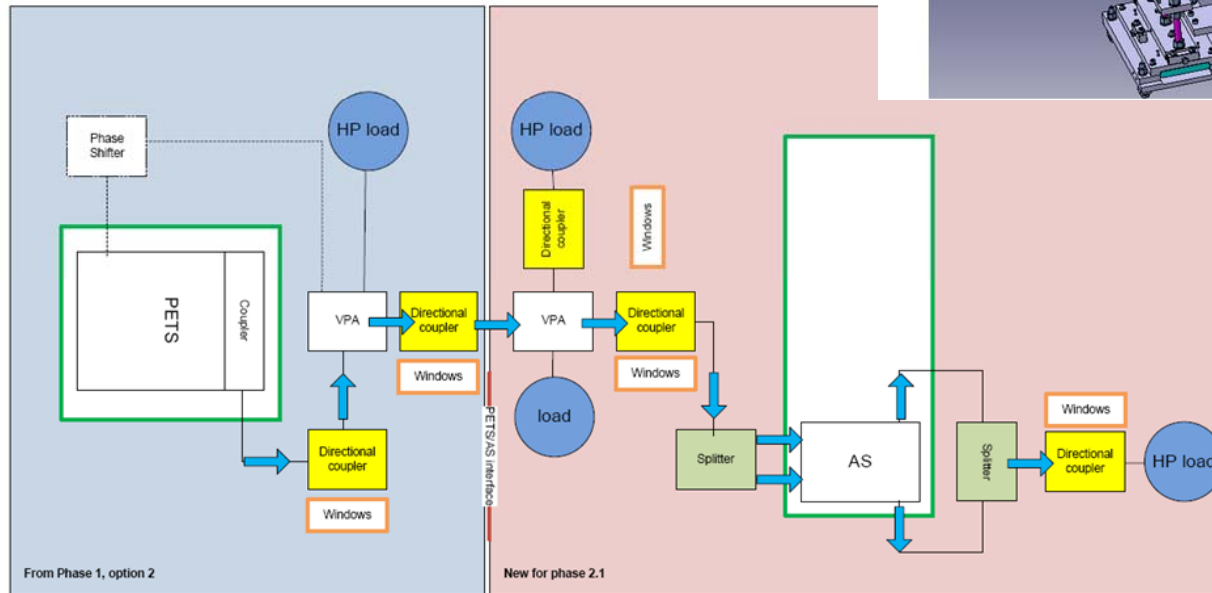
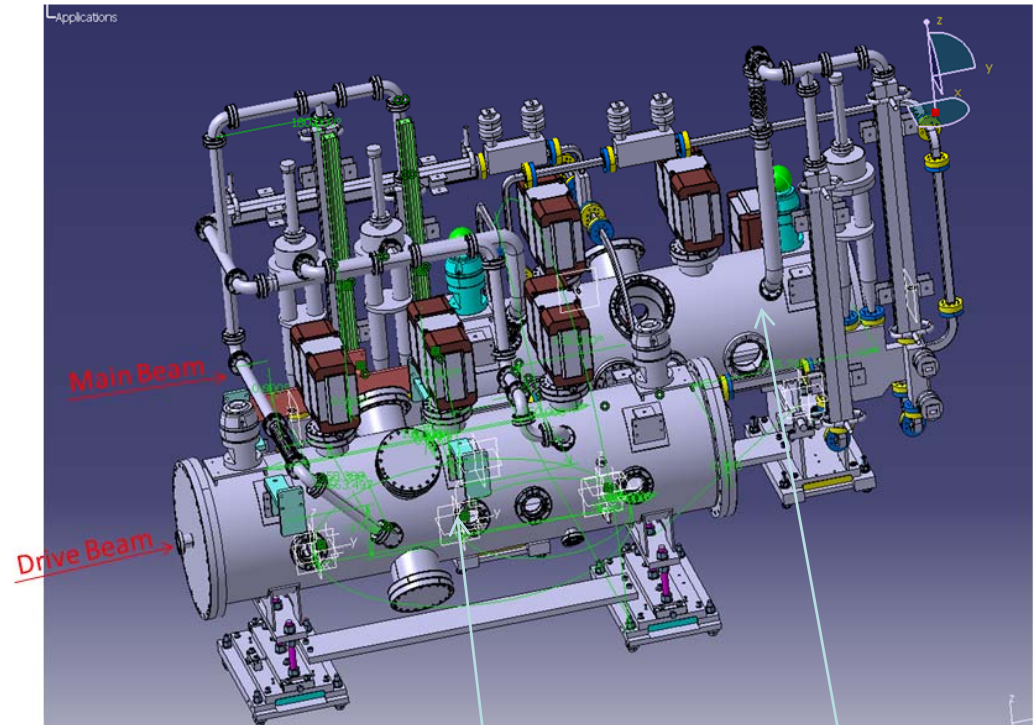
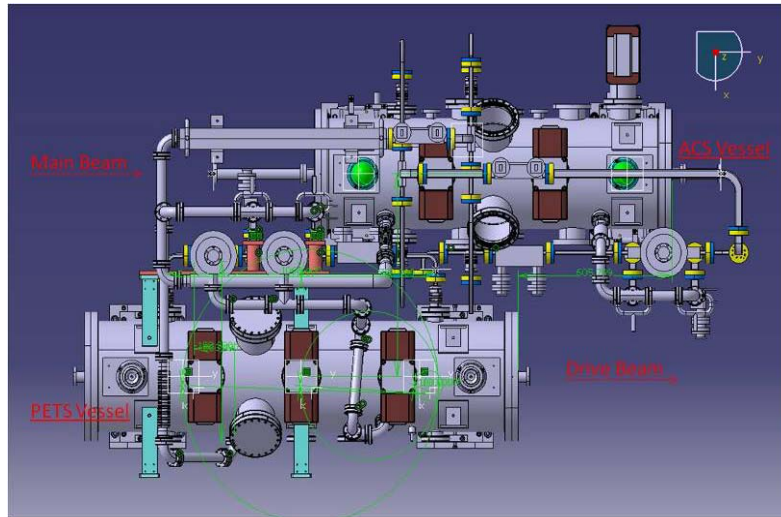


- RF components:
 2 directional couplers with windows
 1 attenuator
 1 phase shifter
 2 loads
- RF channels
 - 3 for directional couplers





Phase 2 - layout



PETS

Accelerating structure