

Summary from MDI meeting
First part, 9-11 September,
mechanical design

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First comments from the discussion regarding mechanical design
(Monday 9 - Wednesday 11)

Necessary ingredients to start with a CAD design

- Cryostat dimension definition
 - Lumical not attached to cryostat
 - Update 2d mechanical design started by S. Pivovarov taking into account our discussions during the workshop
 - Need budget of weights: solenoids, quadrupoles, cryostats, lumical,...
 - Thermal power budget in the IR (HOM, RW, e-cloud, SR, beam loss)
 - 3d magnetic field calculation
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- Common repository

Mechanical design tasks

- Simple model of beampipe to A. Novokhatski
- Evaluate the effect of the em static forces from magnets interaction
- Pre-dimensioning of the support structures (important also for space allocation in the MDI area)
- Pre-dimensioning of the cooling system
- First draft of 3D CAD model
- Verification of the space to be allocated for MDI for a negotiation with detector experts

Further steps

- Mechanical tolerances definition
- Alignment strategies
- Vibration control and stability
- Vacuum chamber details: flanges, BPM, bellows, joints, material, pumps, gauges
- Magnet quench management: forces, gas venting, ..
- Coolant choice
- Cables