

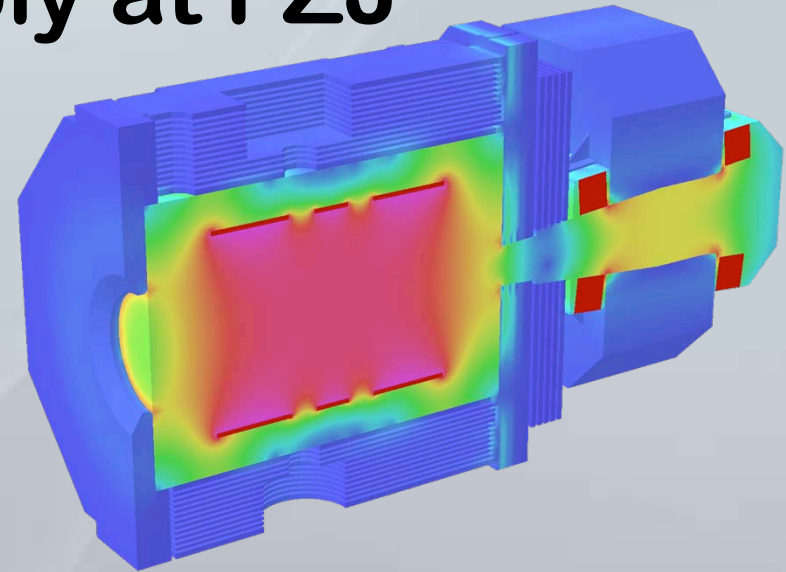


Magnet Pre-Assembly at FZJ

Inti Lehmann

PANDA TB

1 Sept 2010

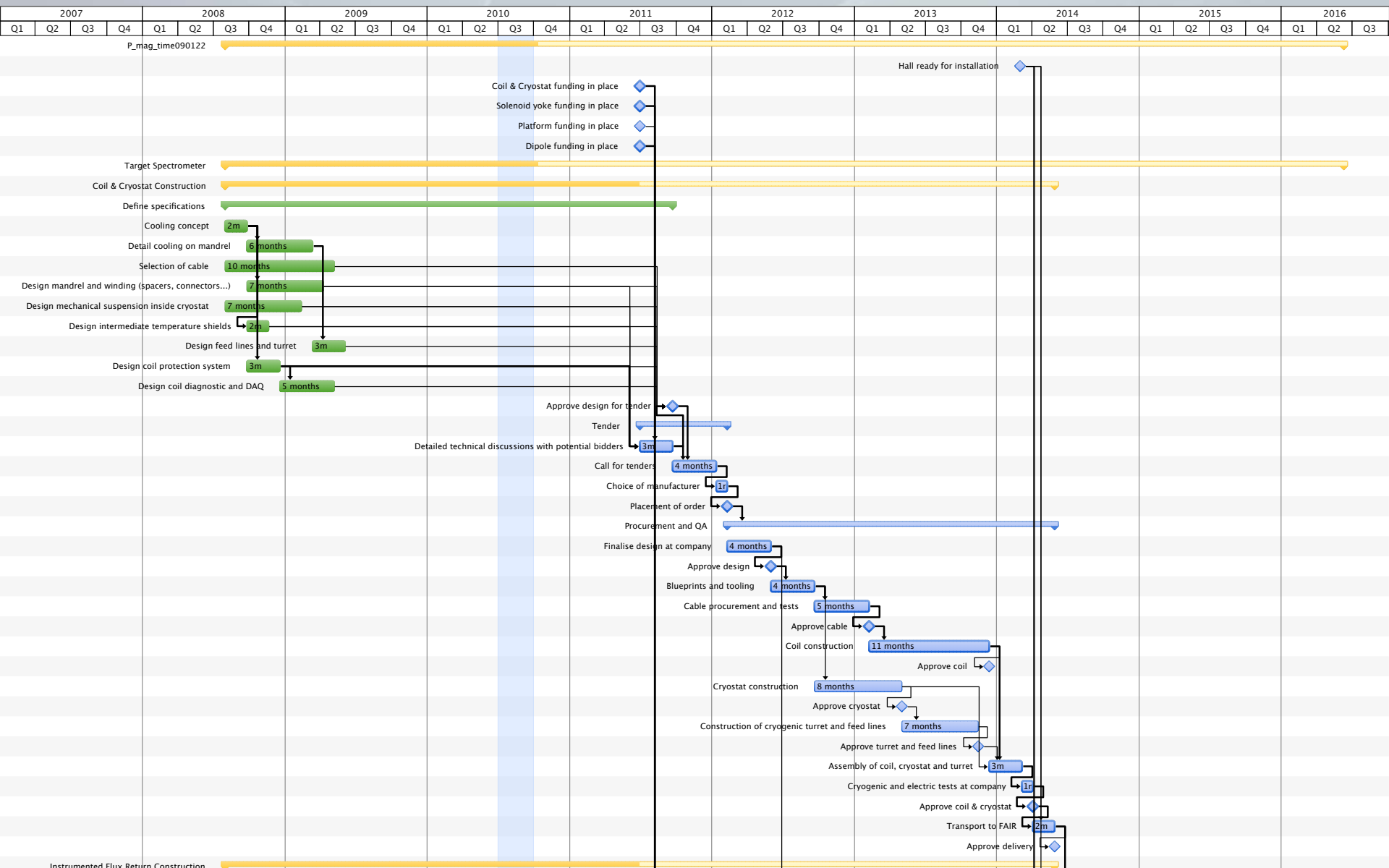


Magnets at FZJ

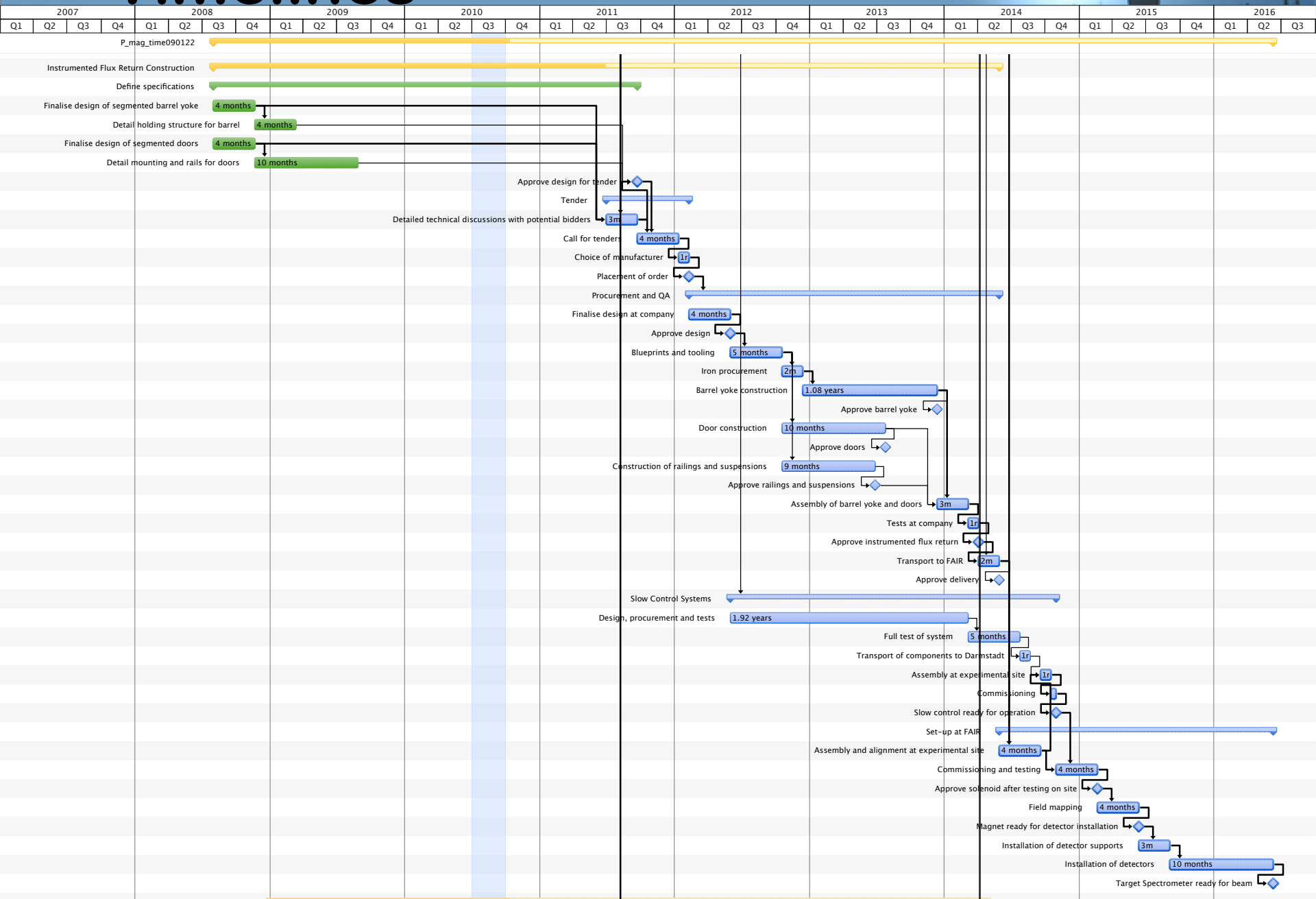


- Use of installation of components at FZJ
 - **Solenoid**
 - Field mapping - 6 month
 - Integration tests
 - Beam operation not feasible - partial yoke no use to shield field
 - **Dipole**
 - Field mapping – 3 month
 - Integration tests
 - No use for beam operation seen
 - **Platform**
 - Integration/operation tests
 - **Muon filter**
 - Combined solenoid and dipole field studies

Timelines

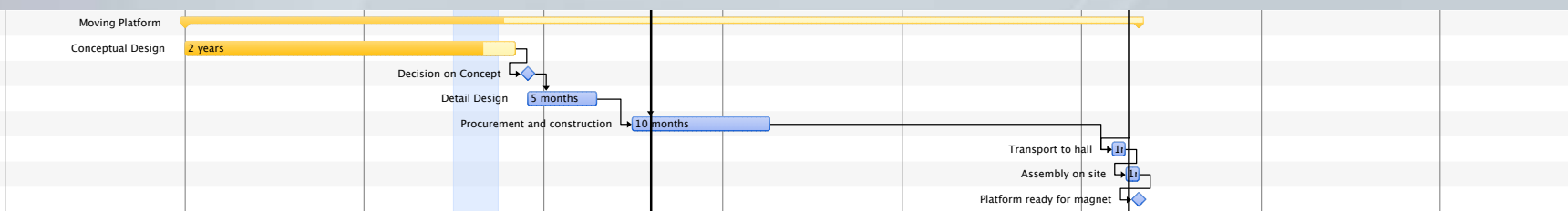


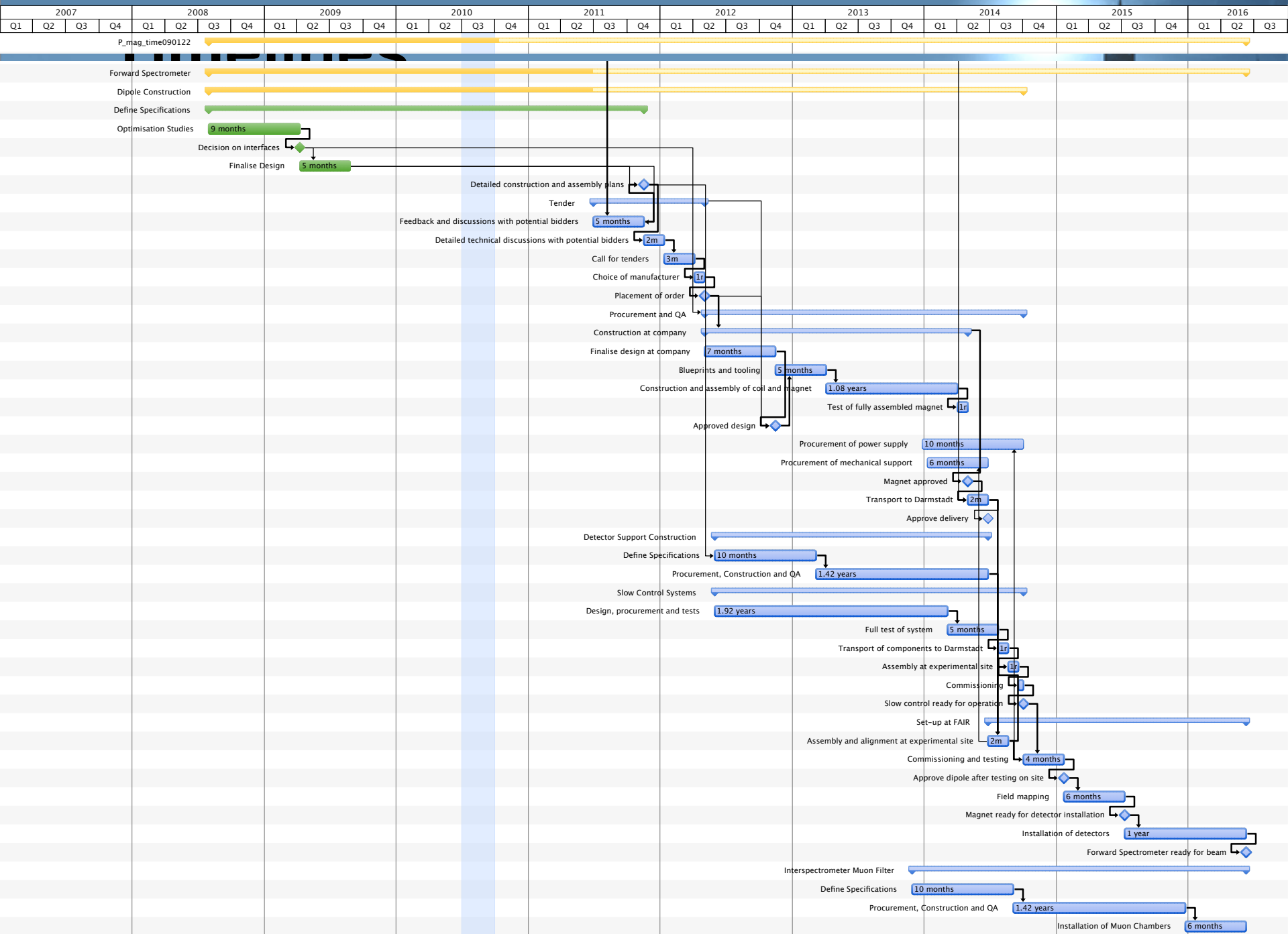
Timelines





2007				2008				2009				2010				2011				2012				2013				2014				2015				2016		
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3				
P_mag_time090122																																						





Magnets at FZJ

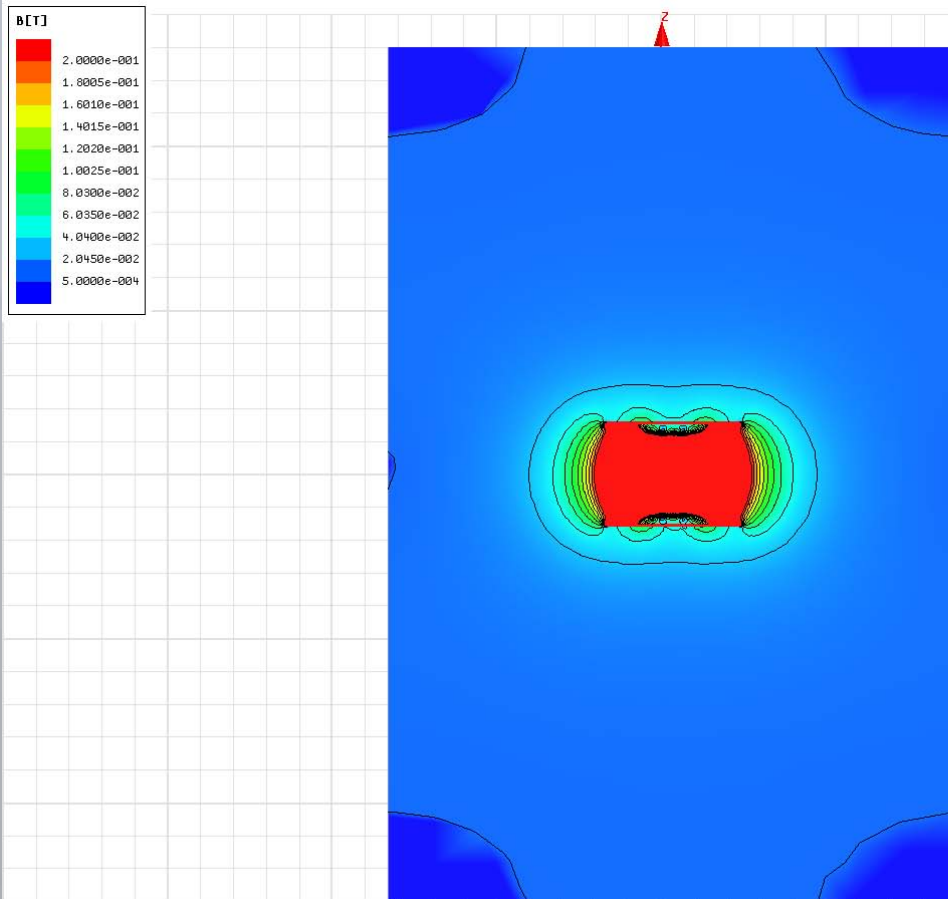


- **Pros**
 - **Integration and operation tests**
 - time contingency for possible repair
 - **Field mapping**
 - no time pressure
 - start earlier at FAIR – max $\frac{3}{4}$ year
 - **Allows for work to proceed**
- **Cons**
 - **Additional manpower and funds required**
 - to be evaluated
 - **Risk of transport damage**
 - rather low

Summary

- Field mapping
 - Solenoid and dipole can be mapped
 - saves about $\frac{3}{4}$ of a year
- Integration and operation tests
 - Contingency to alleviate problems
 - No operation with detectors feasible
- Risks
 - Funding (timely, incl. add. funds)
 - Manpower availability

Magnetic field around the magnet



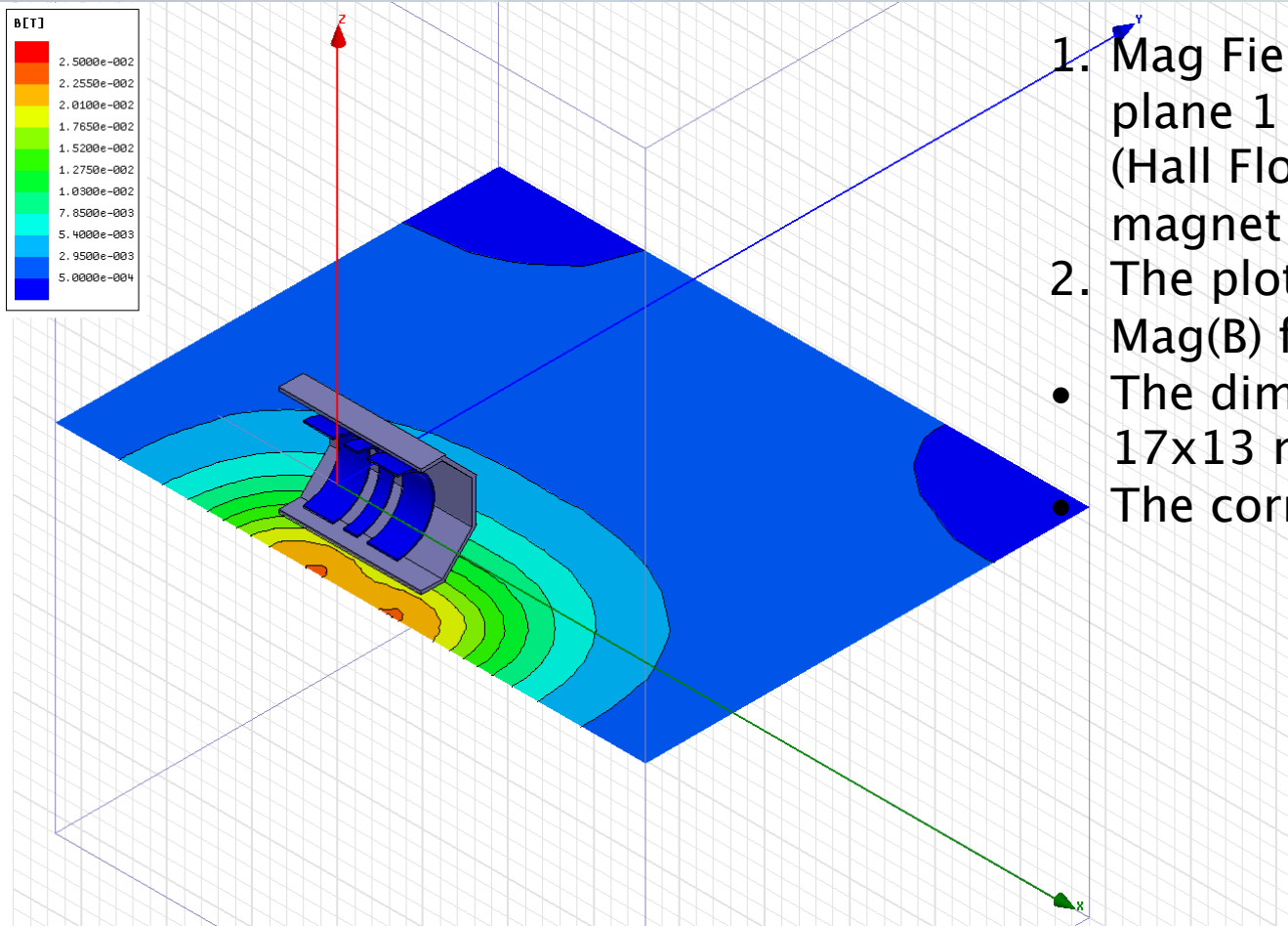
1. Mag Field Magnitude on the median plane of the coil
2. The plot gives the Isolines of $\text{Mag}(B)$ from 200mT to 0.5mT
 - The dimensions of the box are 17x26 metres
 - The red zone is the 200 mT
 - The corner are 0.5 mT

Comments

It appears that roughly all the hall is over .5 mT and need a controlled access

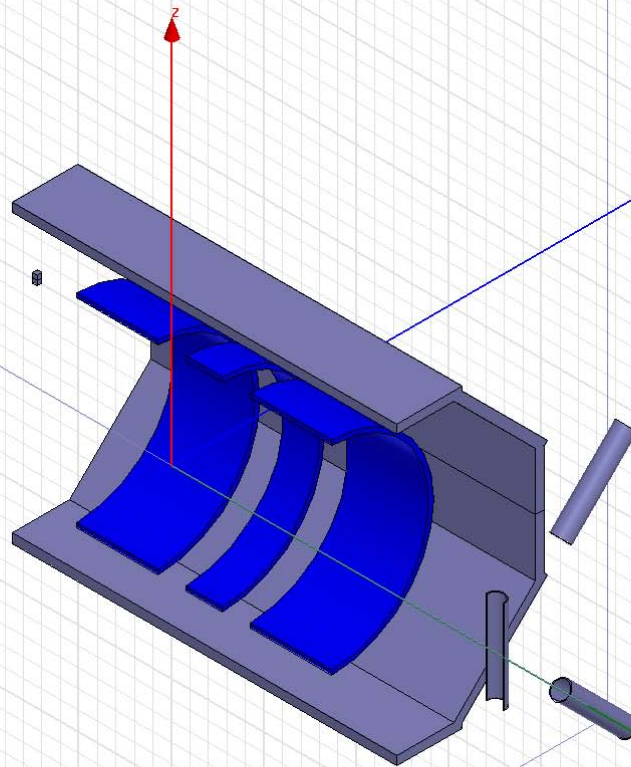
The region over 200 mT is quite restricted and close to the Iron end. We need to carefully evaluate the effect of the Magnetic Force on free object inside the experimental Hall.

Magnetic field around the magnet



1. Mag Field Magnitude on the plane 1 Metre below the iron (Hall Floor supposing some magnet support)
2. The plot gives 10 Isolines of Mag(B) from 25mT to 0.5mT
 - The dimensions of the box are 17x13 metres
 - The corner are 0.5 mT

Evaluation of effect of magnetic Bodies

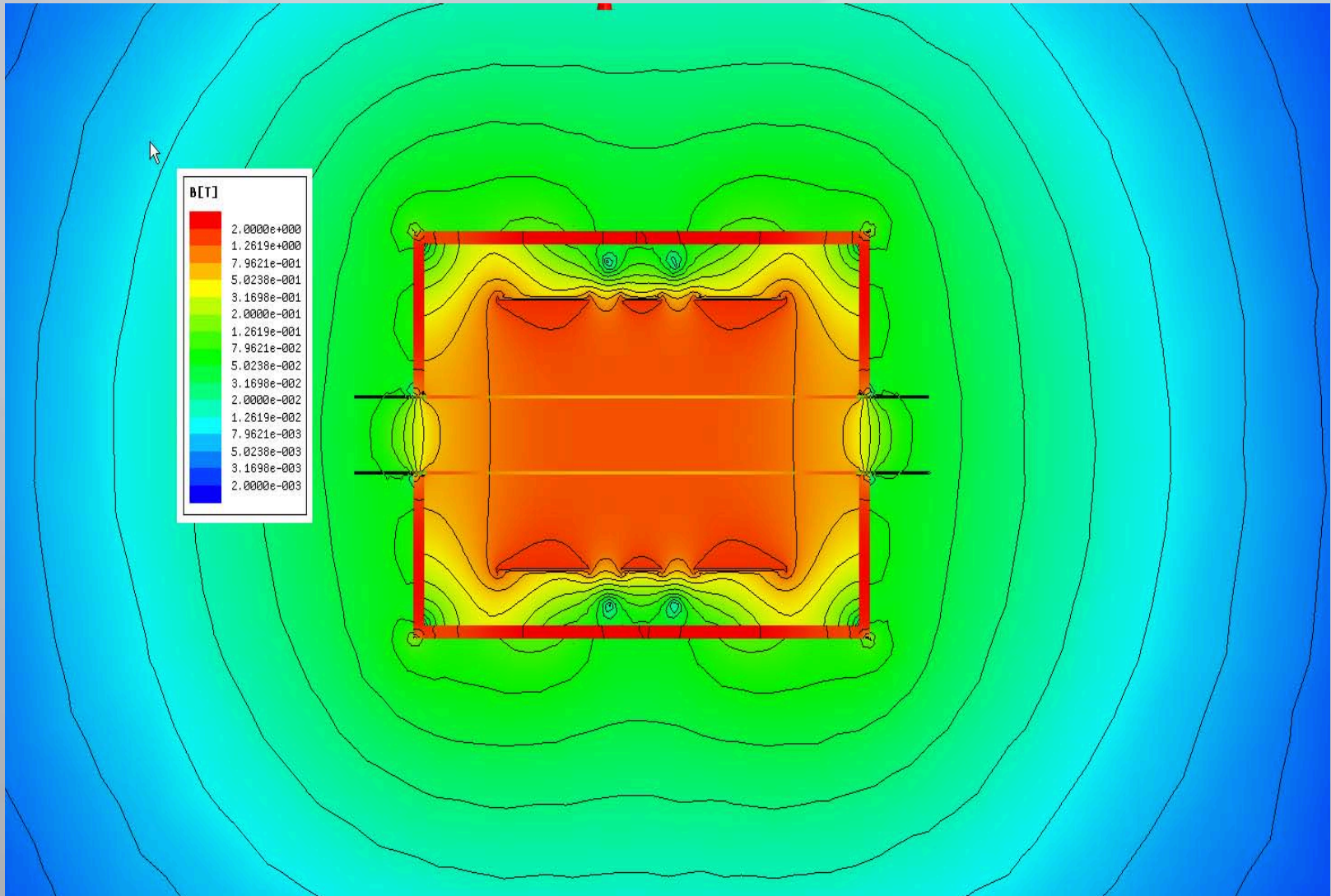


Solid model of the Magnet and a couple of Steel 1010 pipes plus some Steel 1010 cubes to evaluate the effects of magnetic bodies close to the magnet.

The bodies are

- Pipes 200mm Φ and 1000mm length (gas cylinder) and cubes 50x50x50 mm (hammer and tools)
- The bodies are placed a 1000mm from the iron end (bottles) and 750mm Hammers.

Field with doors



Agenda of Meeting on Tue



- Topics
 - **Design of the target spectrometer platform**
 - Edward Lisowski
 - Jost Luehning
 - Inti Lehmann
 - **Considerations on a set-up at FZJ**
 - Andrea Bersani
 - Inti Lehmann
 - All: discussion
 - **Infrastructure: power supplies and cryogenic needs**
 - All: discussion