

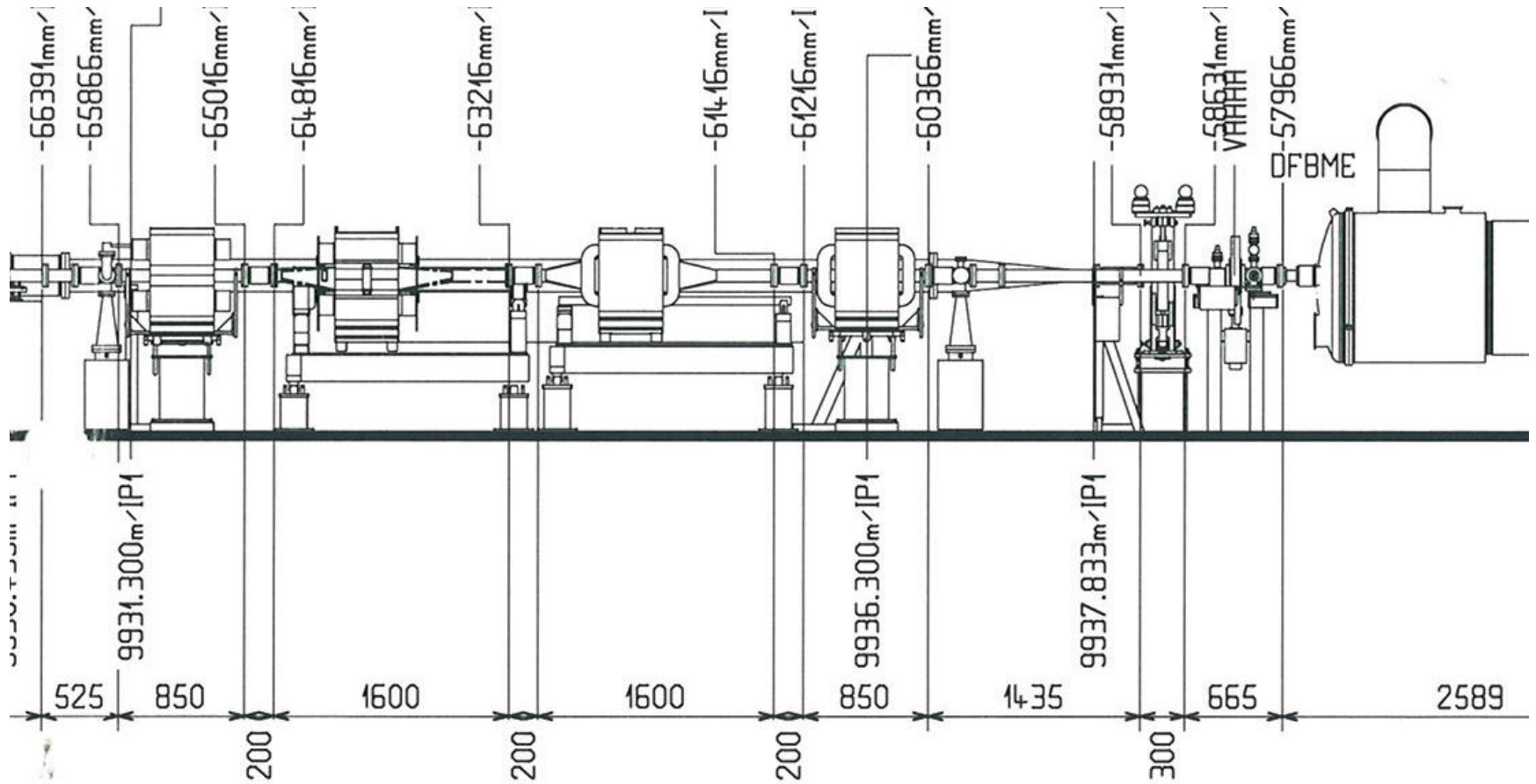
**BGV: modify BGI vacuum chamber
of construct a new one?**

M. Sapinski, 2012.12.07

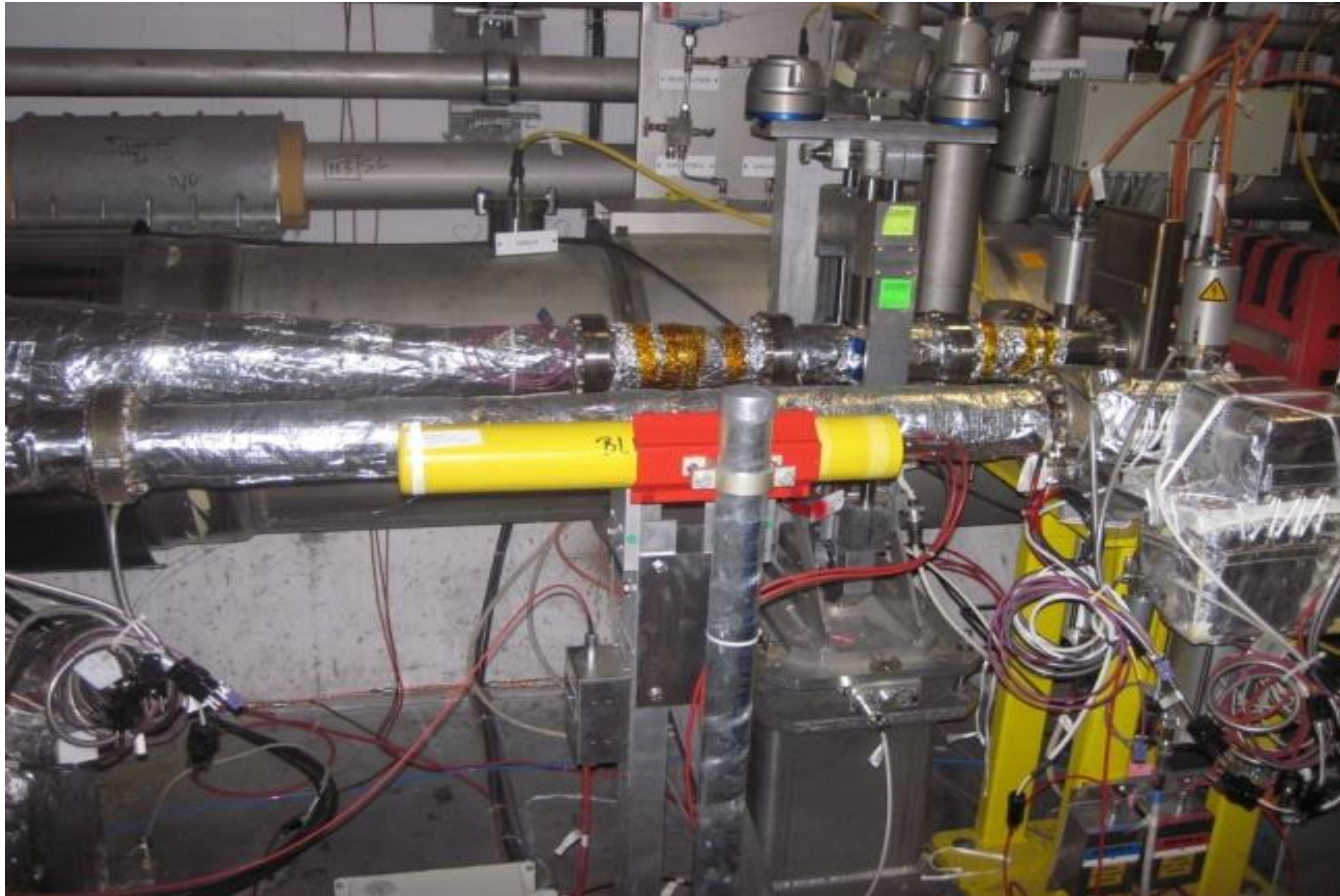
discussion

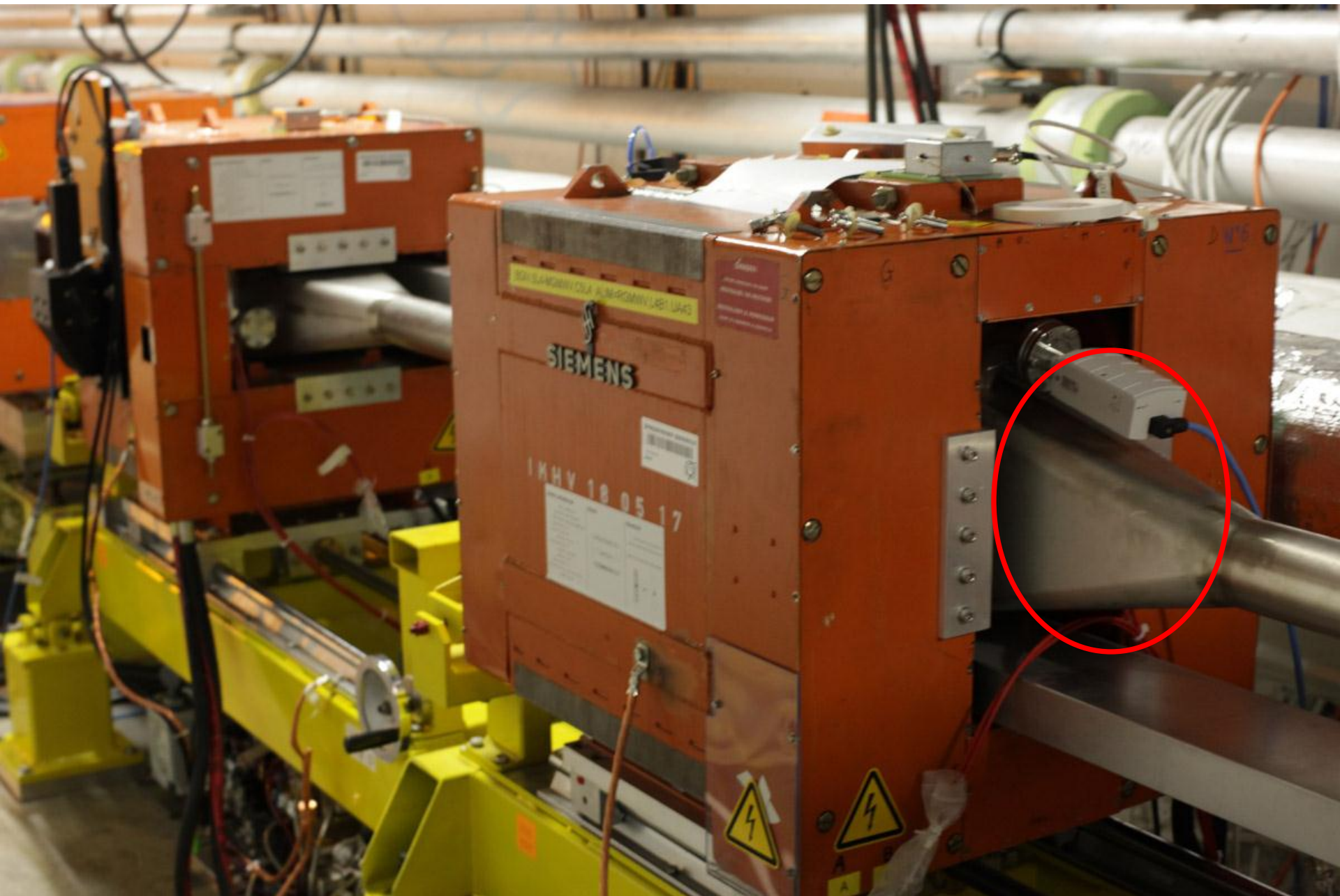
- Discussion took place on Friday, November 9th, 2012 over coffee in R3
- Present: Ray, Bernd, Massi, Plamen, myself
- Ray printed technical drawings
- Visit to IR4 planned

BGI zone



Downstream BGI zone





BGI chamber modification

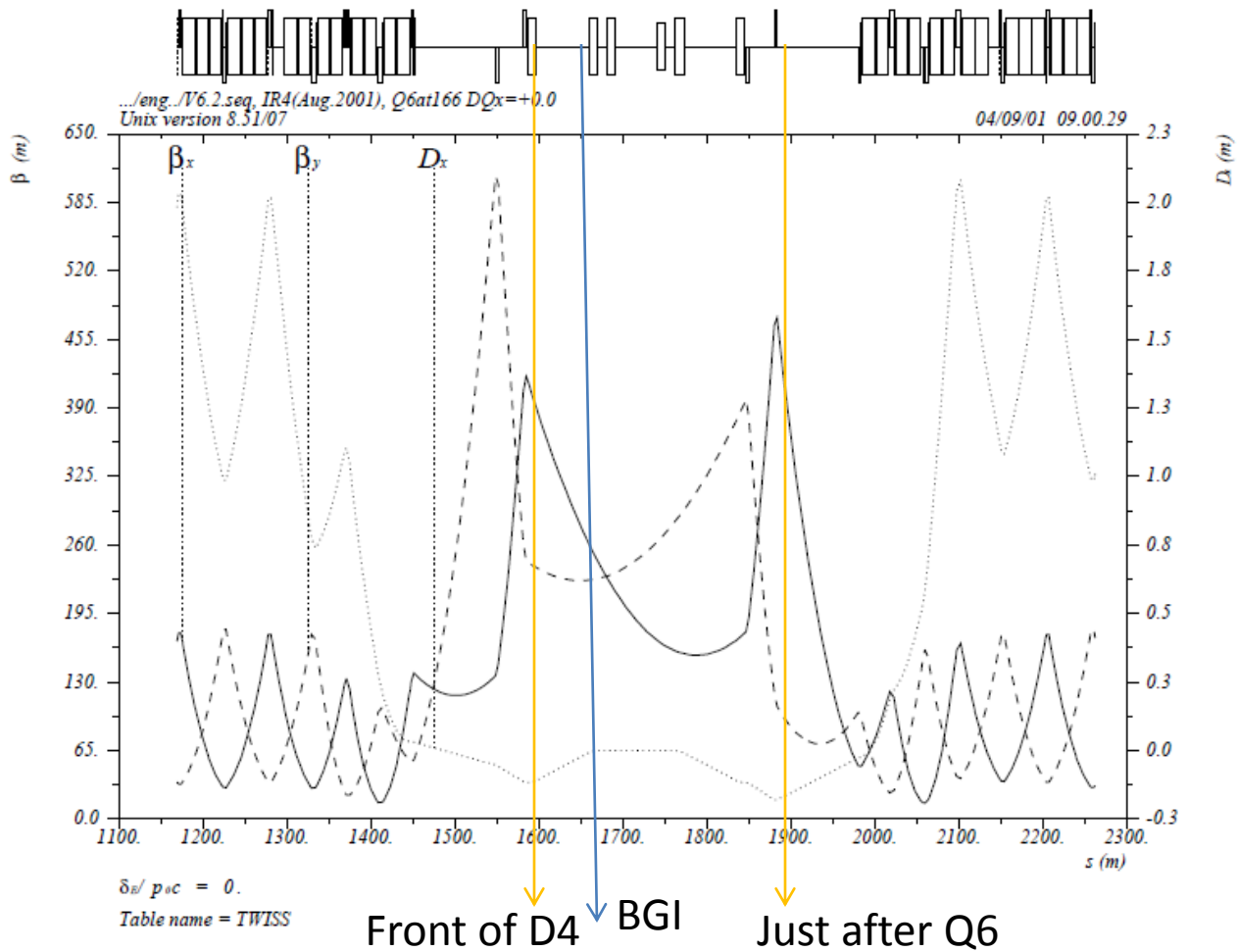
Pros:

1. There is a fully functional gas injection system in place
2. Distance between beams is larger than in most other possible locations

Cons:

1. Probably a new chamber should be constructed anyway (we have no spares)
2. There is not much space in between the magnets
3. It will affect BGI operation (i.e. no cross-calibration)
4. Issue with remnant magnetization influencing vertex reconstruction even if magnets are off
5. Increased risk in case of BGI opening for maintenance

IR4 B1 optics (TDR)



New chamber

Pros:

1. New chamber can be adopted to BGV needs (e.g. cooling)
2. A place with large beta function and a lot of space can be chosen
3. Gas bump can be adopted to BGV needs (it needs to be as limited longitudinally as possible, what is not the case for BGI)

Cons:

1. Another gas injection (already this year RP complained about activation due to gas injection in IR4) – only if we go for active injection.
2. The design must be done very soon.

Outcome

1. Construction of new chamber and installation in different location should be our primary goal.
2. Need to write ECR rather soon, so that all interested parties can study it. Also we reserve a place this way (for future upgrades).
3. Construction can be done in CERN workshop.
4. Chamber, support and gas injection system are priority, the rest can be added later.