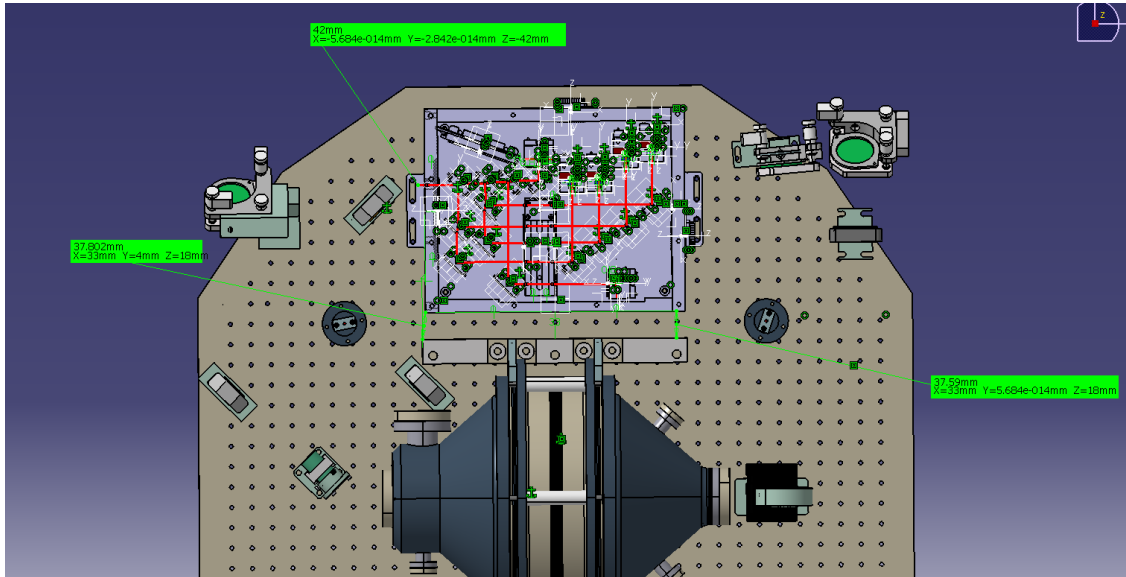


- 1/ Finish the Pstab boxes
- 2/ Decision to re-use the old V+ table and re-arrange or improve the set-up if necessary
- 3/ Continue the investigation on fiber amplifiers
- Conclusion

- Differently from the V+ power stab where the photodiode and the electronic were all staying inside an air-tight box
- Due to the higher specs required on the Pstab ($1.2 \times 10^{-9}/\sqrt{\text{Hz}}$ for 125W), there is a need of 4 photodiodes and some optics to split the beam (2.8×10^{-9} for 25W)
- Designed 2 boxes: 1 called « photodiodes box » sitting on the SIB1 and mounted with vacuum compatible elements
- 1 box called « electronic box » to preamplify the signals from photodiodes, sitting under vacuum not too far from the 1st box for bandwidth purposes. This box is an air-tight box. It will be clamped on the cage of filter 7. (see precedent VW)

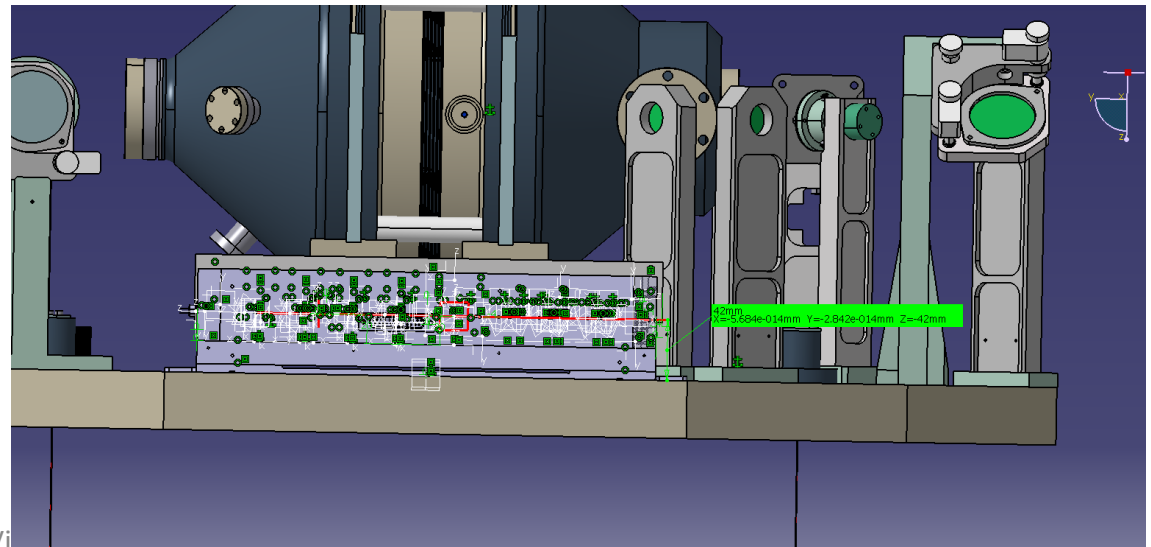
1/ Position of ph^{des} box on SIB1

PSL



Clamped on the bottom face of SIB1

Height of the beam in the ph^{des} box



1/ Photodiodes box

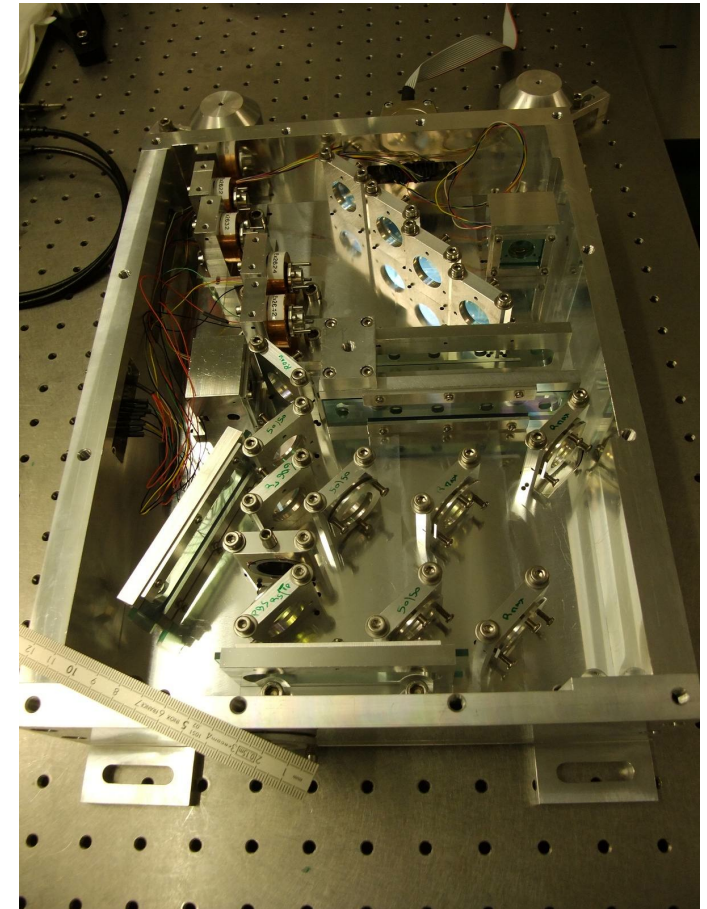
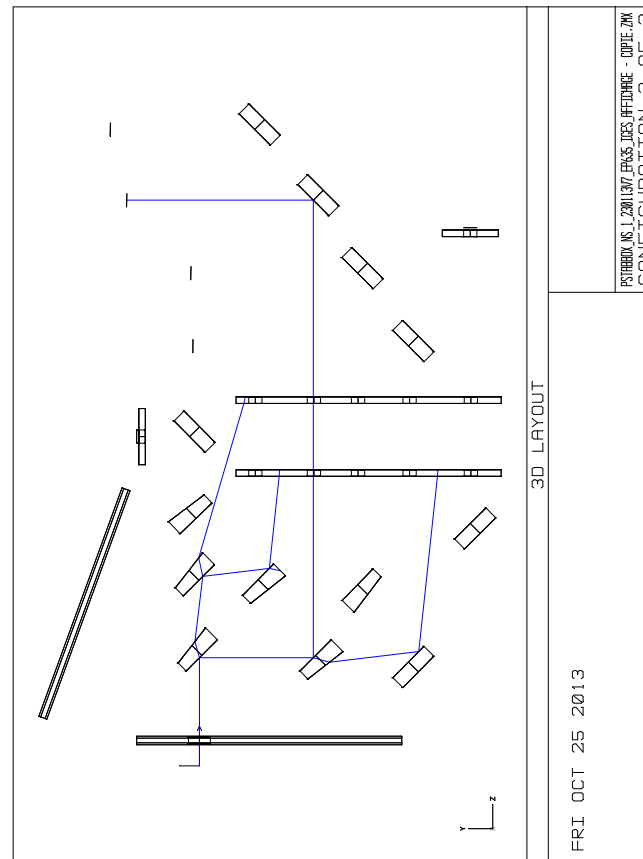
PSL

All the optics mounted

Soldering of the 6 photodiodes have to be done with vacuum compatible material

Isolation of cables outside the box has to be done with *vacuum compatible material*: in progress

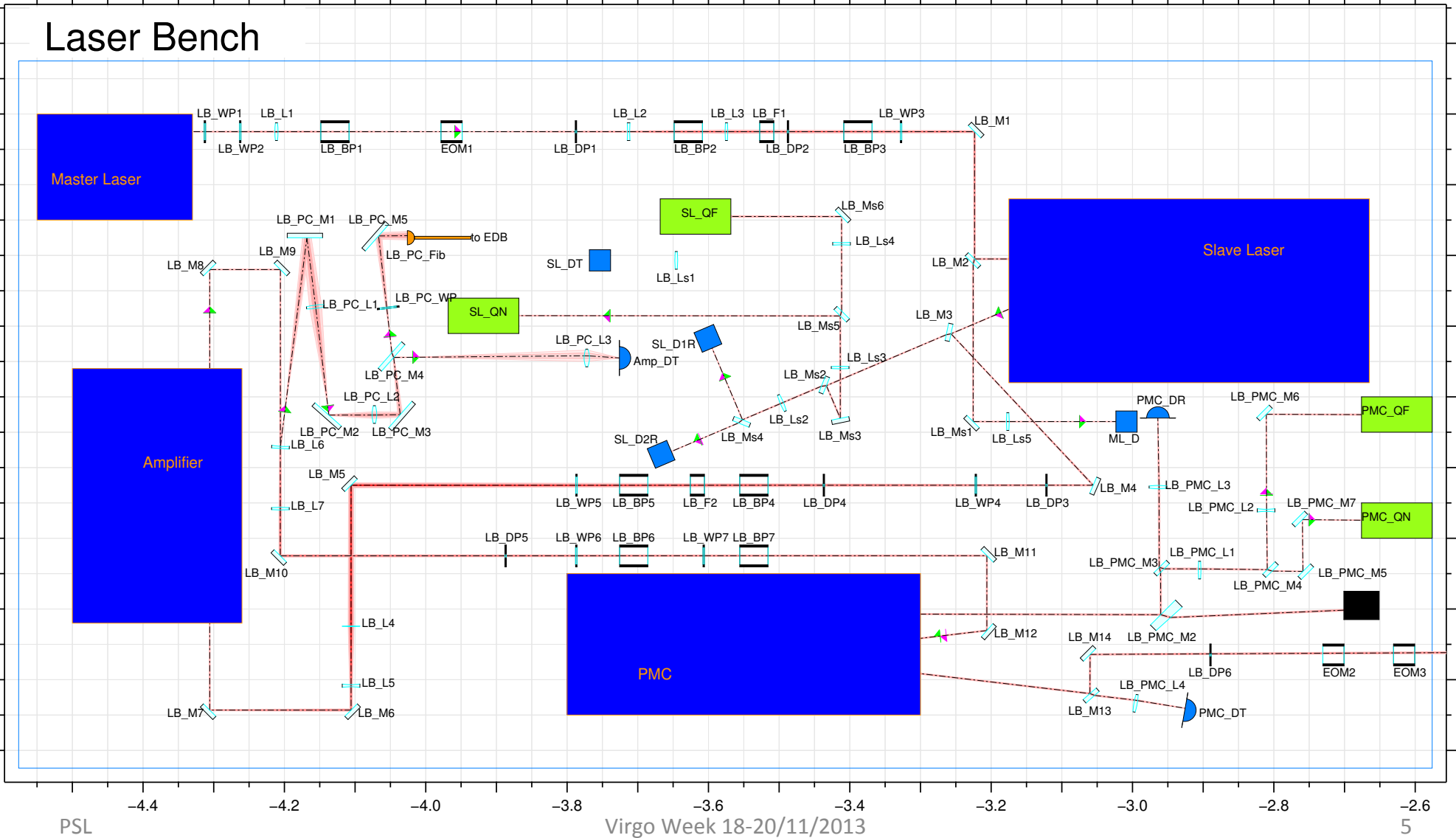
To be tested with the electronic box before delivering on site: planned for Dec 15th



2/ Layout of V+ laser bench

PSL

Laser Bench

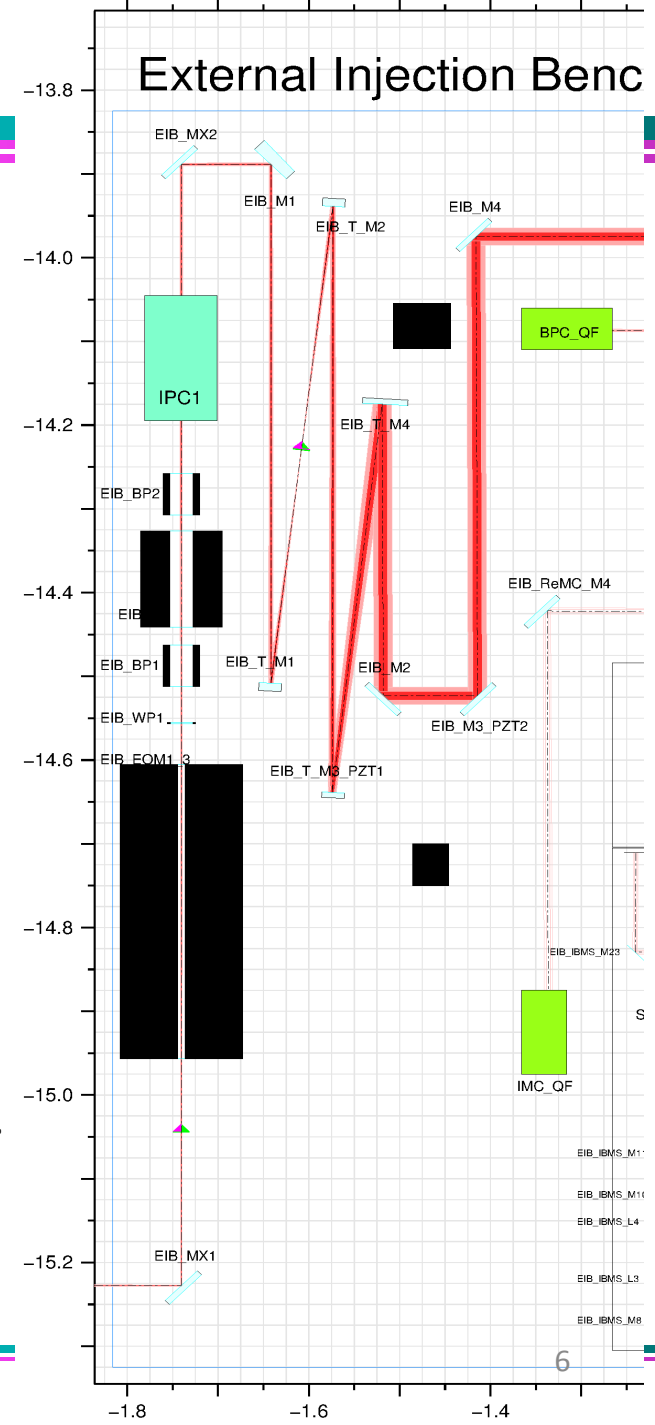


2/ Laser bench

Interface: beam to be delivered to INJ

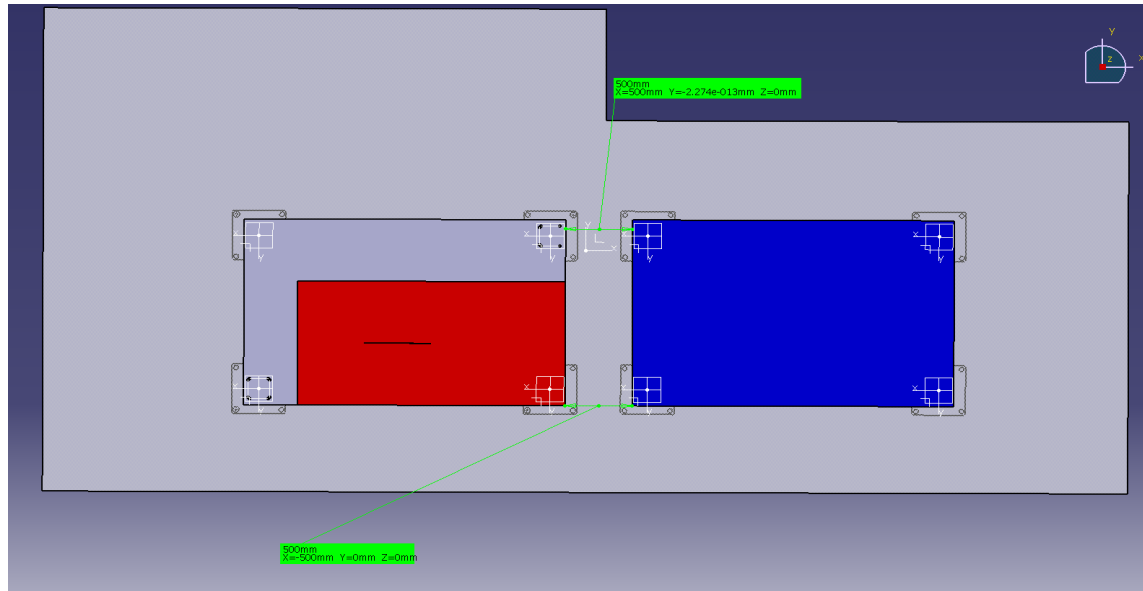
- Required INJ beams on EIB: (12/11/13)
- Beam on EIB_MX1:
 - Waist size: 500 μ m
 - Waist pos: 0.184m after MX1
- Position of EIB_MX1:
 - X: 0.08m, Y: 0.10m

Beam waist to be delivered within 10% range at the right position.



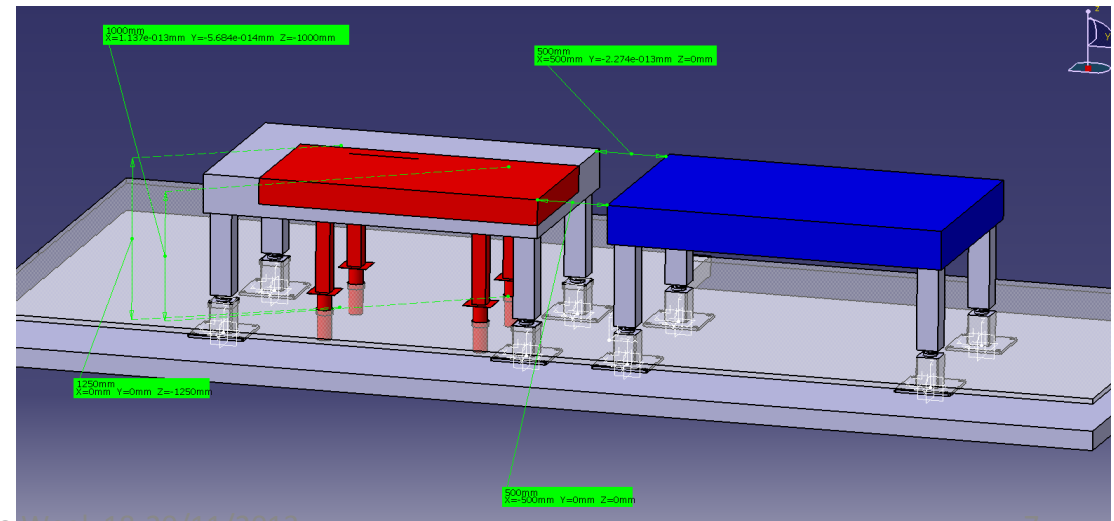
2/ Positioning of tables in new clean area

PSL



Old table LB = Red ,
New table = Grey,
EIB table = Blue

- Postpone the installation of the new laser table
- Positioning the old V+ table relative to the EIB
- Keep the same distance between the 2 tables ie 500mm



PSL

Virgo week 18-20/11/2013

7

2/ Re-use the Virgo + laser bench

PSL

- Due to the absence of **our expert (Frederic) on V+ laser**
- We train 2 new people with the slave spare laser in the lab with the spare electronics (decision taken Oct 8th)
- Some thermal problems (seen before) with the pre-mode cleaner that we would like to investigate as soon as the bench is in place.
- After feedbacks with people on site, the works will start on the laser bench in the *beginning of December* on site

- Done by *another team* in the lab also interested by fiber amplifiers (for ITER): contact with ALS (Bordeaux)
- Very promising measurements done with their 50W amplifier (quite cheap 35 k €): no extra RIN in LF and RF range, very clean beam ...*master needed at low power to inject this amplifier.*
- Frequency noise to be tested once they have a module in the lab (next Dec?)
- Keep in touch with the progress of our AEI colleagues about their fiber prototypes: *have time to decide what to choose.*

Conclusion

PSL

- We have @ 4 months to re-use this V+ laser: we should be in time and if possible we would simplify the set-up as there were many redundancies on the bench.
- We would participate fully to the commissioning (hope to get a decision for a new permanent position next year)