Positronium intensity measurement preparation (GBAR)
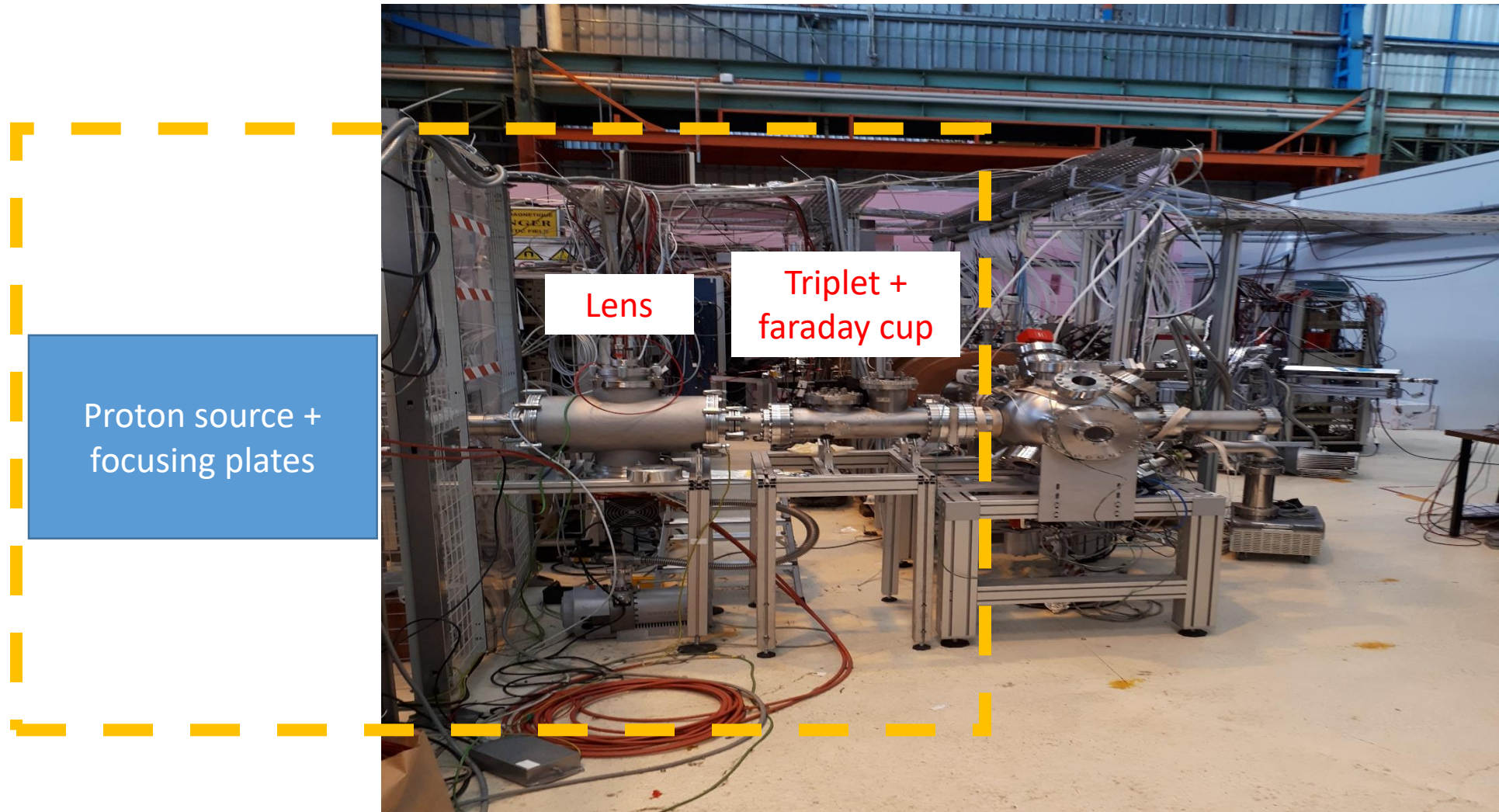
SNU

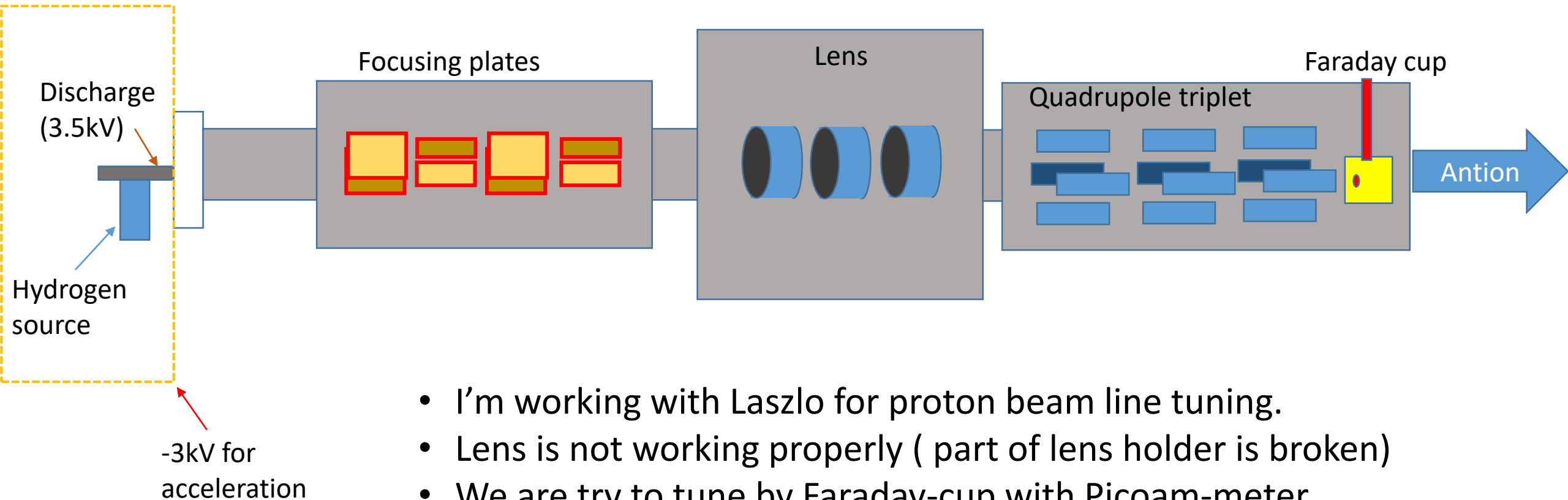Bongho Kim

PWO detector status

- BG trap trigger software has problem and Dirk and Amelia have tried to solve problem but it requires some time.
- In the mean time, light guide will be attached btw PMT and PWO crystal.
- Also metal shield will be installed surrounding PMT.

→Better result is expected.

Proton beam line preparation

Proton source + focusing plates

Lens

Triplet + faraday cup

Proton beam line preparation

Focusing plates

Lens

Quadrupole triplet

Faraday cup

Discharge (3.5kV)

Hydrogen source

-3kV for acceleration

Antion

- I'm working with Laszlo for proton beam line tuning.
- Lens is not working properly (part of lens holder is broken)
- We are try to tune by Faraday-cup with Picoam-meter.
- It's not easy and we are thinking additional method (phosphor screen, etc)

TOF simulation check

- To run TOF simulation in lxplus, extra-step is required.

- It's uploaded in https://gitlab.cern.ch/ (Gbar /gbar-simu)

- Follow the HOWTODO file before make

Checked library : Geant4.10.2.p03, cry_v1.7, ROOT 6.06.08

- One question ← Where I can find about pion angle symmetry code?

To do list

- Proton beam tuning (Lens test(1), focusing plate(2), triplet(3))
- Positron beam tuning (buncher + lens).
- Positronium simulation and expect beam data by PWO detector.
- TOF simulation check?