Simulation and Analysis

Mar 2 2021

Today

- Intro
  - schedule of next meetings (see below)
  - update on the fwd photon spectrometer

- Fwd spectrometer:
  - update on the photon-beam profiler by Marco, Umberto and Sergej
  - energy-dependent measurement of the g-beam divergence by Gianluca

- Alternative design for the photon+laser interaction area by Felipe

- First look at non-EM background in the tracker with ~0.2 BXs by Arka

Schedule for the next meetings

- **Tuesday, Mar 9: towards a decision on the vacuum chamber of the IP detectors: yes/no/partially/how?**
  Note that this is linked to the question of how we implement the hybrid setup, but we want to first focus on the question whether or not it is possible for each system to work in vacuum and how services are routed out.
  People from all relevant subsystems: please think if it is possible or completely not and come up with a recommendation for this meeting (ideally 1-2 slides per system).

- **Tuesday, Mar 16: first general engineering review of all elements along the experiment**
  Benny & Oz have confirmed this is possible. It'd be great if we have someone from other institutions (define mandate). This will be an iterative process that won't end just with these 2 meetings (+we will get more feedback from the PRC).
  Sasha and Louis - it'd require some preparation of coherent material for this meeting, mostly detailed cad models. If we can send something to the engineers before that it'd be even better.

- **Tuesday Mar 23: second general engineering review of all elements along the experiment**
  TBC - will fill up the details later

- **Tuesday, Mar 30: collective definition of the EDM and GEANT4 output format**
  will fill up the details later (note: Passover in IL is from Mar 27 to Apr 3)

- **Tuesday, Apr 6: ICS technical discussion regarding the physics simulation and the technical implementation.**
  will fill up the details later (note: Easter holidays in EU are Good Friday (Apr 2) to Easter Monday (Apr 5))

Fwd spectrometer

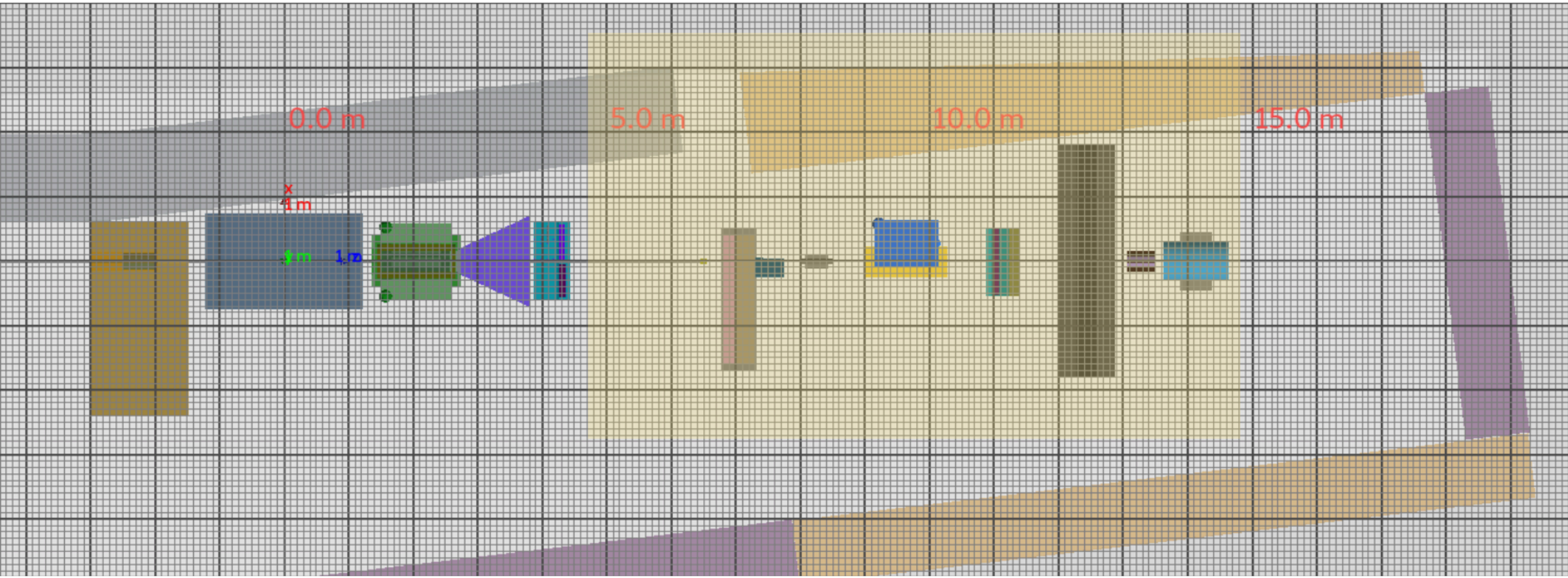
- Extend the beampipe all the way to the end of the experiment?

- From many studies by Maryna we see that
  - Target changed to 10 μm of Tungsten (also checked 200 μm of Kapton)
  - much less background
  - signal is coming ~only from the converter (and not from the air)

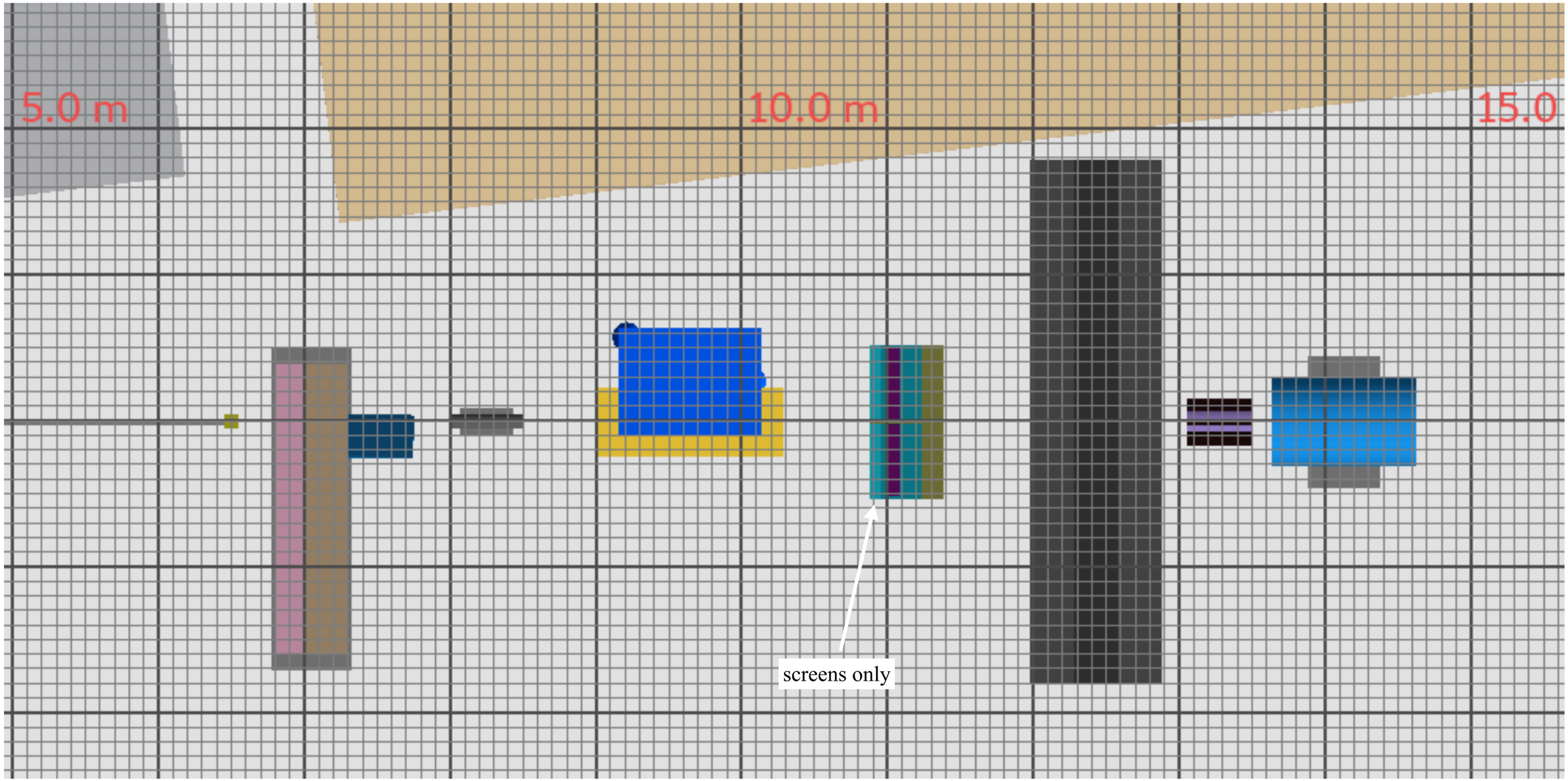
- This would be better for the profiler (see later talk today)
- This would be better for safety people
- No need to have heavy collimators

- Disadvantages (maybe there are more):
  - more complicated technically (notably the thin Tungsten target)
  - more expensive
  - if and how to do the collimation of the signal pairs after the conversion?

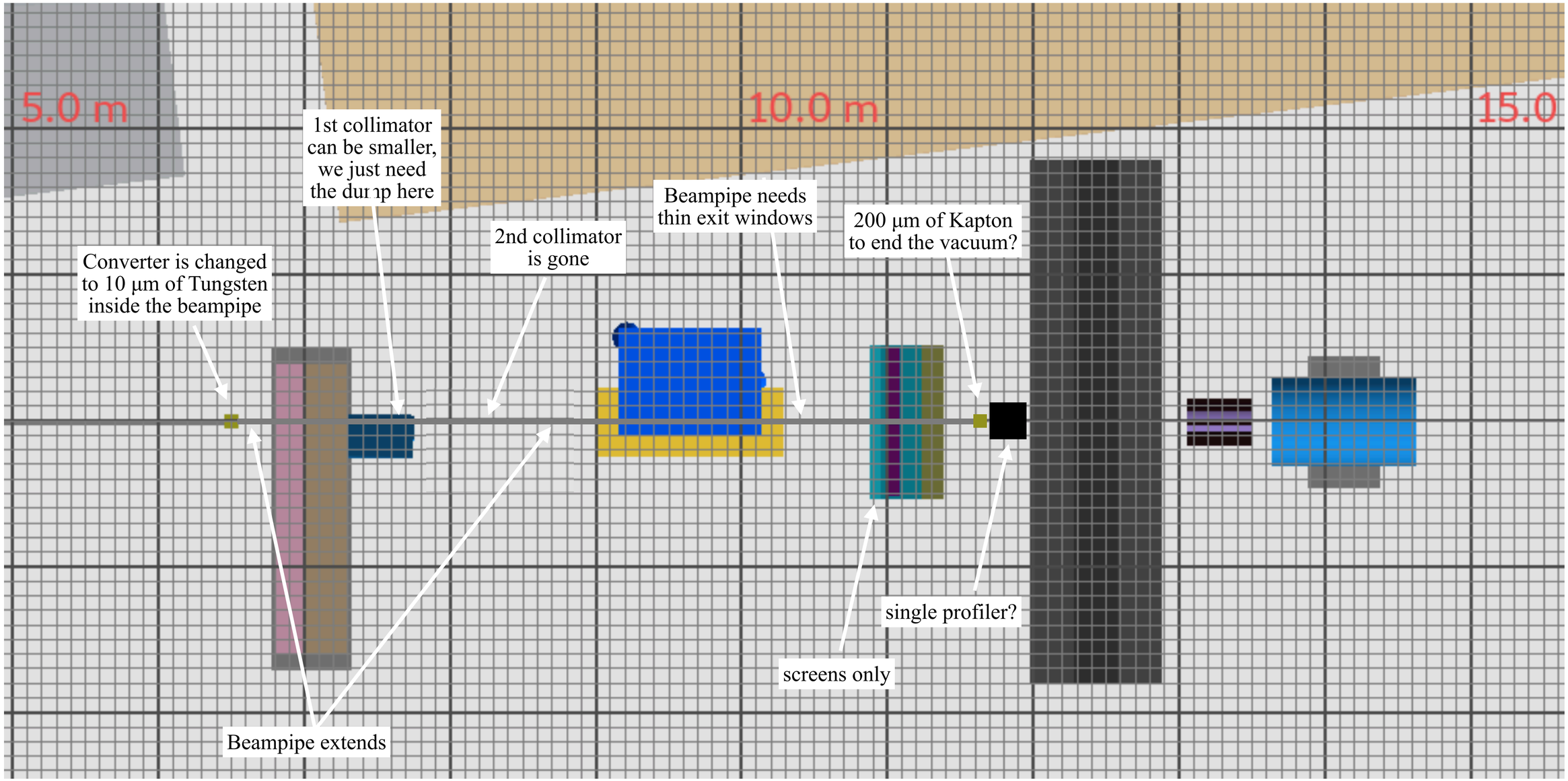
Fwd spectrometer: now



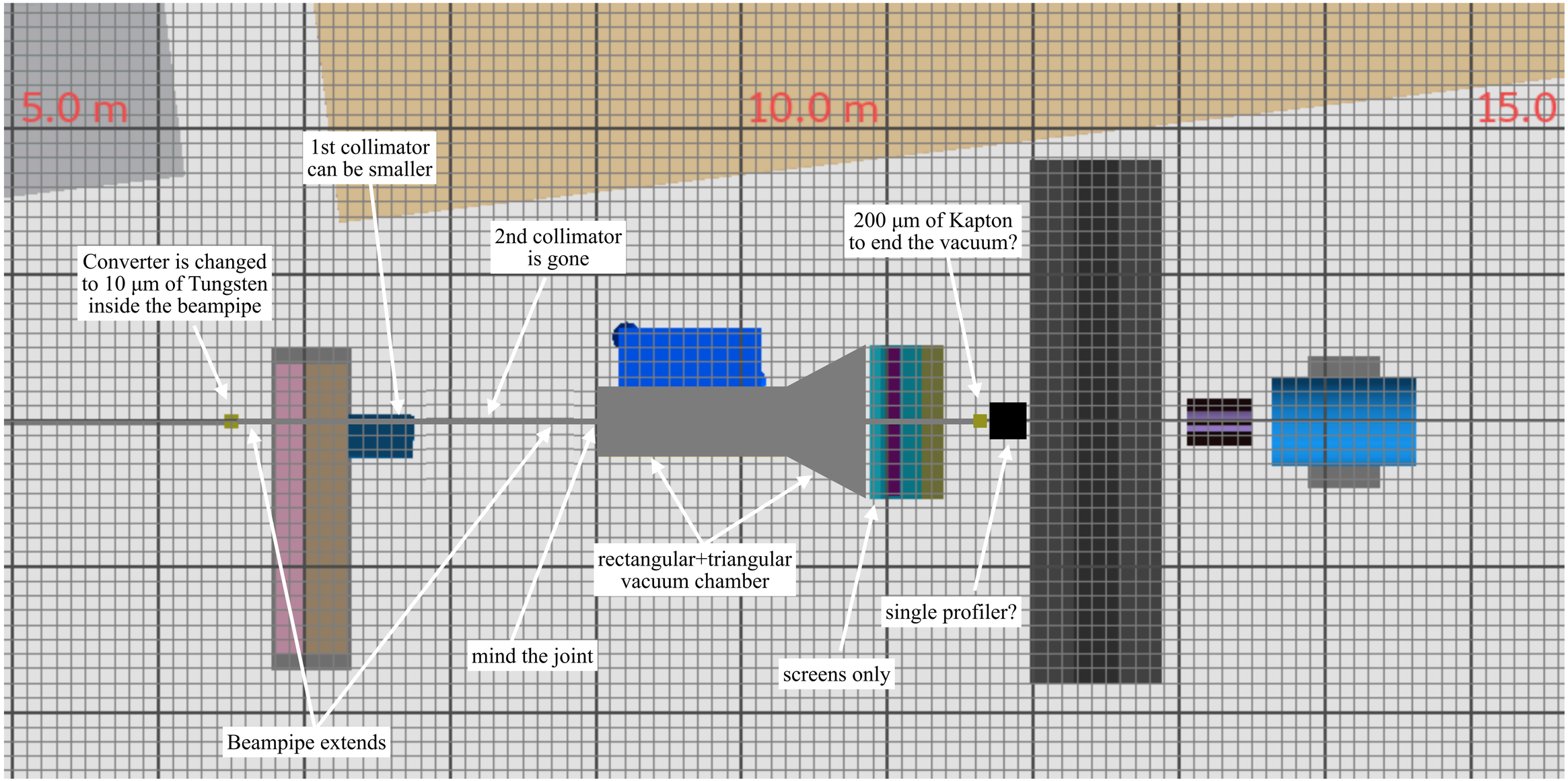
Fwd spectrometer: now



Fwd spectrometer: new #1



Fwd spectrometer: new #2



Fwd spectrometer: new #3