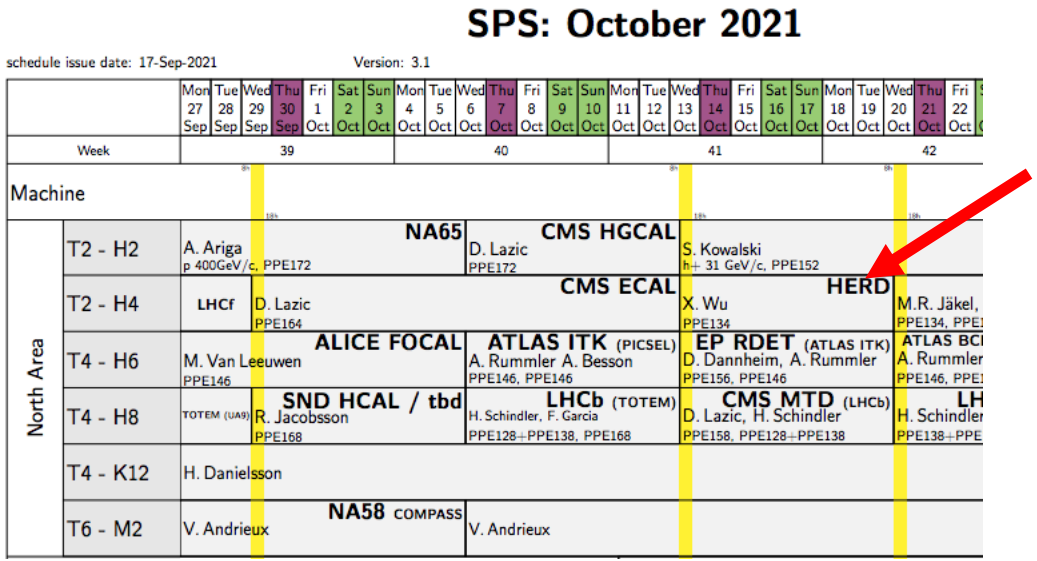
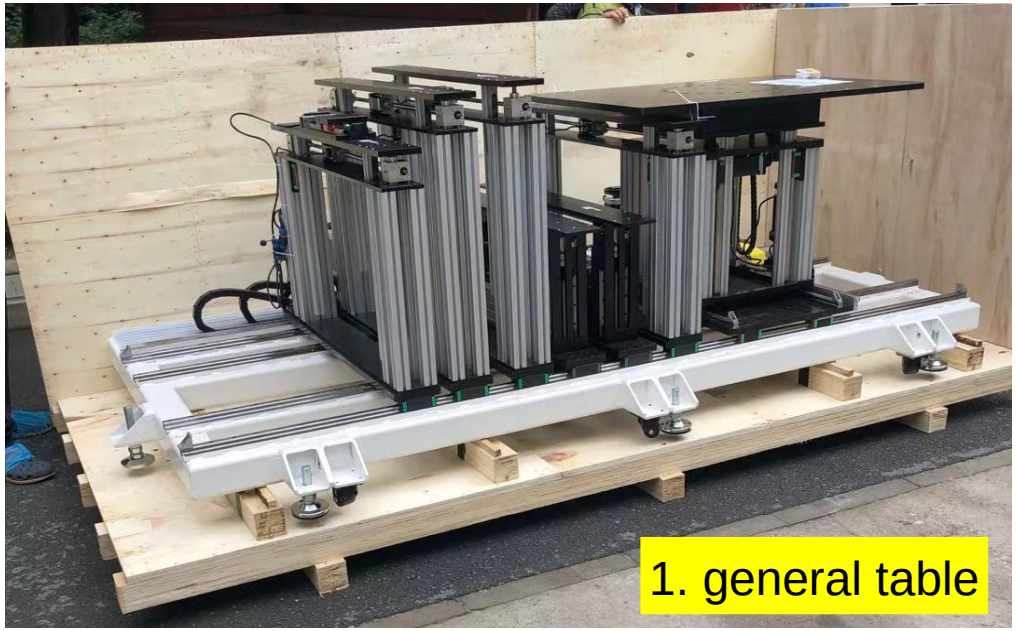
HERD prototype beam test preparation in week 41 at PPE 134



Package delivered from China

#	(Xm*Ym*Zm , weight kg)
1	3.2*1.6*1.4, 1500
2	0.6*0.5*0.8, 100
3	1.6*1.6*0.9, 1000
4	1.4*1.4*0.8, 500



1. general table

2. power and control of table

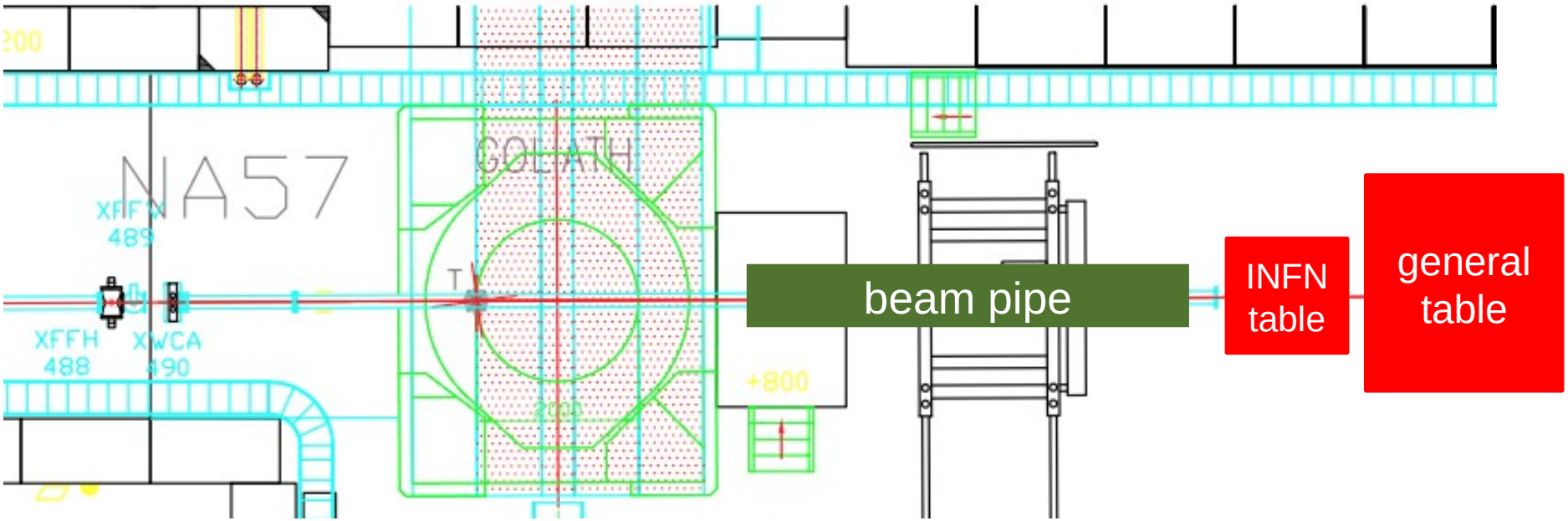
3. calorimeter and trigger electronics

4. TRD, cables, computers and tools

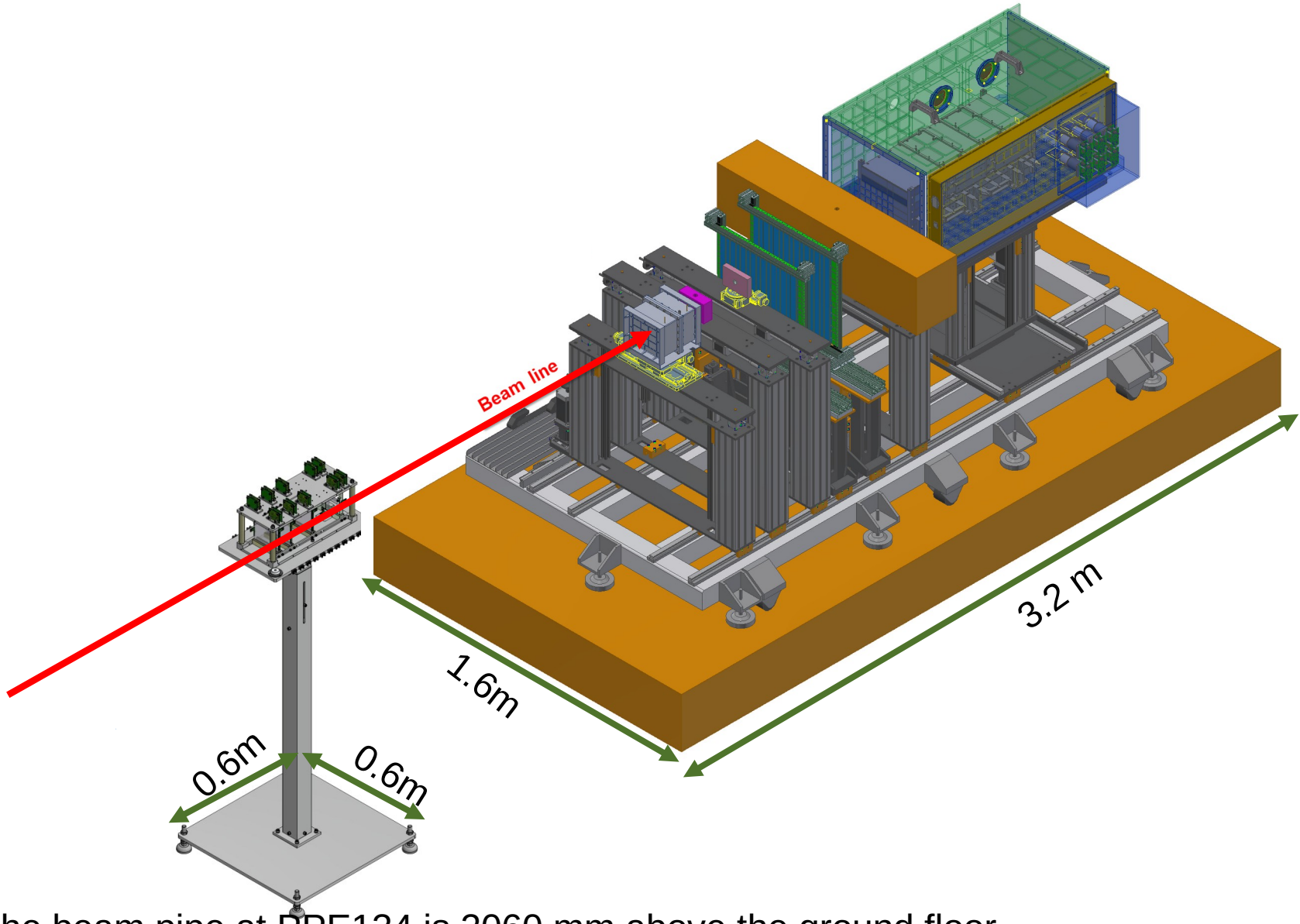
Space requirements

- temporary storage space for those 4 boxes
  - expected internal transportation directly to EHN1(middle entrance Jura side) from Meyrin goods reception
  - both of the wooden and aluminum boxes will be re-used, when shipping back the materials to China
  - from Oct.1 to the end of test beam activities (~ 4 weeks)
- assembly working space in EHN1
  - 220V power
  - network port equipped for joint test from China remotely
  - 3.5m * 2m, for the general table
    - fork lift work will be necessary for the unloading of the table from the wooden box to the ground
  - 2m * 2m, for the calorimeter assembly and joint test
    - fenced area 887/R-C41 with concrete blocks as supporting were used several times in the past
    - crane work will be necessary for the transportation from the Al. box to the supporting concrete blocks
  - a test room with key access, with peak occupancy ~6 people by considering COVID19 restrictions.
  - from Oct.5 to the start of beam time (~ 1 week)

Proposed geometry layout at PPE134



- infrastructure needs
  - beam pile down to the detector mounting area
  - ‘elevated floor’ composed of concrete blocks, if necessary
  - 220V power, a rack and the patch panel near the table
  - crane for the installation and de-installation

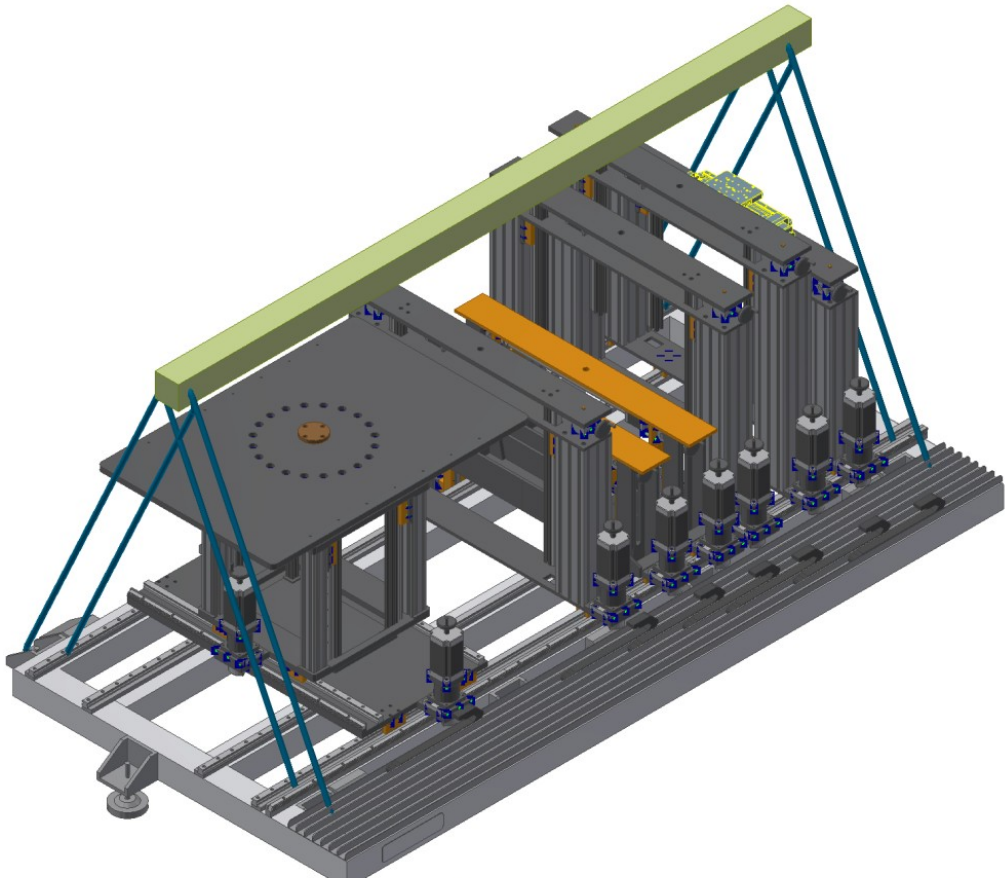


The beam pipe at PPE134 is 2060 mm above the ground floor,
We would like to confirm, the ‘elevated floor’ composed of concrete blocks which 800mm above the ground floor is there or not,
where the area as proposed for the layout

Installation on D-day

- general table and calorimeter preferred to be transferred to beam line, independently by the crane
- there are rings for crane work mounted on the four corners of the calorimeter
- four slings of rope will be needed for the crane work of the table transportation.

Installation on D-day

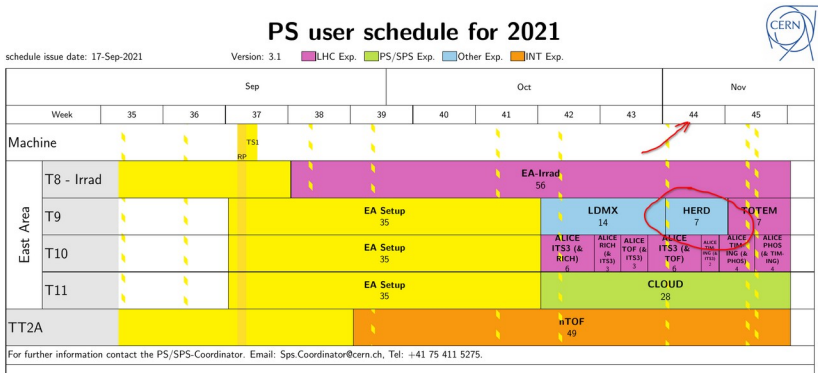


Installation on D-day

- other sub-detectors and instrumentation: transport by crane using cages
- the exact amount of transports/cages is still TBD
- a (seemingly) reasonable estimate is 4-5

Dismounting on 20th Oct.

- requirements about crane and cages are similar to those for mounting
- a portion of the equipment (including RP items) needs to be stored at CERN for being reused at PS in week 44
- exact amount TBD
- storage room needed



Beam requirement

- particle type and momentum
  1. muons
     - > 50 GeV/c,
     - the test starts by muons with sufficient intensity for alignment and equalization study
  2. electrons
     - 20 – 200 GeV/c
     - then moved to electrons with several typical points for linearity study
  3. protons
     - primary protons for the particle ID study, if possible.
     - or the highest available momentum
     - the proton runs could switch with the electron runs
- beam intensity
  - 2k particles/spill
- beam spot
  - ~ 1cm * 1cm, as parallel and small as possible

Other issues

- GLIMOS issue
  - EP-DSO Olga BELTRAMELLO is as GLIMOS of ‘HERD group’
  - people physically involved in HERD beam test are register as RE1, RE29, LHCf members rather than 'HERD group', and there are independent GLIMOS who supervise their activities at CERN
  - any problem for the EDH document routing? for example the patrol rights training