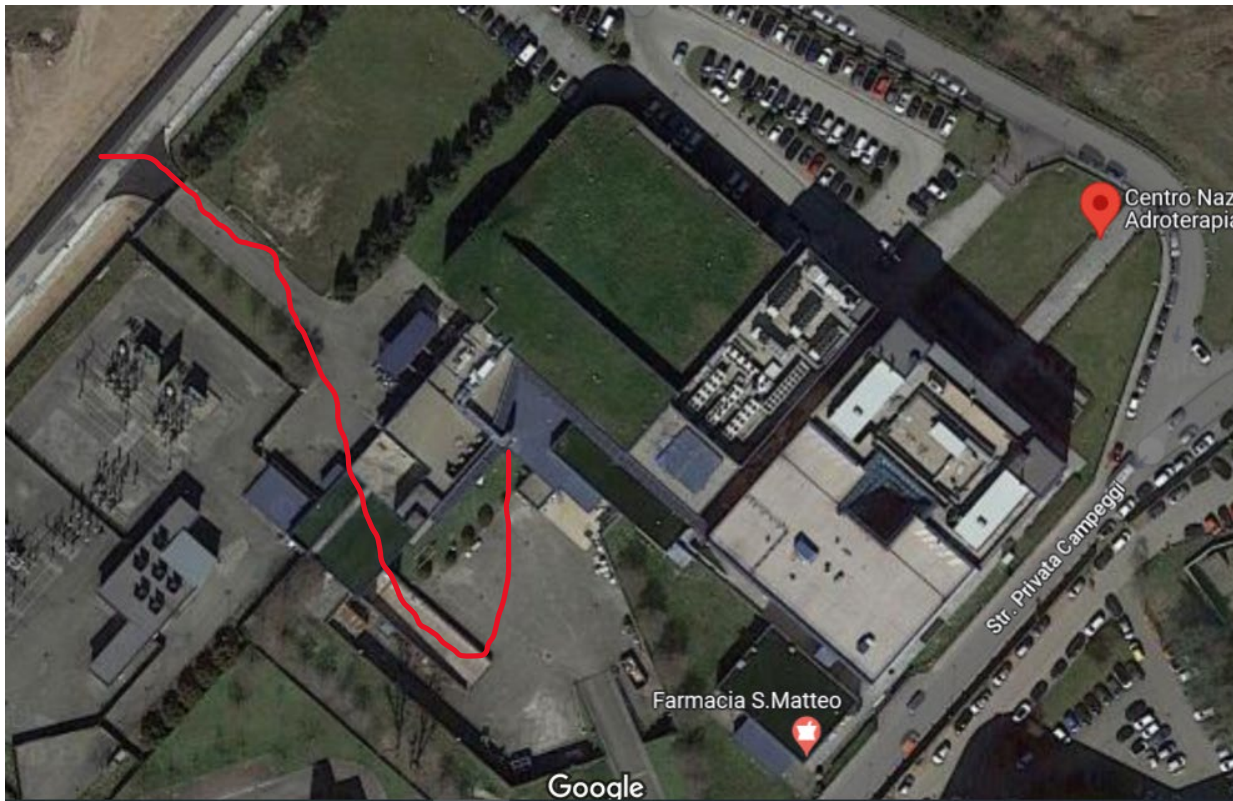


INSTALLATION AT CNAO INSPECTION

1. Route for experimental room

There would be two paths to reach the experimental room, but the internal one between elevators, ramps, corridors is very difficult. The other route, more reasonable, is to unload in the cargo area, currently a construction area.

It is not impossible to obtain permission, however, we must coordinate with the site management.



Once in this area, only one door (H 210 cm W 125 cm) divides us from the small hall of the experimental room.



Using a truck with the rear lift-up tailgate the material discharge would be further simplified and safe.

The experimental room and much of the path has a height of about 3.0 meters except some ceiling lights that protrude no more than 15 cm.

There is only one point where there is one air and one cables duct that brings the useful height to about **190 cm**.



2. Experimental room

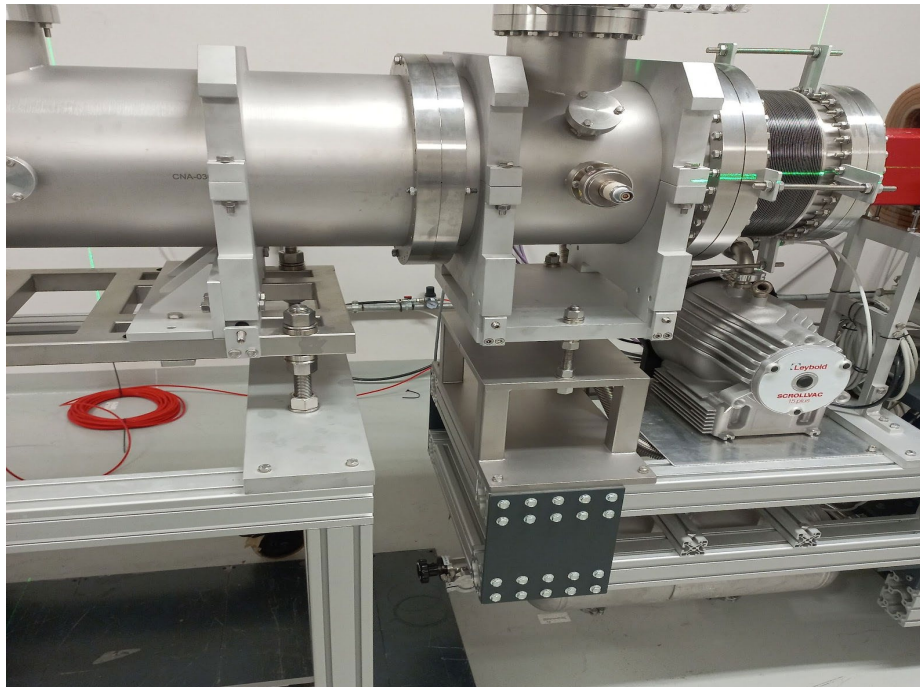
The experimental room has a height of about 3.0 meters except for some ceiling lights and laser pointers that protrude no more than 15 cm.

The distance from the exit of the beam to the isocentre is 65 cm, the height of the beam from the ground is 122 cm.

At the exit of the beam, at the bottom, there is a valve aligned with the exit window; this means that the legs of the table can not protrude forward.

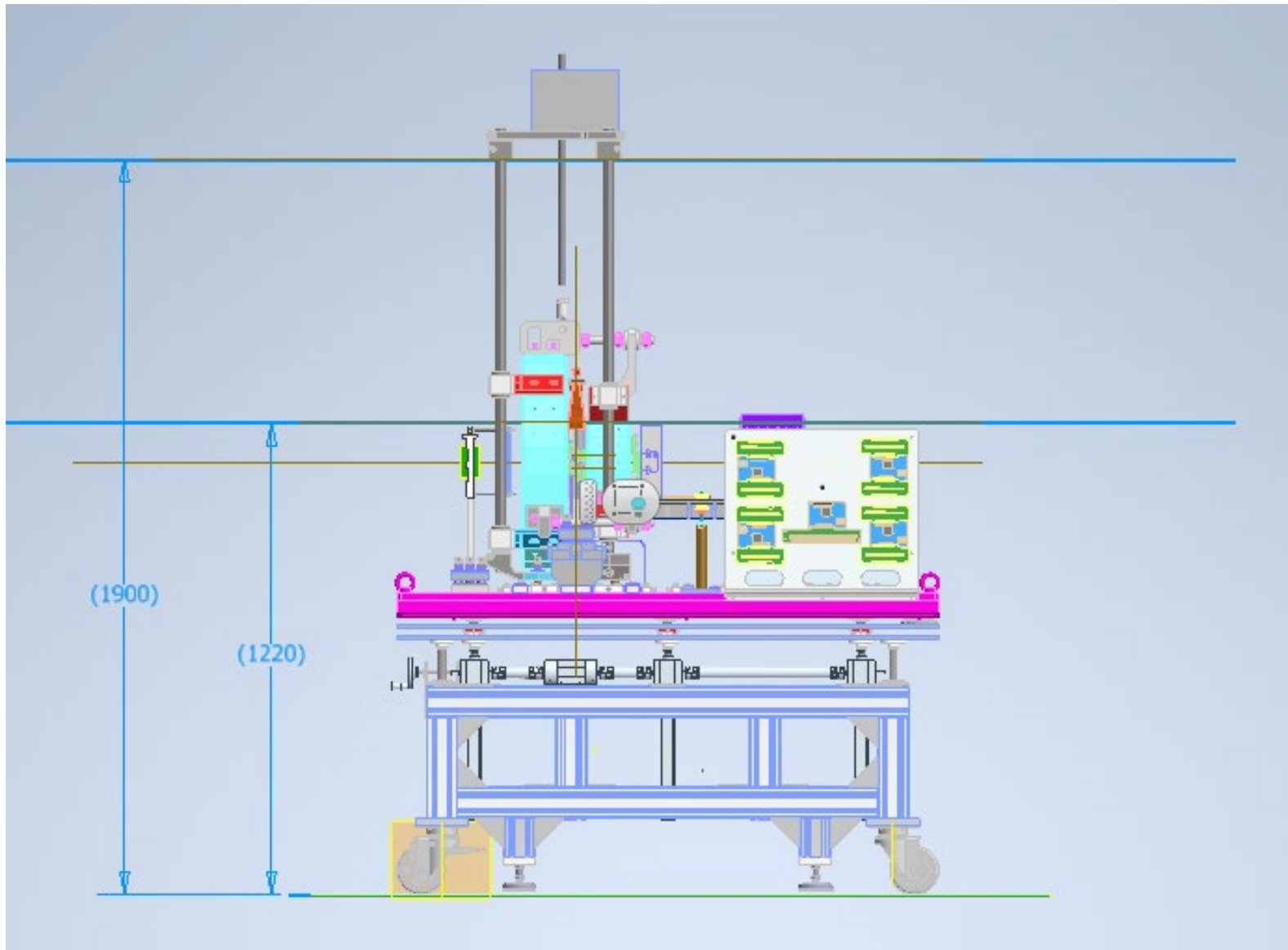
The steel plates on the ground rest on a concrete step and are strong enough to support the table feet.

The distance between the beam exit and the back wall is 410 cm, the back wall is however inclined by 22.5 then.



INTEGRATION At CNAO

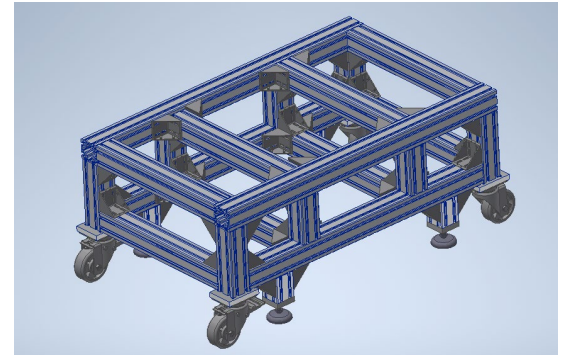
New Layout



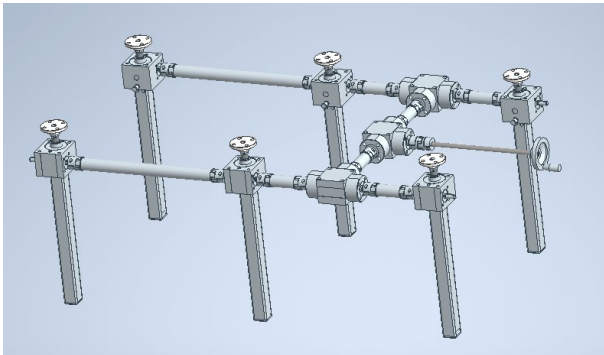
New Layout

The system consists of:

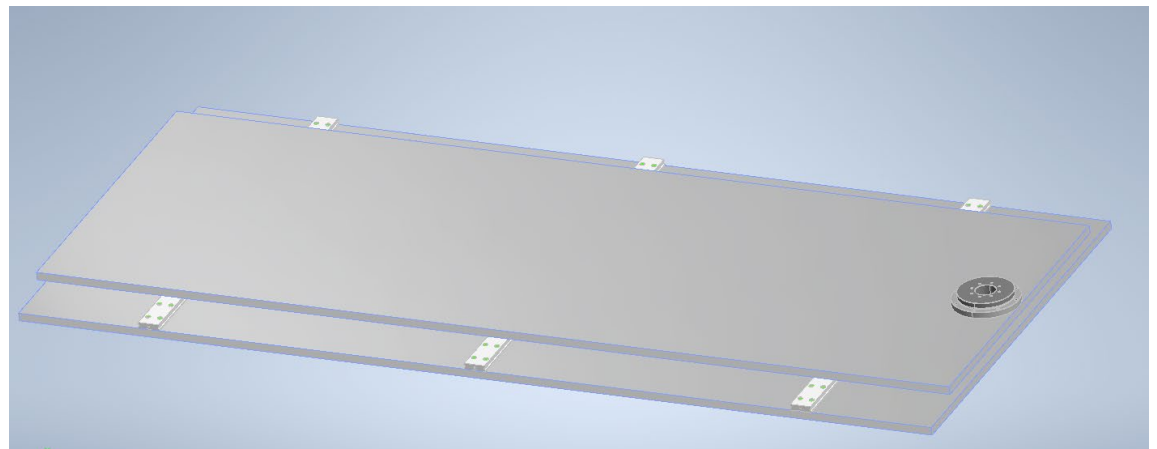
Transport and installation frame:



Manual lifting system



Manual alignment system



New Layout

The main problem lies in the fact that the fully assembled system exceeds the height limit of 190 cm. The excess part concerns the motorization of the magnet lifting system.

Since installing the magnet in situ is very complicated it is thought to create a simple litter with wheels for the transport of the whole detector.

The system is disconnected between the lifting system and the alignment ones.

The litter allows the grip and lifting through the pallet truck supplied from Perugia.



New Layout

Price offers have already been received.

For macro areas: (VAT included)

Profiles and accessories: ~ 3'300€

Lifting system: ~ 4'700€ (Bologna)

Alignment system and accessories: ~ 2'300€

The realization of aluminum plates, for the various interfaces, are foreseen to be made in the Pisa workshop but we will ask for help from other sections (Bologna? , Perugia?) to be sure to finish in time.

One question concerns the definition of the rotation point for the alignment of the system axis to the beam axis.

The other thing that remains to be discussed is the mechanics of the detector assembly system.