Update in view of data taking at CNAO in Dec. 2020

The Run Coordinators

Situation at CNAO concerning Experimental Room (XPR)

- The work for UTA (air and water treatment) realization has started.
- There are technical delays
- Considering the work for commissioning and Radioprotection checks, it is not yet definitely clear that we can enter exactly on Dec. 5th
- The exact starting date will be clarified probably in november

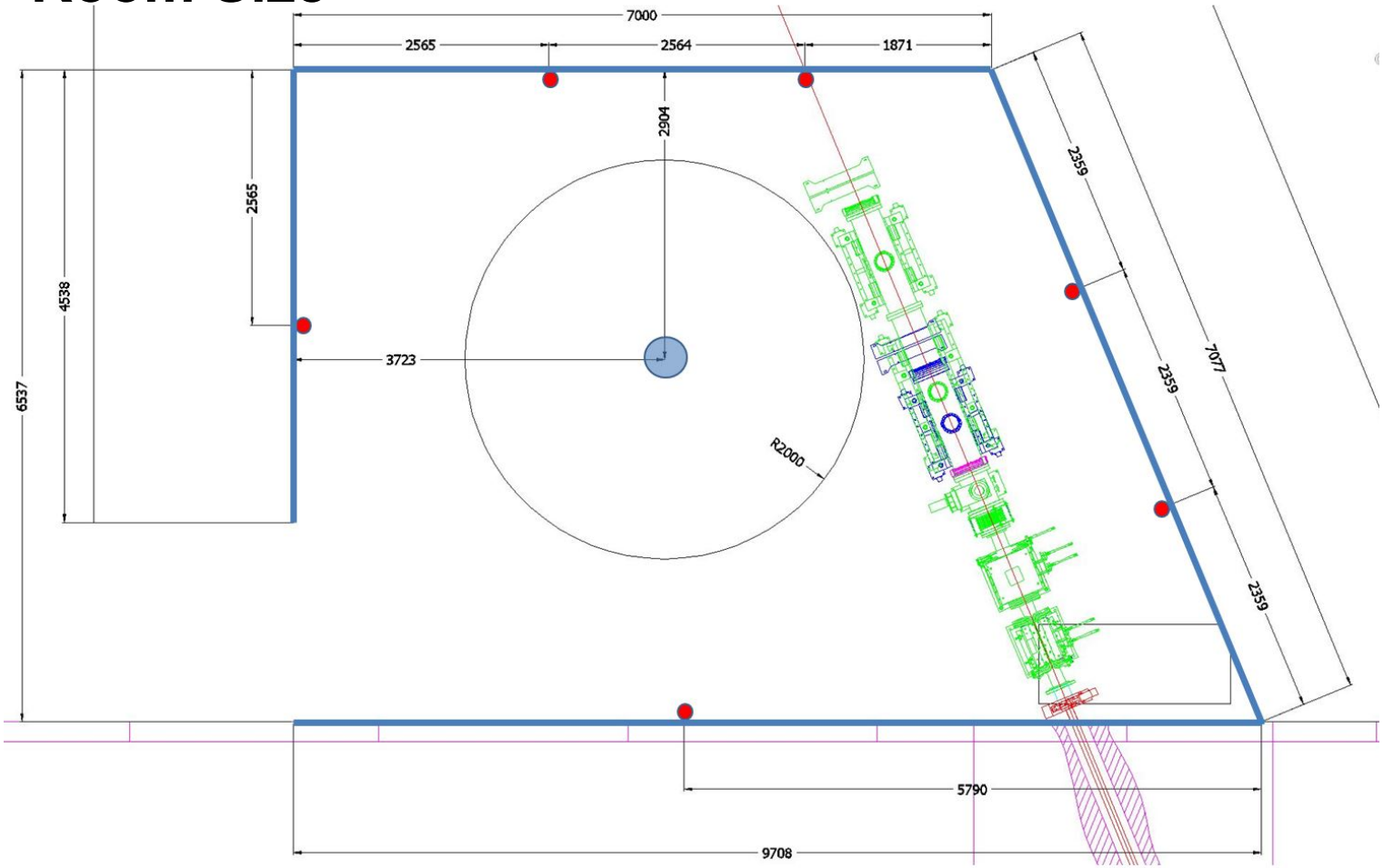
Available shifts

- Reserved for FOOT: nights in the weekend from **11 to 13** and from **18 to 20** December
- 1 night means: from ~10:00 p.m. to ~6:00 a.m.
- Other few hours in other nights can be available for preliminary tests. To be agreed on the spot

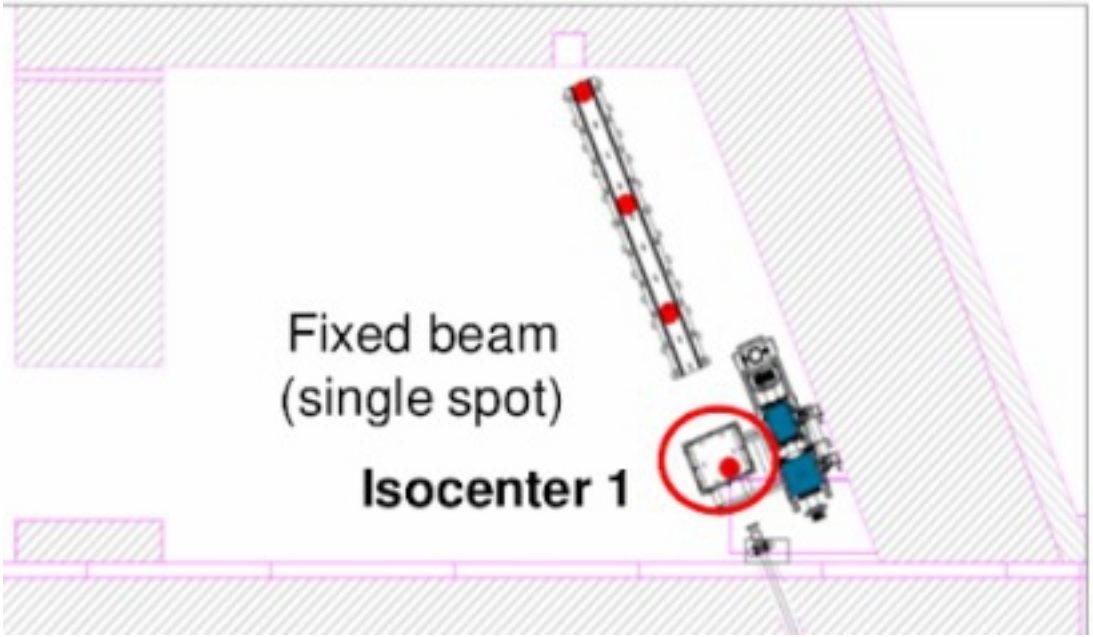
Given the fact that the number of available hours is not enormous, we need to agree on projectile/energy/no. of primaries and fix priorities, considering all the needs concerning tests, calibration, alignments etc.

Additional recent request to be accomodated: test of new kind of emulsions

Layout 1: Room Size



Layout 2: Isocententer Configuration



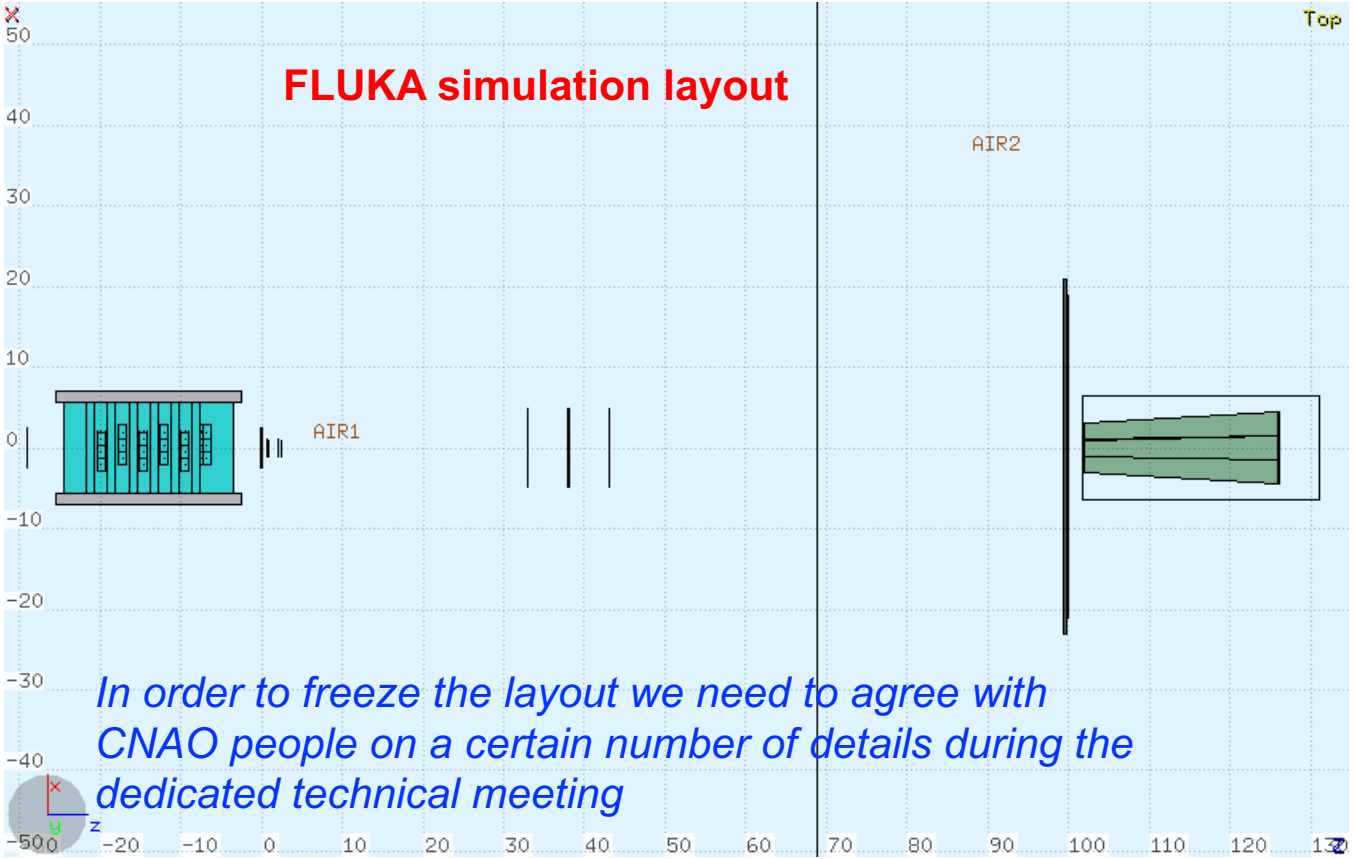
Layout 3: Our Detectors (Electronic Apparatus)

Start Counter (”Margarita”)
Beam Monitor
VTX
MSD: Best possible universe: 3 x-y layers in general acq.
Worst possible universe: 1 x-y layer in stand-alone acq.
TW
1 module of Calorimeter (3x3 crystals)

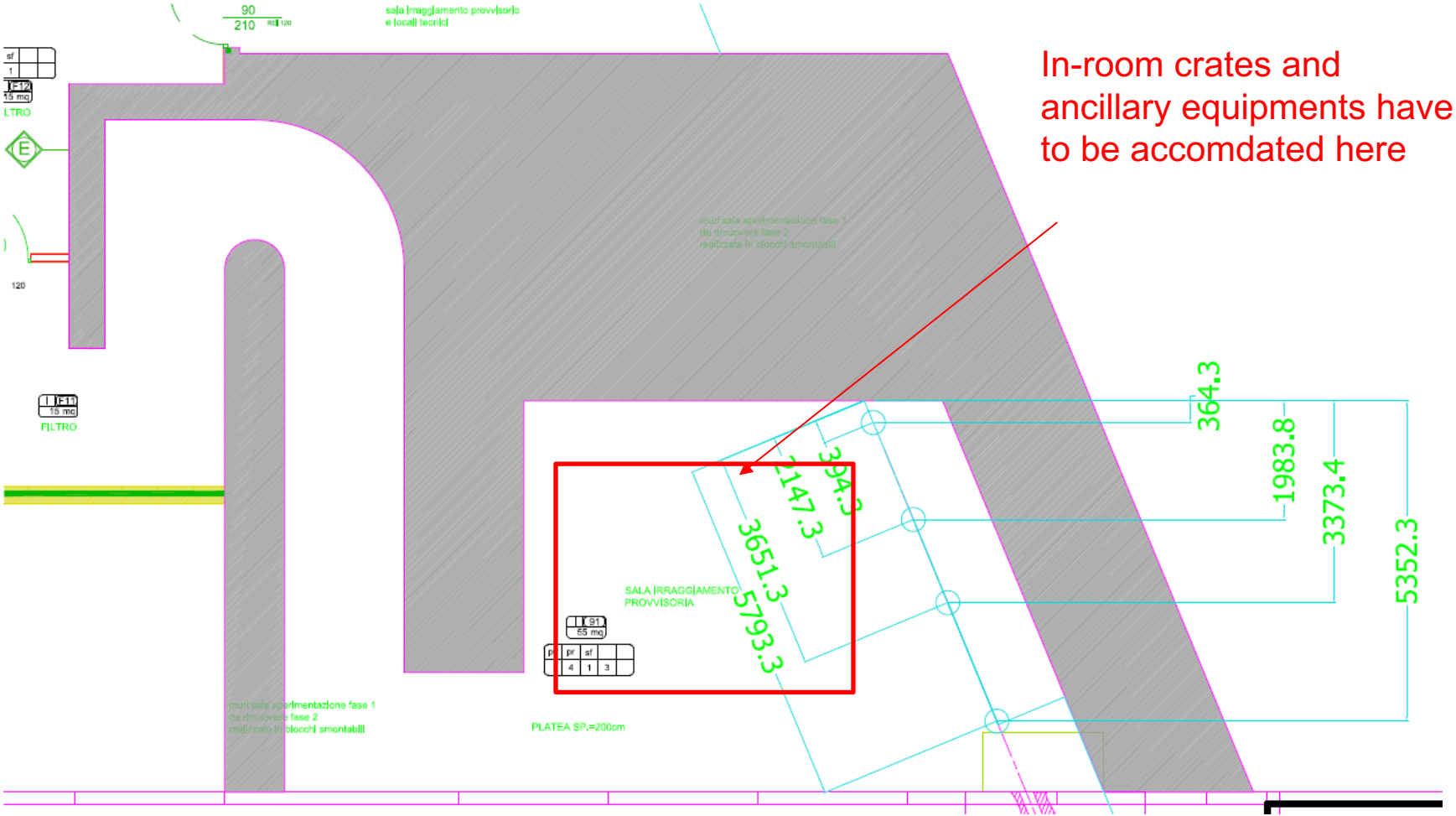
+ crates, power supplies, etc. etc.

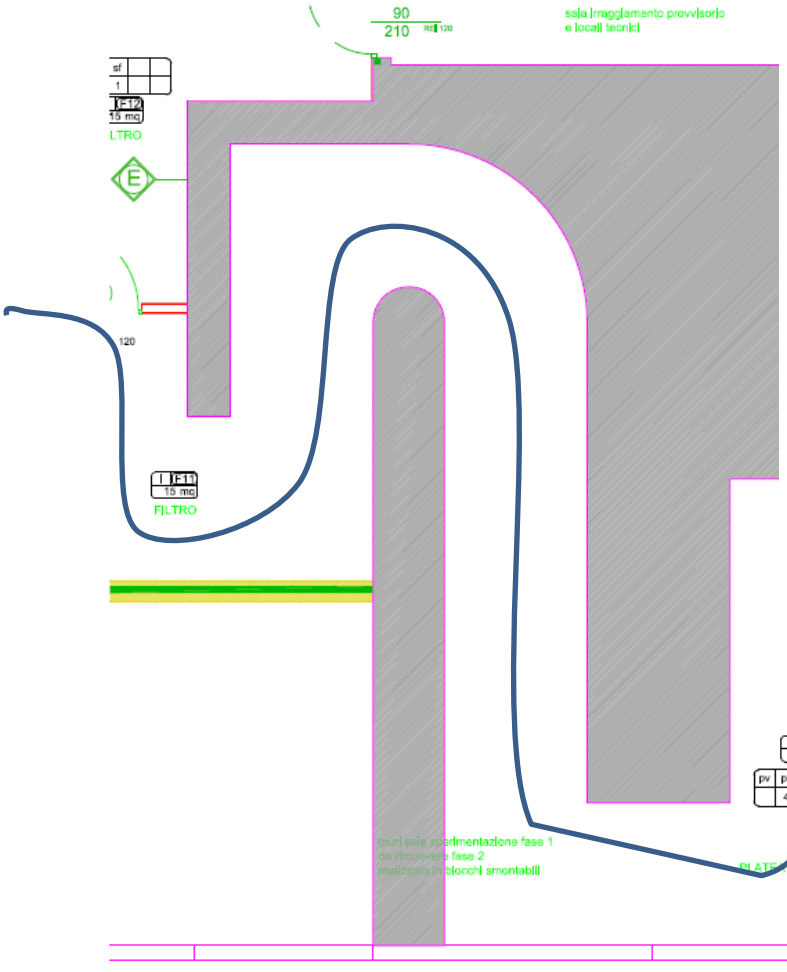
All these details will be discussed in a next technical meeting dedicated to the argument

Layout 3: Our Detectors (Electronic Apparatus)



A dedicated SHOE branch has been prepared (DT_CNAO) in Milano to develop the geometry:
At present the calorimeter description can be only hardwired on the general geometry
(thanks to L. Scavarda for providing solutions)

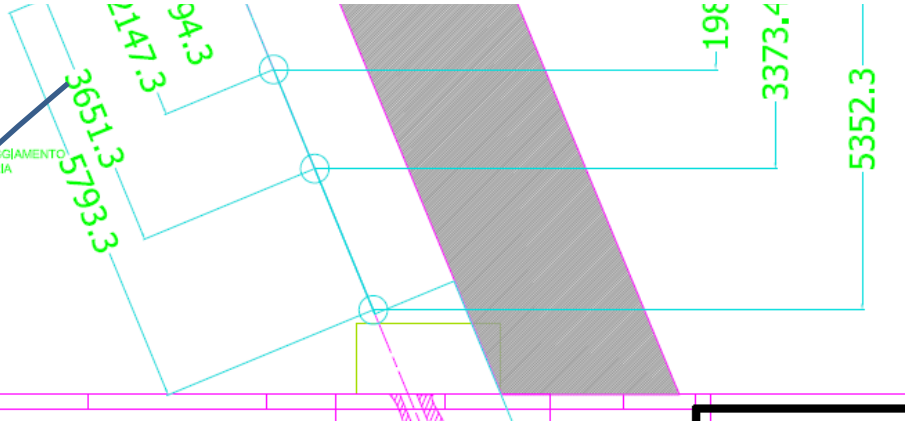

In-room crates and ancillary equipments have to be accomdated here
364.3
1983.8
3373.4
5352.3
394.3
2147.3
3651.3
5793.3
SALA IRRAGGIAMENTO PROVVISORIA
PLATEA SP.=200cm
FILTRO
sala Irraggiamento provvisorio e locali tecnici



New patch-panel for connections between XPR and local control room:

4 BNC connections
4 Ethernet connections
4 HV connections
4 optical fiber connections

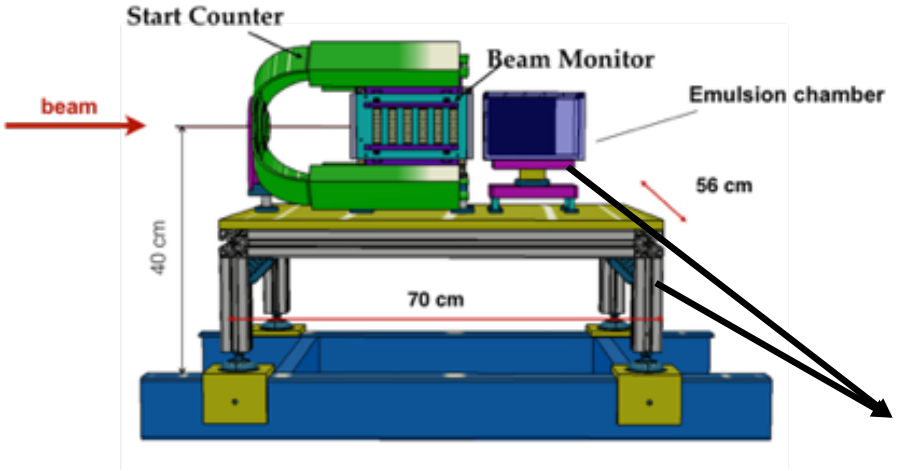
If other cables are needed we can stretch something on the floor (passing under the door). To stay on the safe side, considering the maze length, 50 m are necessary



Layout 4: Our Detectors (Emulsions)

Fast test of new type of Emulsions (p and C lowest energy) to be operated at fixed beam

Start Counter (”Margherita”)
Beam Monitor

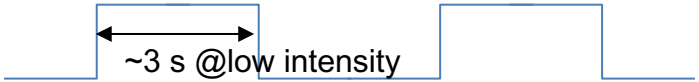


A few considerations before assigning priorities:

is this enough???

For any given energy and target:

Rate: ~ 2 kHz, duty cicle ~50% → in order to collect 10^7 primaries it takes slightly more than ~3 h



In case of hydrogenated target (C_2H_4) a significantly larger statistics is necessary to have a better control of statistical error in substraction, in order to get pC cross section.

1 Energy may take a whole night shift

To be done:

a) We are still missing some documentation to discuss with CNAO. Support mechanics is one of the missing items..

b) The documentation requests from CNAO have changed, due to the new italian law on radioprotection issues. On Friday 9th we have a first meeting (only INFN representatives for the moment) to understand better the question. What was written in the slides presented at the physics meeting of July 29 is no more valid

c) A meeting with Radioprotection Service of CNAO remain necessary for all participating people: a single date has to be fixed (~towards end of November?)

d) Rules about the number of people allowed to be present in XPR or Control Room at the same time have not yet been established

e) Possible meeting with Safety Officer at CNAO might be necessary (only for detector experts maybe)

News of different nature:

We have a Trigger coordinator: Luca Galli (Pi)

FOOT has just received OK from ESA to have Oxygen beam at GSI (27-28 June of 2021, *can be still slightly moved*) as a result of our application to the call CORA-IBER-2019