Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Roof integration

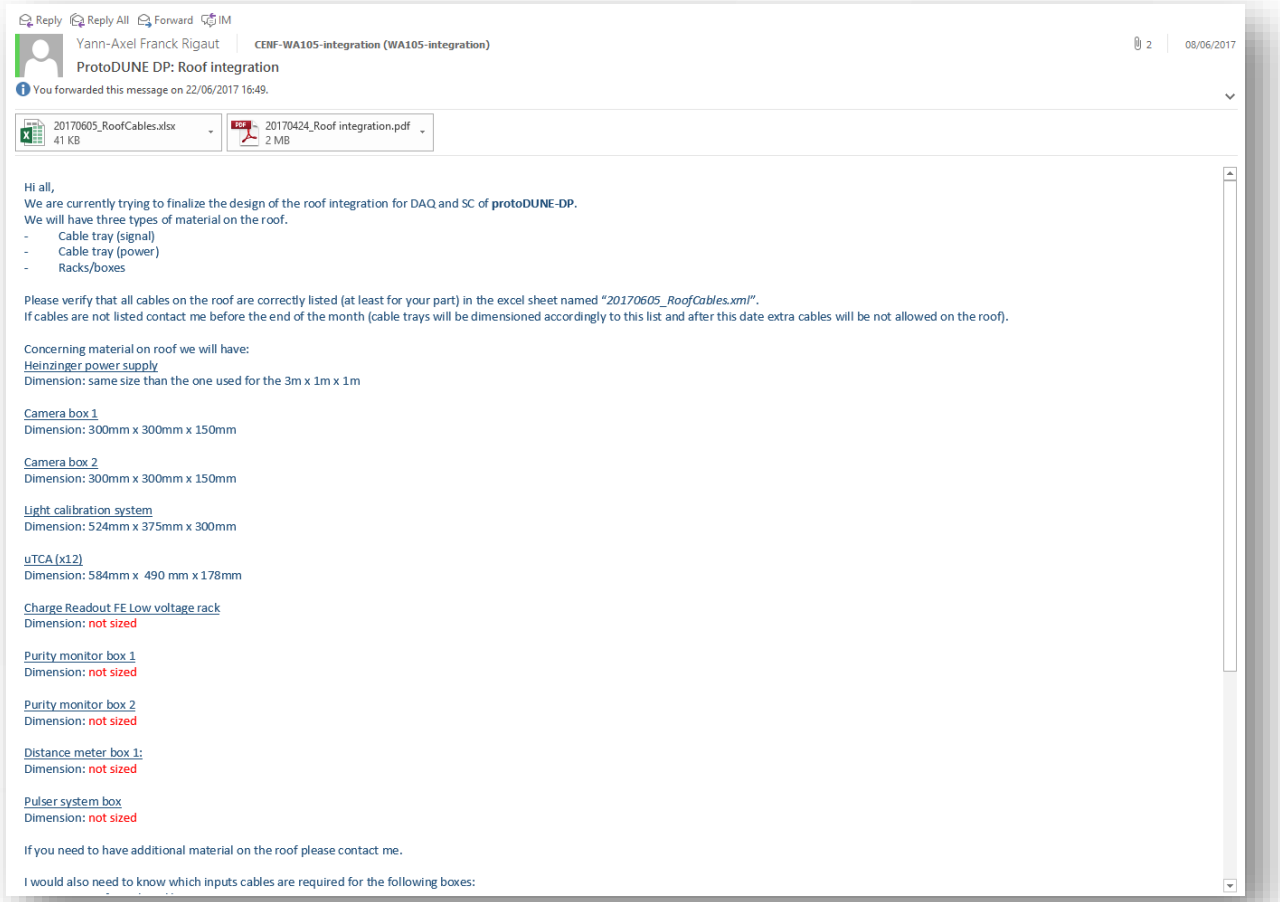
Y. RIGAUT on behalf of ETHZ group

ProtoDUNE-DP

Roof organisation

List of cables and list of boxes which are needed has been propagated by email in the beginning of the month to the **CENF-WA105-INTEGRATION** mailing list.

We still wait last systems not totally define in term of cabling and size to finish integration on roof/cryostat GND and start to define the campaign of cabling.



Reply Reply All Forward IM

Yann-Axel Franck Rigaut CENF-WA105-integration (WA105-integration) 2 08/06/2017

ProtoDUNE DP: Roof integration

You forwarded this message on 22/06/2017 16:49.

20170605_RoofCables.xlsx 41 KB

20170424_Roof integration.pdf 2 MB

Hi all,
We are currently trying to finalize the design of the roof integration for DAQ and SC of **protoDUNE-DP**.
We will have three types of material on the roof.
- Cable tray (signal)
- Cable tray (power)
- Racks/boxes

Please verify that all cables on the roof are correctly listed (at least for your part) in the excel sheet named "*20170605_RoofCables.xml*".
If cables are not listed contact me before the end of the month (cable trays will be dimensioned accordingly to this list and after this date extra cables will be not allowed on the roof).

Concerning material on roof we will have:
Heinzinger power supply
Dimension: same size than the one used for the 3m x 1m x 1m

Camera box 1
Dimension: 300mm x 300mm x 150mm

Camera box 2
Dimension: 300mm x 300mm x 150mm

Light calibration system
Dimension: 524mm x 375mm x 300mm

uTCA (x12)
Dimension: 584mm x 490 mm x 178mm

Charge Readout FE Low voltage rack
Dimension: not sized

Purity monitor box 1
Dimension: not sized

Purity monitor box 2
Dimension: not sized

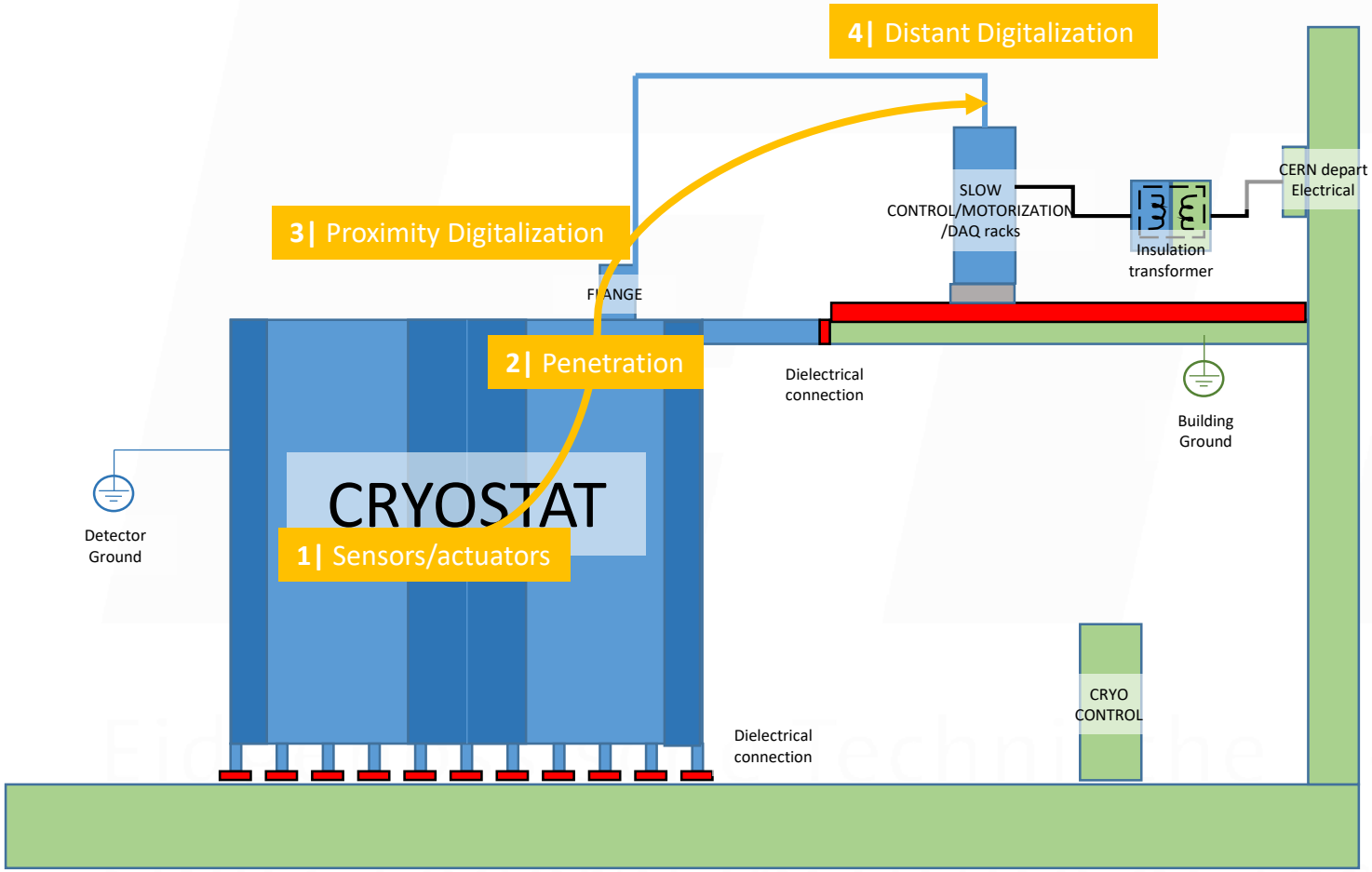
Distance meter box 1:
Dimension: not sized

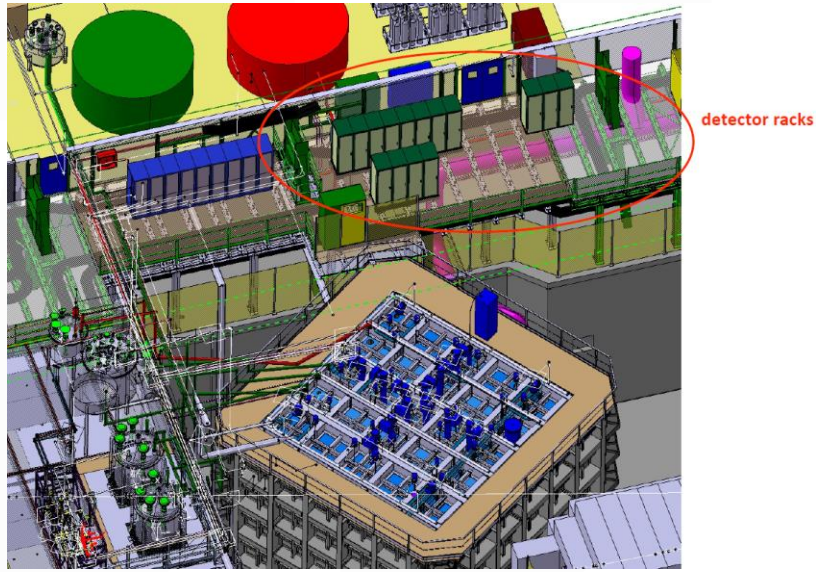
Pulser system box
Dimension: not sized

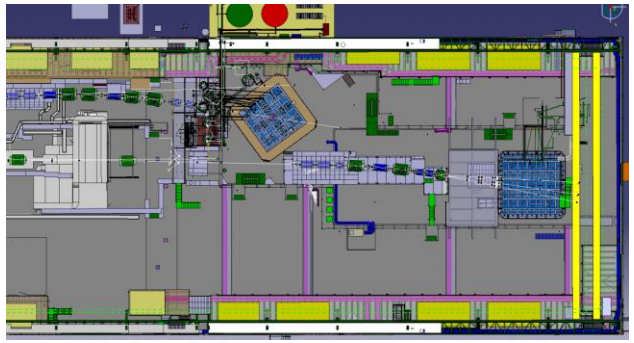
If you need to have additional material on the roof please contact me.

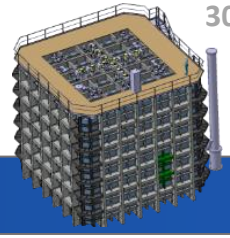
I would also need to know which inputs cables are required for the following boxes:

GENERAL VIEW OF PROTODUNE DP







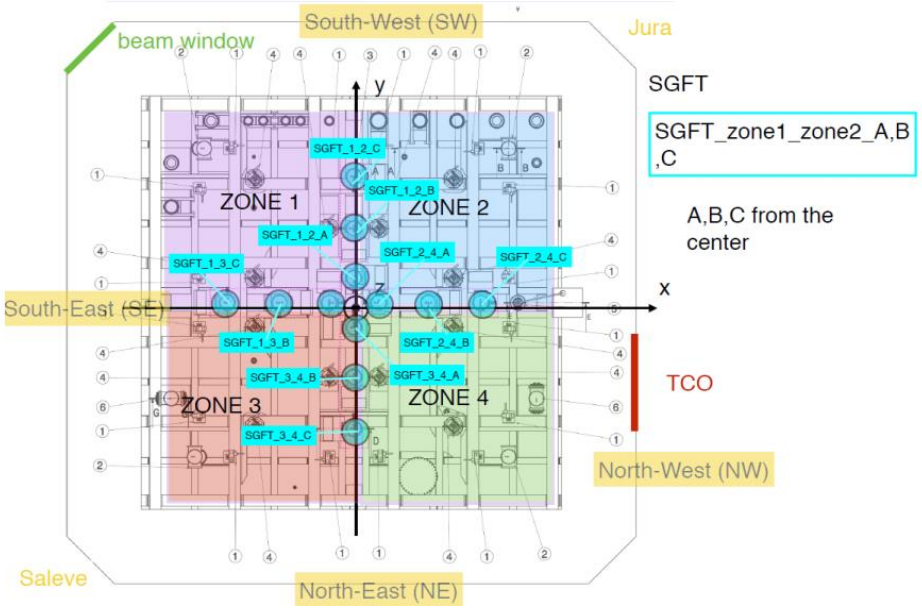


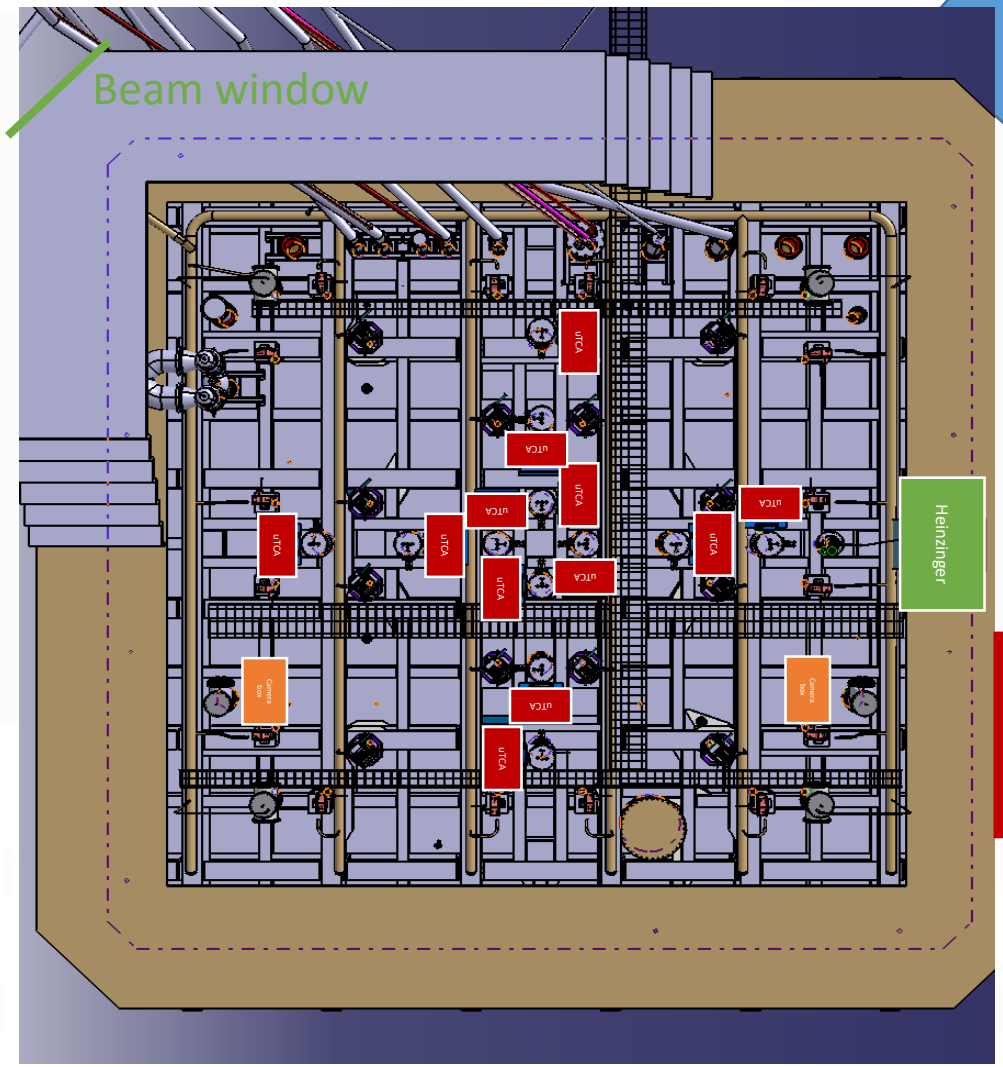
Roof boxes/racks

#items	System	Boxes/racks	Inputs	Size	Consumption	Outputs
1	Slow control	Heinzinger PS unit (Cathode)	OK	19''	200W	OK
2		Camera Box (TANK_INST_NW)	OK	300x300x150	100W	OK
3		Camera Box (TANK_INST_SE)	OK	300x300x150	100W	OK
4	Light Readout	Light calibration system	Not clear	524x375x300	Not clear	OK
5	Purity monitor	Decouplers (TANK_INST_NW)	OK	111x62x30	NC	OK
6		Decouplers (TANK_INST_SE)	OK	111x62x30	NC	OK
7		Lamp Box	OK	600x310x190	To be define	OK
8		PreAmp (TANK_INST_NW)	OK	202x121x55	To be define	OK
9		PreAmp (TANK_INST_SE)	OK	202x121x56	To be define	OK
10	Charge readout	uTCA (SGFT_1_2_A)	OK	584x490x178	300W ???	OK
11		uTCA (SGFT_1_2_B)	OK	584x490x178	300W ???	OK
12		uTCA (SGFT_1_2_C)	OK	584x490x178	300W ???	OK
13		uTCA (SGFT_2_4_A)	OK	584x490x178	300W ???	OK
14		uTCA (SGFT_2_4_B)	OK	584x490x178	300W ???	OK
15		uTCA (SGFT_2_4_C)	OK	584x490x178	300W ???	OK
16		uTCA (SGFT_1_3_A)	OK	584x490x178	300W ???	OK
17		uTCA (SGFT_1_3_B)	OK	584x490x178	300W ???	OK
18		uTCA (SGFT_1_3_C)	OK	584x490x178	300W ???	OK
19		uTCA (SGFT_3_4_A)	OK	584x490x178	300W ???	OK
20		uTCA (SGFT_3_4_B)	OK	584x490x178	300W ???	OK
21		uTCA (SGFT_3_4_C)	OK	584x490x178	300W ???	OK
22		LV Front end electronics	Not define	Not define	Not define	Not define
23		Pulsing System	Not define	Not define	Not define	Not define
24	CRP Motorization	DM0001	OK	100x60x30	NC	OK
25		DM0002	OK	100x60x30	NC	OK
26		DM0003	OK	100x60x30	NC	OK
27		DM0004	OK	100x60x30	NC	OK
28		DM0005	OK	100x60x30	NC	OK
29		DM0006	OK	100x60x30	NC	OK
30		DM0007	OK	100x60x30	NC	OK
31		DM0008	OK	100x60x30	NC	OK
32		DM0009	OK	100x60x30	NC	OK
33		DM0010	OK	100x60x30	NC	OK
34		DM0011	OK	100x60x30	NC	OK
35		DM0012	OK	100x60x30	NC	OK

3 & 4 | BOXES/ RACKS ON ROOF

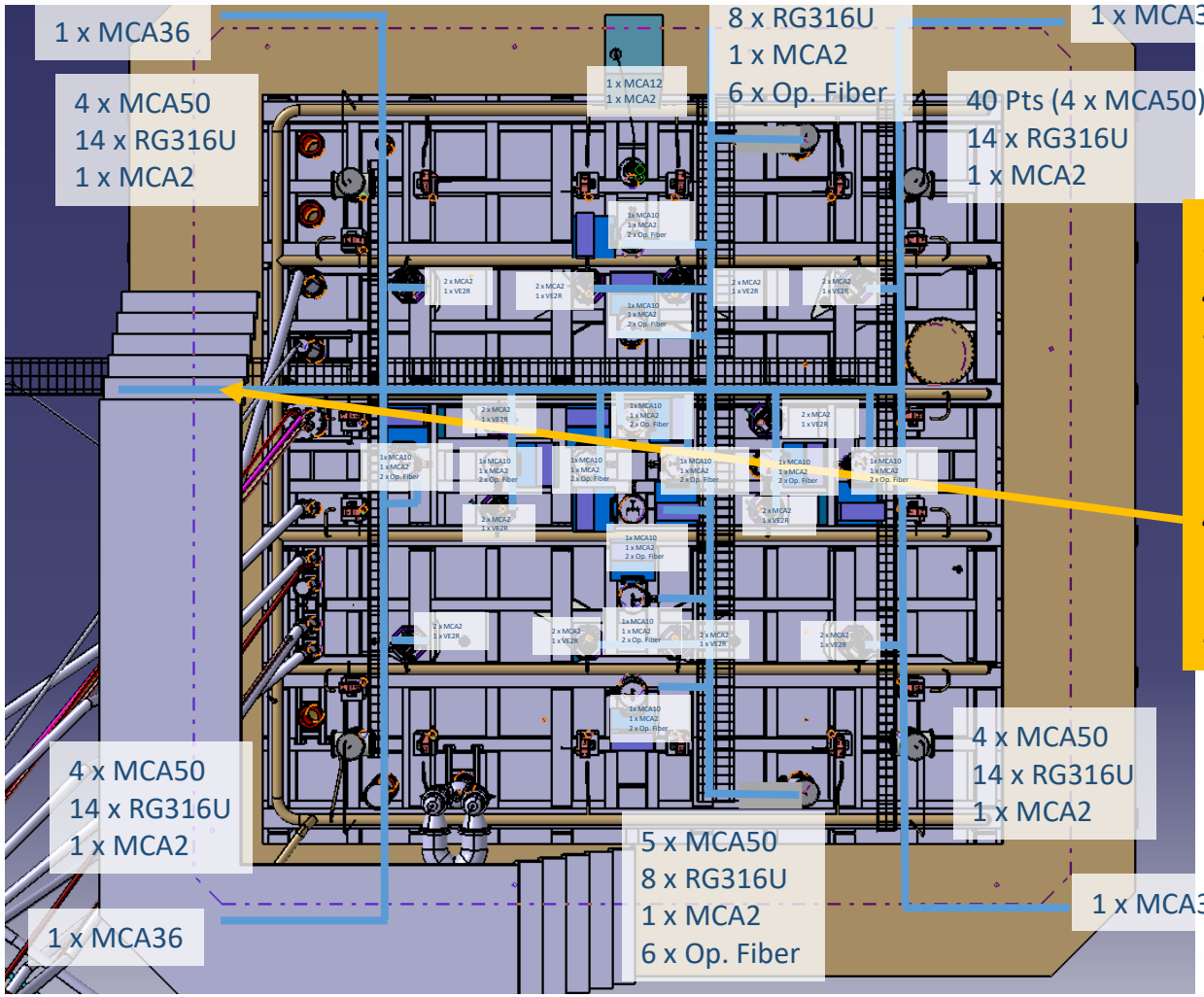
Some boxes are currently not integrated on the design (LV Distribution box, Purity Monitor Box, Pulser Box, Distance Meter Box, Calibration light box)





3 & 4 | SIGNAL DISTRIBUTION ON ROOF

Cable tray 400mm prototyping (without optical fibers).

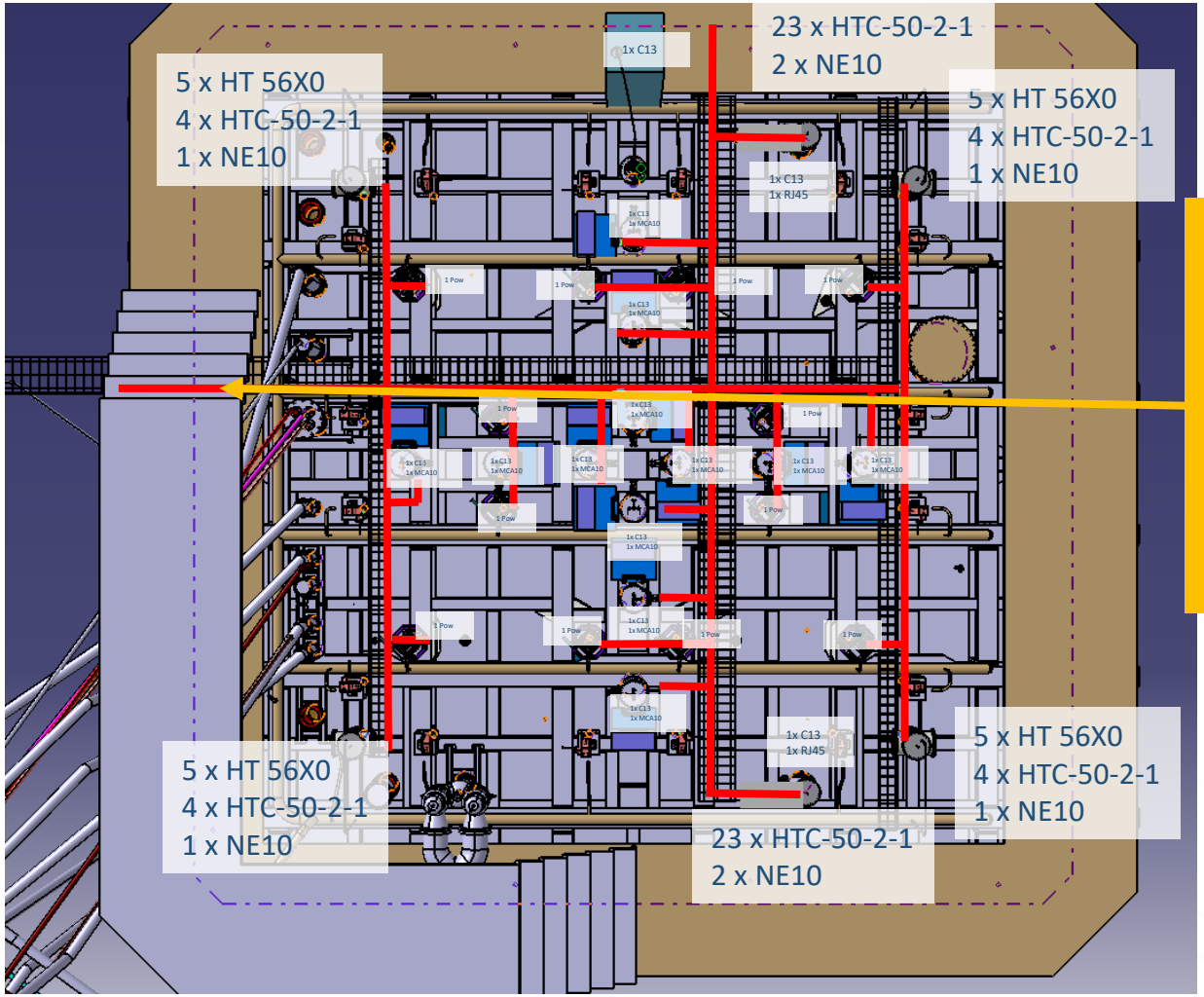


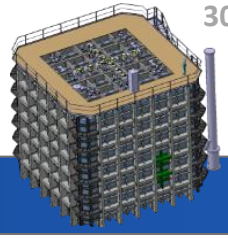
3 & 4 | POWER DISTRIBUTION ON ROOF

PROTO in progress

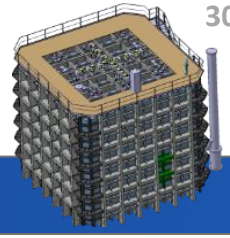
Cable tray 400mm prototyping (without power plug/Purity monitor/Calibration Light readout).

PROTO in progress

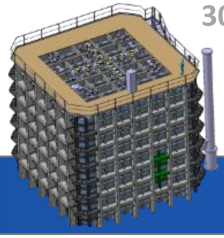




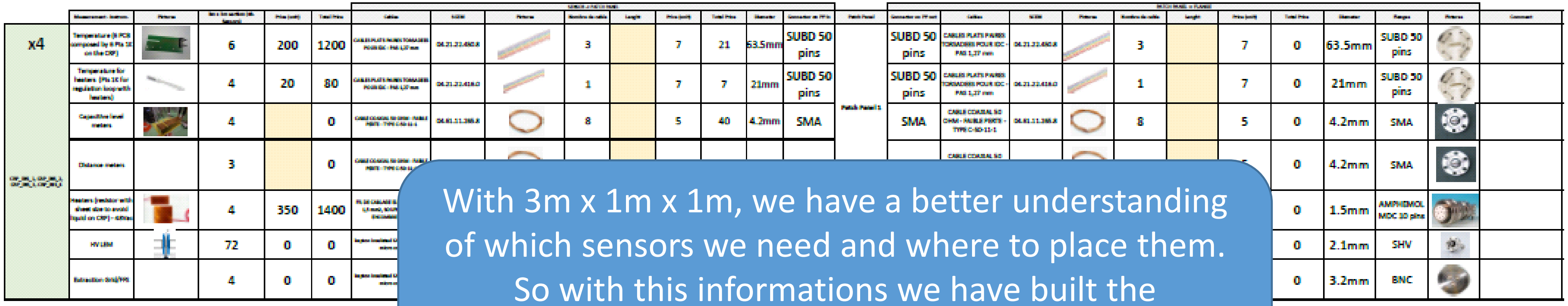
Back up slides…

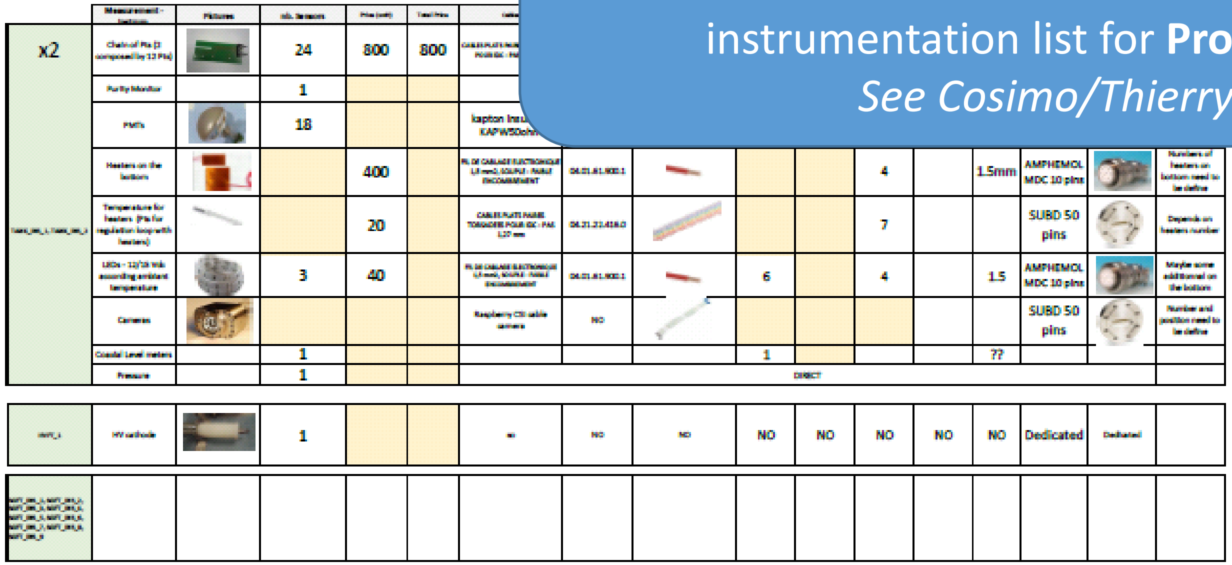


Racks position

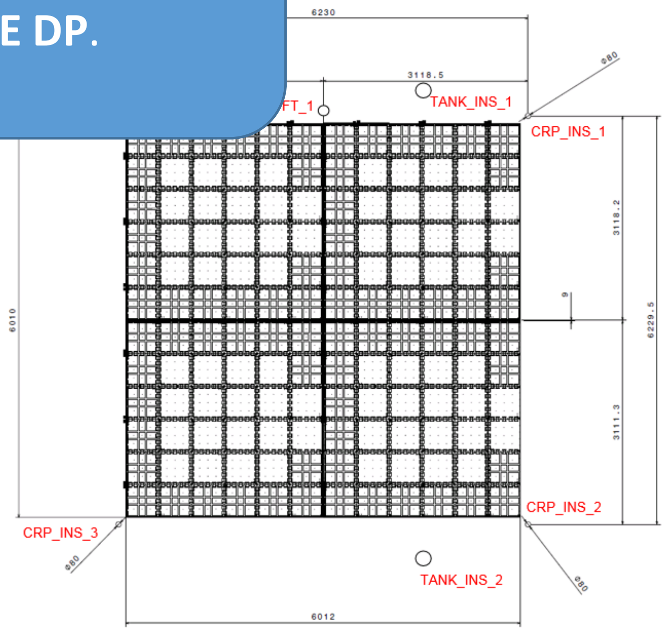


1| SENSORS/ACTUATORS



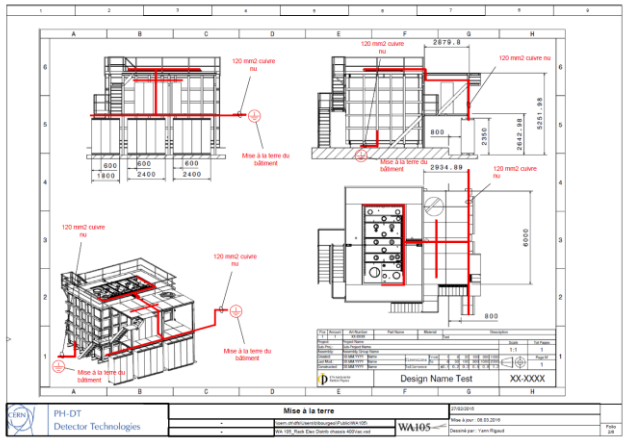


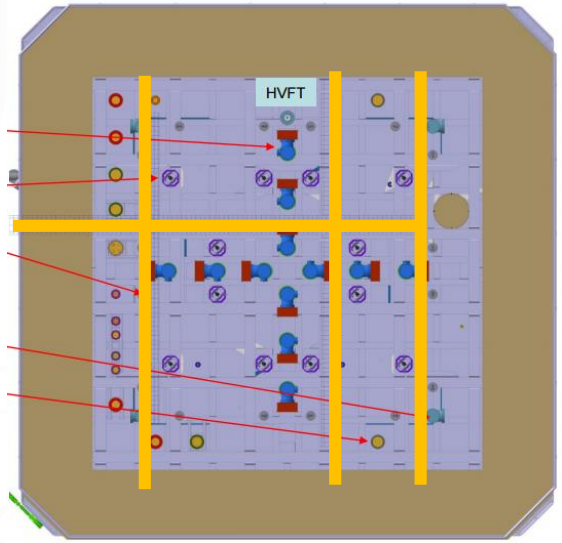
With 3m x 1m x 1m, we have a better understanding of which sensors we need and where to place them.
So with this informations we have built the instrumentation list for **ProtoDUNE DP**.
See Cosimo/Thierry talk



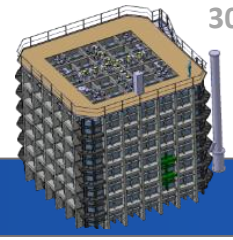
3 & 4 | GND ON ROOF

Simple drawing for copper plates implementation used for GND.





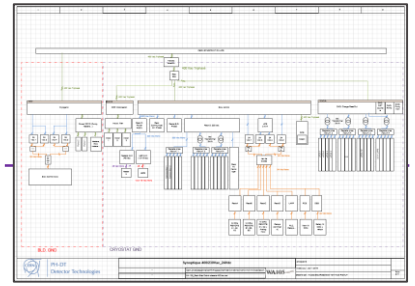
POWER DISTRIBUBUTION (SIMPLE VERSION)



CERN STARPOINT

INSULATION TRANSFORMER

75kVA (WITH MARGIN)



REPARTITION BOX

CRYOGENIC PROCESS

20kVA
MOTORIZATION PROCESS

Rack LAPP 01

Rack LAPP 02

20kVA
SLOW CONTROL PROCESS / DCS / COM / DSS

Rack ALIM

Rack COM

Rack PCS

Rack INT.

Rack DSS

Rack DCS

Rack A

Rack B

Rack C

Rack D

20kVA
DAQ

10kVA
Charge Read Out

2kVA
PMTs

8kVA
CRT

BLD. GND

CRYOSTAT GND