



COLD network needs

S. M. Liuzzo

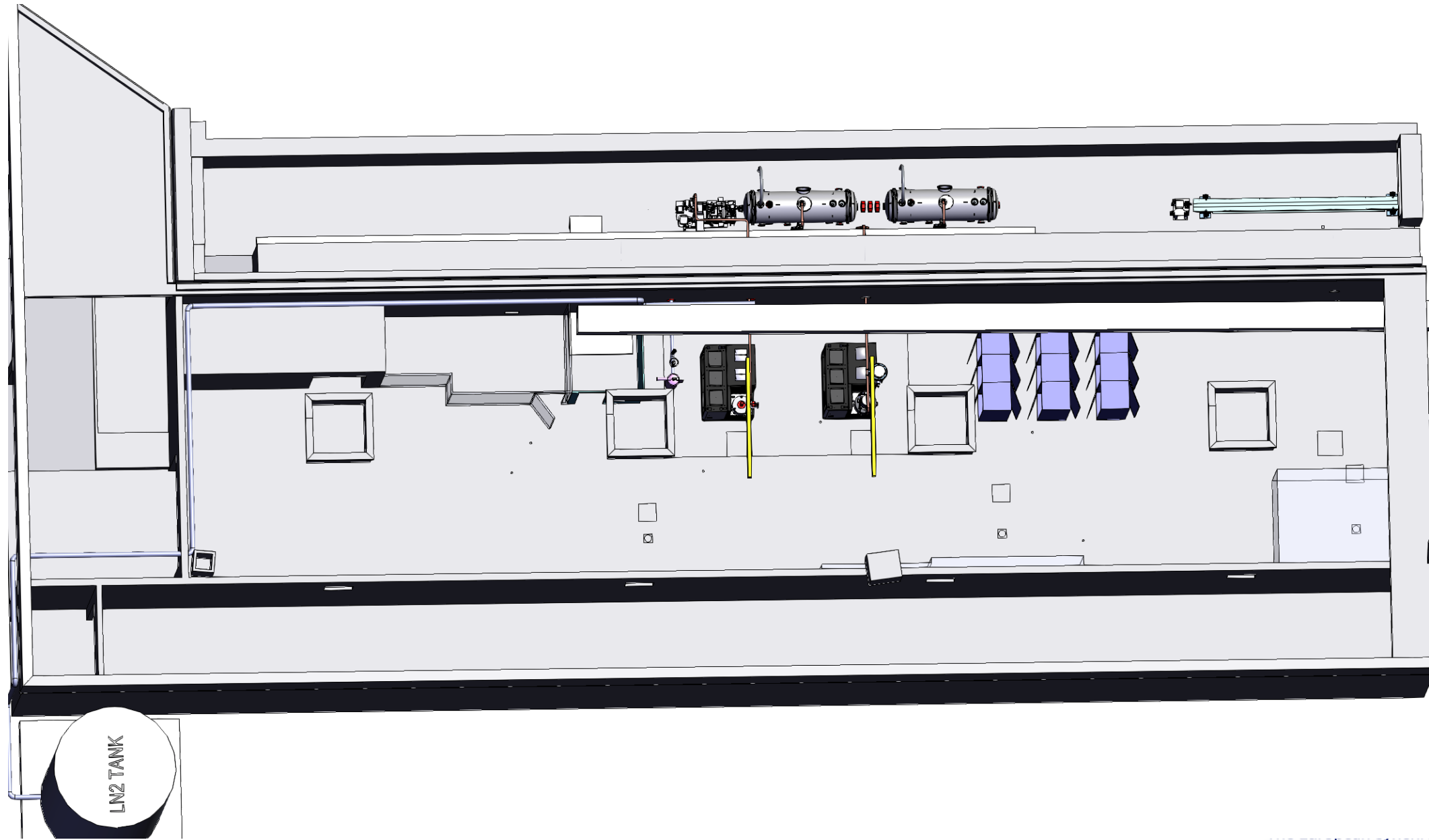
*On behalf of the EBS Accelerator Team and the
international collaboration:
SLAC, INFN, CERN, PSI, CORNELL*

COLD project team @ ESRF:

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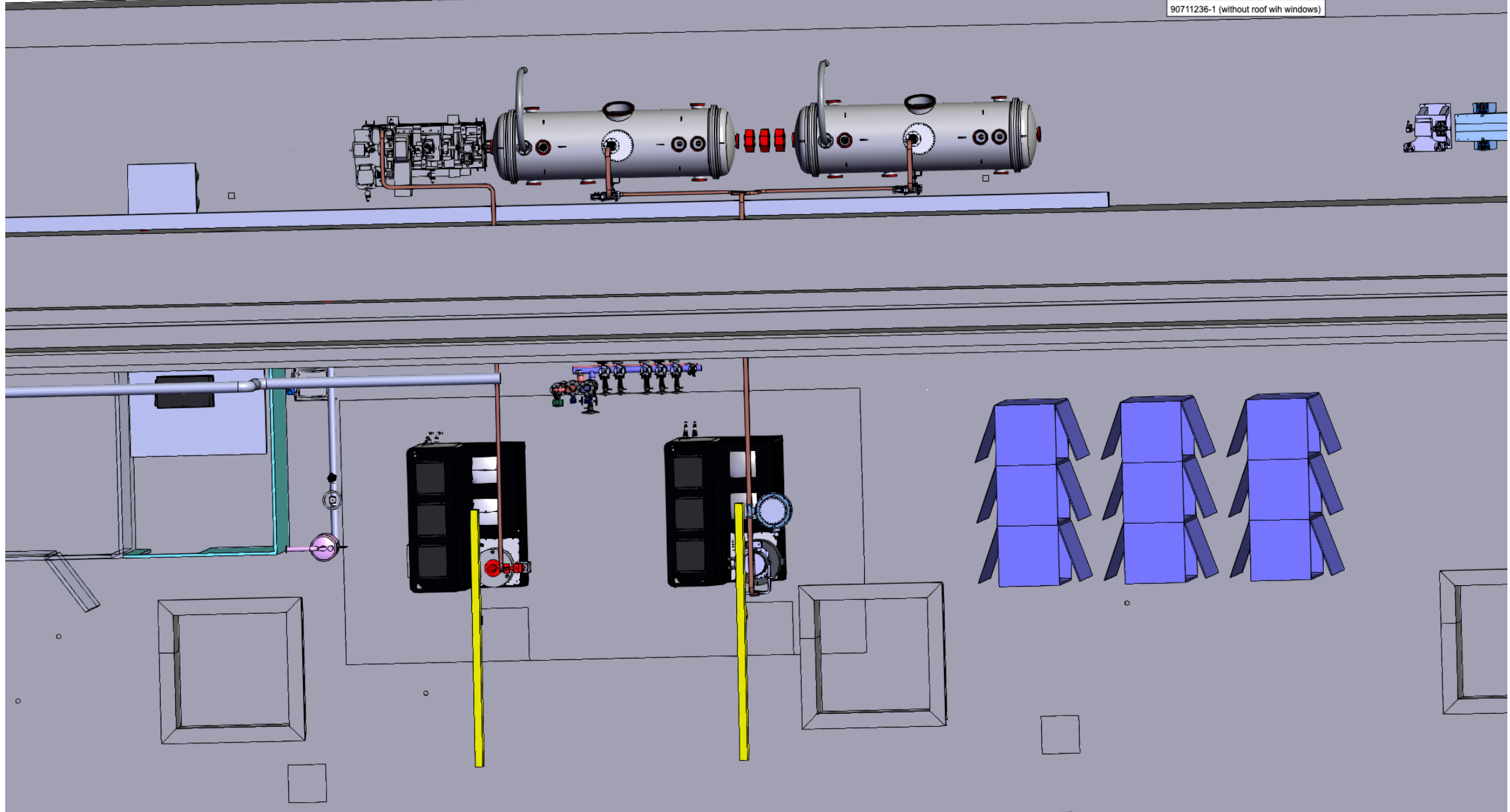
B.Roche, C.Benabderrahmane, G. Le Bec, R. Bourtembourg, J.-L. Pons, D. Martin, C. Gonzalez Torres, B. Pelissier, L.Eybert, T.Brochard, C.Maccarrone, J.-L. Revol, B.Joly, Y.Gouez, F.Favier, H. Pedrosa Marques, P.Colomp, H.Gonzalez, A.Dely, F.Falaise, David Frichet, E.Mitchell, R.Gibson, D.Flood, A.Talucci, P.Lean, A.Dely, B.Tommasini, I. Leconte, Q.Qin

COLD PROJECT



COLD PROJECT

90711236-1 (without roof with windows)



NETWORK NEEDS FOR COLD

# of plugs	
WP01 RF	42
WP02 Diagnostics	36
WP03 Vacuum	10
WP04 Mechanical Engineering	4
WP05 Infrastructure	? (12)
WP06 Operation	0
WP07 Control	4 - 8
WP08 Alignment	7
WP09 Safety	? (12)
WP10 Magnets and PS	10
WP11 Beamdynamics	0
WP12 Timing	? (12)
SLAC equipments (RASNIK)	(12)
TOTAL	110 (160)

42 plugs

Looking at the present RF installation and taking some margin

Note: I assume that the number of plugs available in one cubicle is a multiple of 6 (= 1 cassette) as it is today in the cubicles around the TZ.

Laser:

- * in total about 6 plugs will be needed.
- * asked for 2 cubicles for electronics/control
- * Taking into account future evolutions and the probably unequal number of plugs used per cubicle: **1 cassette of 6 plugs per cubicle (=12 in total)** would be ideal.

Linac Diagnostics:

- * in total about 18 plugs will be needed.
- * asked for 2 cubicles for electronics/control
- * Taking into account future evolution of needs and the probably unequal number of plugs used per cubicle: **2 cassettes (=12 plugs) per cubicle (=24 in total)** will be needed here.

For more details you can have a look here (the contents ins this link may/will evolve slightly with time):

<https://confluence.esrf.fr/display/PROJCOLD/Network+Plug+Needs>

Best regards,
Friederike

rough evaluation I can do is:

- 4x 4UHV controllers to power the pumps of the wave-guide, gun, etc...
- 4x TPG300 to control the gauges

all these 8x controllers are managed via RS232/485 via ENET switch.

Plus:

- 1x Wago PLC to control the valves
- RGA controller

both above 2 devices are managed directly via ENET

I put Hugo in cc so maybe he can add or correct something

Cristian

From MEG in theory no needs, but we can at least reserve some plugs for WAGO boxes : Qty = 4

Unkown

Our intention is to **replicate the same installation that was used for EBS**, which means one network connection panel per cubicle. A panel will only be installed where at least one connection is required; cubicles with no connection needs will be left without one.

Even if a cubicle only requires a single connection, we will still provide a full panel, as this will likely also cover future, unplanned needs. I don't remember what is the minimum number of plugs per panel, but it doesn't matter.

After the meeting, I will contact the network responsible to clarify this point further if necessary.

Best regards,

Benoît

On ACU side (for the hardware ACU is responsible for), we will need network connections if there is a need to install 1 or 2 Device Masters (Serial Line Concentrators accessible through the network).

But honestly, for the moment, I have no info about the needs in terms of Serial Lines. Maybe we will be able to control all the hardware directly via the network?

Maybe we won't need device masters?

We might need network connections for 1 or 2 industrial PCs if we need to access some hardware devices which shall be on a private network (because they are running an obsolete Windows version for instance, like old oscilloscopes, or using a strange network protocol, or if there is a need to use a PCI board or similar to communicate with the hardware).

Ideally, we would like to use Virtual Machines instead of industrial PCs so if we can avoid to buy industrial PCs that would be great.

I think that's all for the hardware devices ACU might be responsible for.

Honestly, for the moment, I don't have enough information about what we will have to control and on the way we will control that to give you precise numbers. I hope we will get more information thanks to the meeting you triggered.

If you want to be on a safe side, for the hardware ACU is responsible for, we should foresee 2 network connections for device masters and 2 network connections for industrial PCs but we will probably use less than 4 network connections for the hardware we are responsible for.

Kind regards,
Reynald

From our side it is still quite difficult to give you a number. However, based on the three systems being considered, our preliminary estimate would be:

HLS: 3 RJ45 ports

WPS: 2 RJ45 ports

FSI: 2 RJ45 ports

These are only preliminary numbers and may need to be adjusted as the project progresses and the requirements become clearer.

Thank you,

Kind Regards,

Cristina

Unkown

Here are the needs for Power Supplies.

- * Phase 0: 3 Quadrupoles --> 3 power supplies --> **3 Ethernet link.**
- * Phase 1: 4 Quadrupoles --> 4 power supplies, maybe 3 if one magnet is a permanent magnet --> **4 Ethernet link**, maybe 3 if one magnet is a permanent magnet.
- * Phase 1: 1 Dipole --> 1 power supply --> **1 Ethernet link.**
- * Phase 1: 2 Correctors --> 2 power supplies --> **2 Ethernet link.**

Quadrupoles PS and Correctors PS will be mounted in the same cubicle and Dipole PS in another one.

Thank you in advance.

Regards,

Philippe

No needs

Unkown