PT-meeting 06.11.2017

Outline

- LH2 target
  - silicon diode voltage drop
  - annealing by fast empty mode
  - dismount of the target
- Polarized target preparation
  - target platform
  - schedule
  - man power
  - target cell and NMR coils location
  - magnet preparation
  - PLC CPU movement

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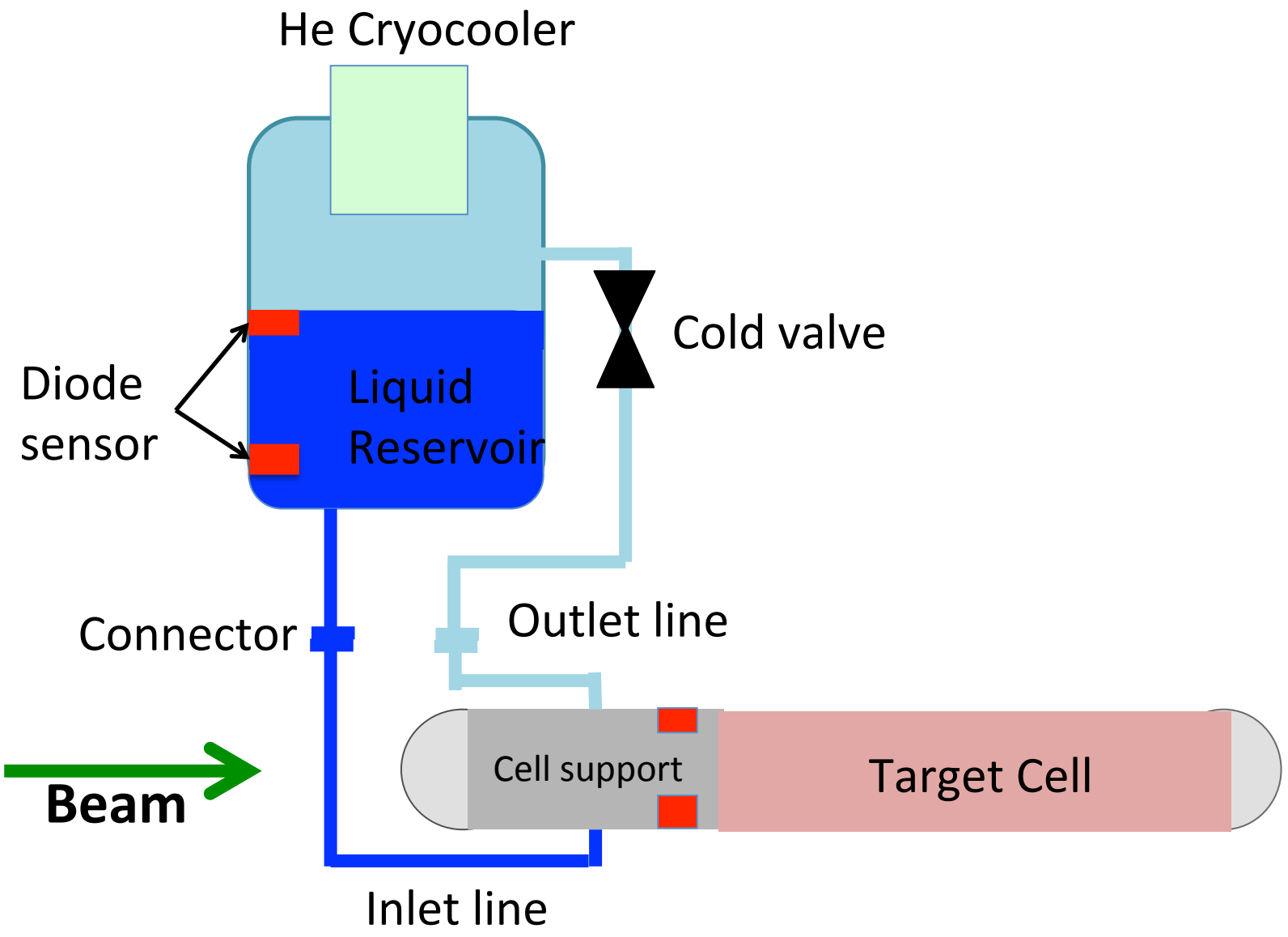
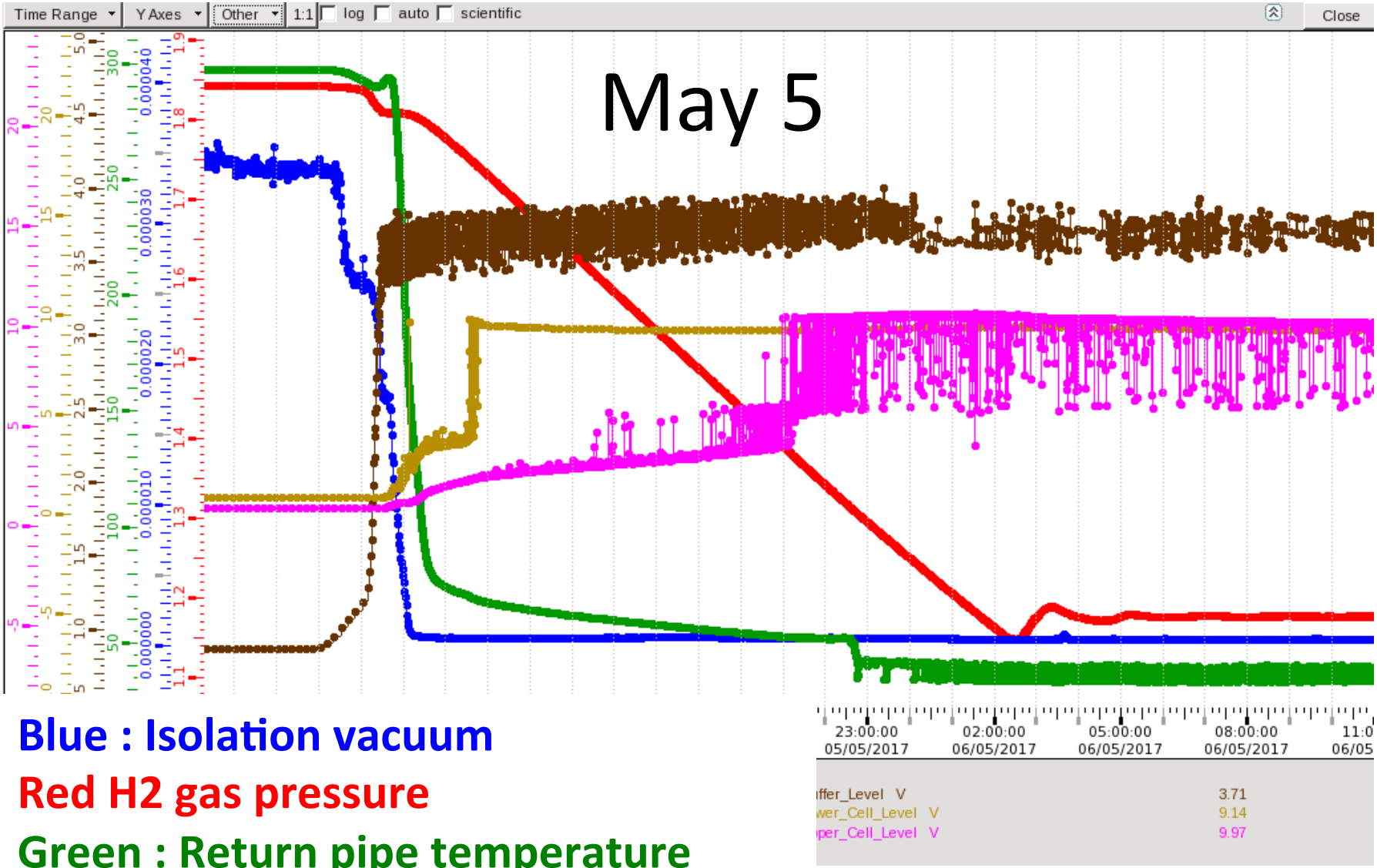
Sketch of LH2 target





Blue : Isolation vacuum

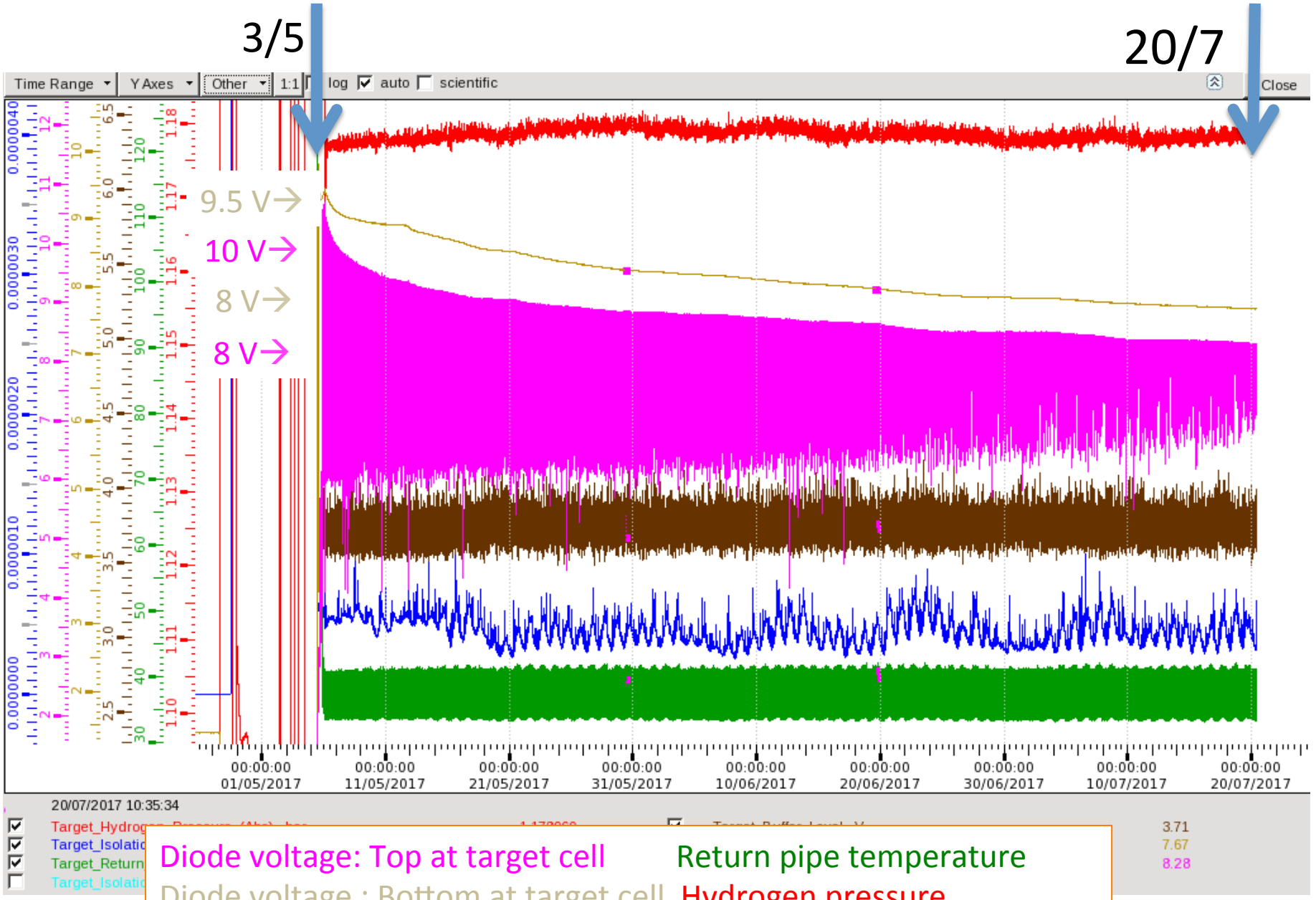
Red H2 gas pressure

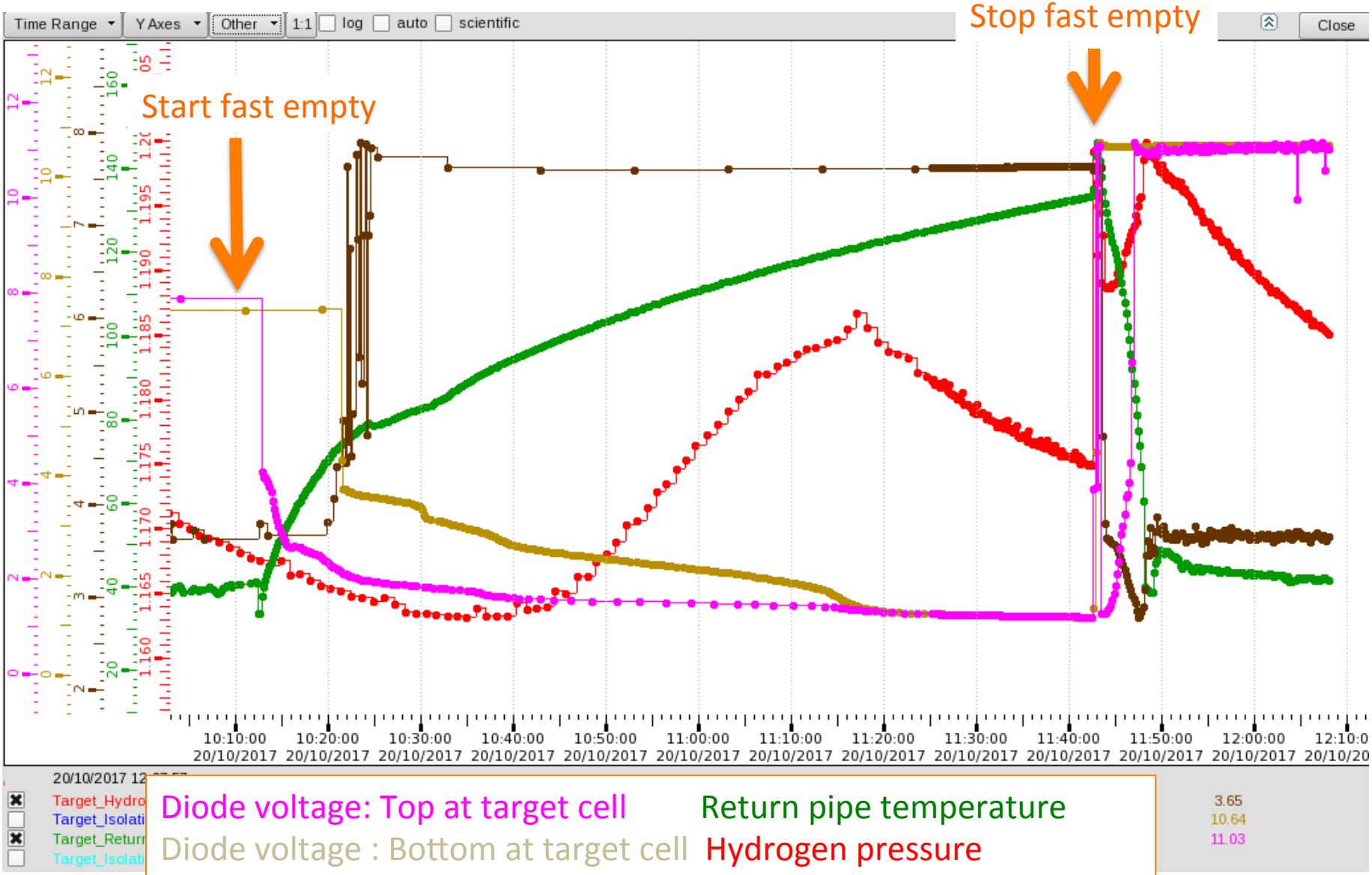
Green : Return pipe temperature

Dark brown : reservoir bottom diode

Light brown : target cell bottom diode

Pink : target cell top diode


3/5
20/7
Time Range
Y Axes
Other
1:1
log
auto
scientific
Close
9.5 V→
10 V→
8 V→
8 V→
0.0000040
0.0000030
0.0000020
0.0000010
0.0000000
00:00:00 01/05/2017
00:00:00 11/05/2017
00:00:00 21/05/2017
00:00:00 31/05/2017
00:00:00 10/06/2017
00:00:00 20/06/2017
00:00:00 30/06/2017
00:00:00 10/07/2017
00:00:00 20/07/2017
20/07/2017 10:35:34
Target_Hydrogen_Pressure_(Abs)_bar
Target_Isolatio
Target_Return
Target_Isolatio
3.71
7.67
8.28
Diode voltage: Top at target cell
Return pipe temperature
Diode voltage : Bottom at target cell
Hydrogen pressure
Diode voltage : Bottom at buffer


Time Range
Y Axes
Other
1:1
log
auto
scientific
Close
Stop fast empty
Start fast empty
10:10:00 20/10/2017
10:20:00 20/10/2017
10:30:00 20/10/2017
10:40:00 20/10/2017
10:50:00 20/10/2017
11:00:00 20/10/2017
11:10:00 20/10/2017
11:20:00 20/10/2017
11:30:00 20/10/2017
11:40:00 20/10/2017
11:50:00 20/10/2017
12:00:00 20/10/2017
Target_Hydro
Target_Isolati
Target_Return
Target_Isolati
3.65
10.64
11.03
Diode voltage: Top at target cell
Return pipe temperature
Diode voltage : Bottom at target cell
Hydrogen pressure
Diode voltage : Bottom at buffer

Silicon diode voltage

	May 5	Oct. 20	After Fast empty
Bottom at target cell	9.5 [V]	7.3	10.6
Top at target cell	10.5	7.8	11.0
Bottom at buffer	3.7	3.6	3.6

After annealing the voltages were back to the beginning.

Activities after the end of the run

- The target compressor stopped on 21/10.
- Helium is filled in the buffer tanks
- The target was removed and transported to the clean room.

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CHAMP MAGNETIQUE
DANGER
MAGNETIC FIELD
SALEVE

Next steps around platform

- Evacuation pumps for He3 line
- Rotary pump for Isolation vacuum
- NMR rack

- Electrical line → hope to be connected in this week
- Cooling row water line → available until the end of Dec.
- Compressed air line

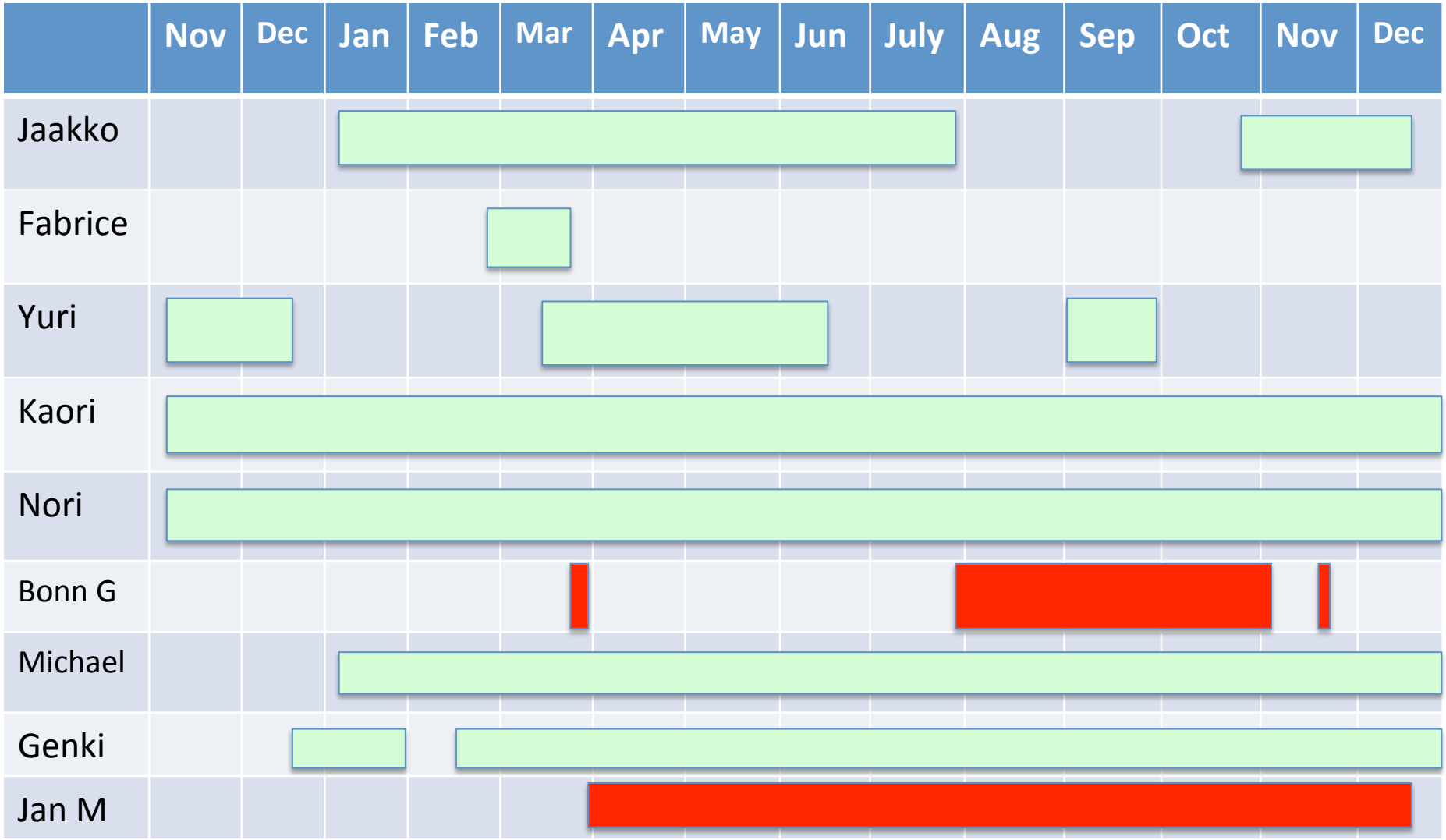
- Cable tray
- Cables, Pipes

Change over schedule ~key date~

- 23/10 Beam stop
- 31/10 Target platform rotation (loading platform installation)
- 6,7/11 Concrete blocks for absorber basement (Didier)
- 8/11 Magnet cables installation
- 8/11 He3 pumping pipes installation
- 8/11 Diffusion pump cable installation
- 13/11 DR cables installation
- 13/11 Waveguide installation
- 13/11 NMR rack installation
- - 20/11 Isolation vacuum leak check (DCS??)
- 20/11 Hadron absorber installation
- 20/11 Leak check
- ***Cooling water line intervention (Jan – 23.Feb)*** → meeting (7/11)
- 22/01 Magnet precooling

  → magnet commissioning, target commissioning
- 09/04 Beam time starts
- 11/11 Beam stops

Man power

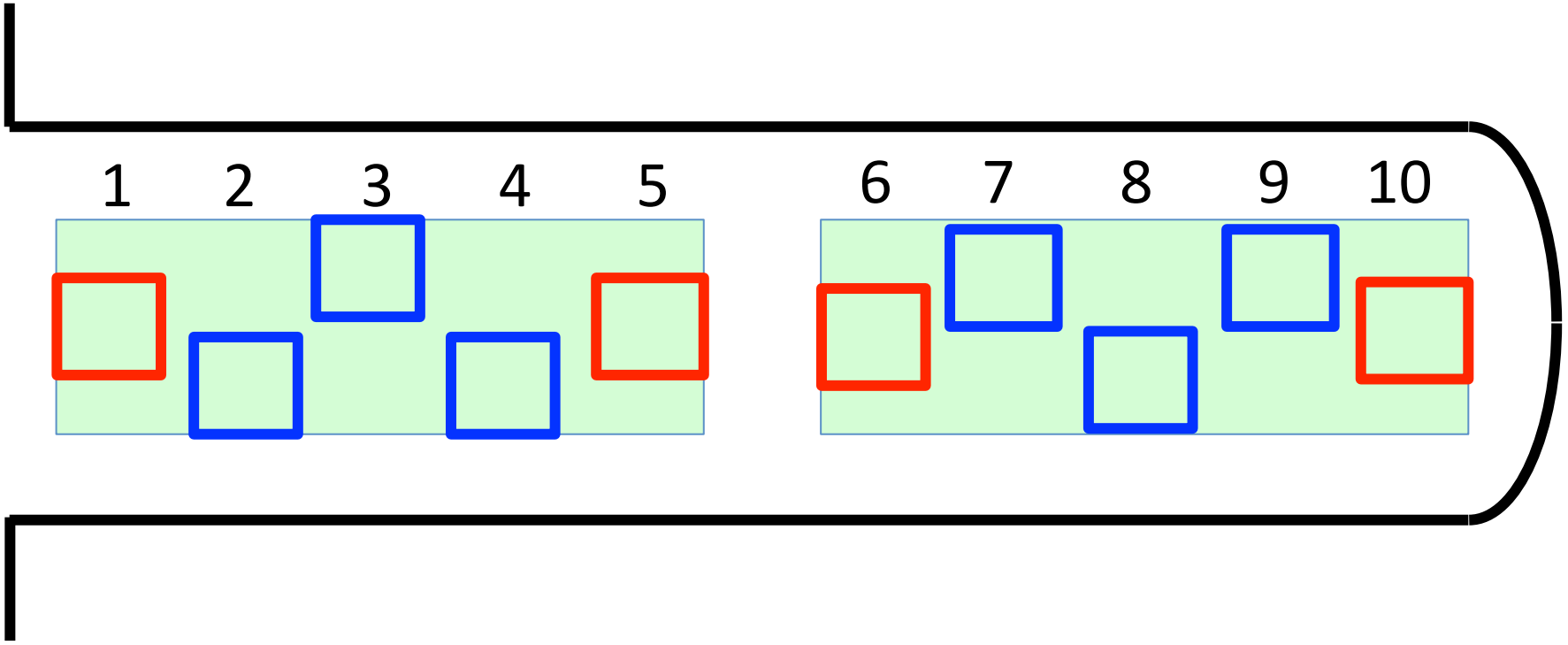

Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
July
Aug
Sep
Oct
Nov
Dec
Jaakko
Fabrice
Yuri
Kaori
Nori
Bonn G
Michael
Genki
Jan M

Target cell

- NMR coils location changed
- Support rings for two coils inside cells (coil 3, 8)
  - PCTFE material
  - Fixing coils to the support
  - easy to install inside cell
- Contact to Bochum workshop (Gerhard. R) → no more material at Bochum
- Additional microwave stopper
  - carbon paint
- Protection sheets

NMR coils installation : December

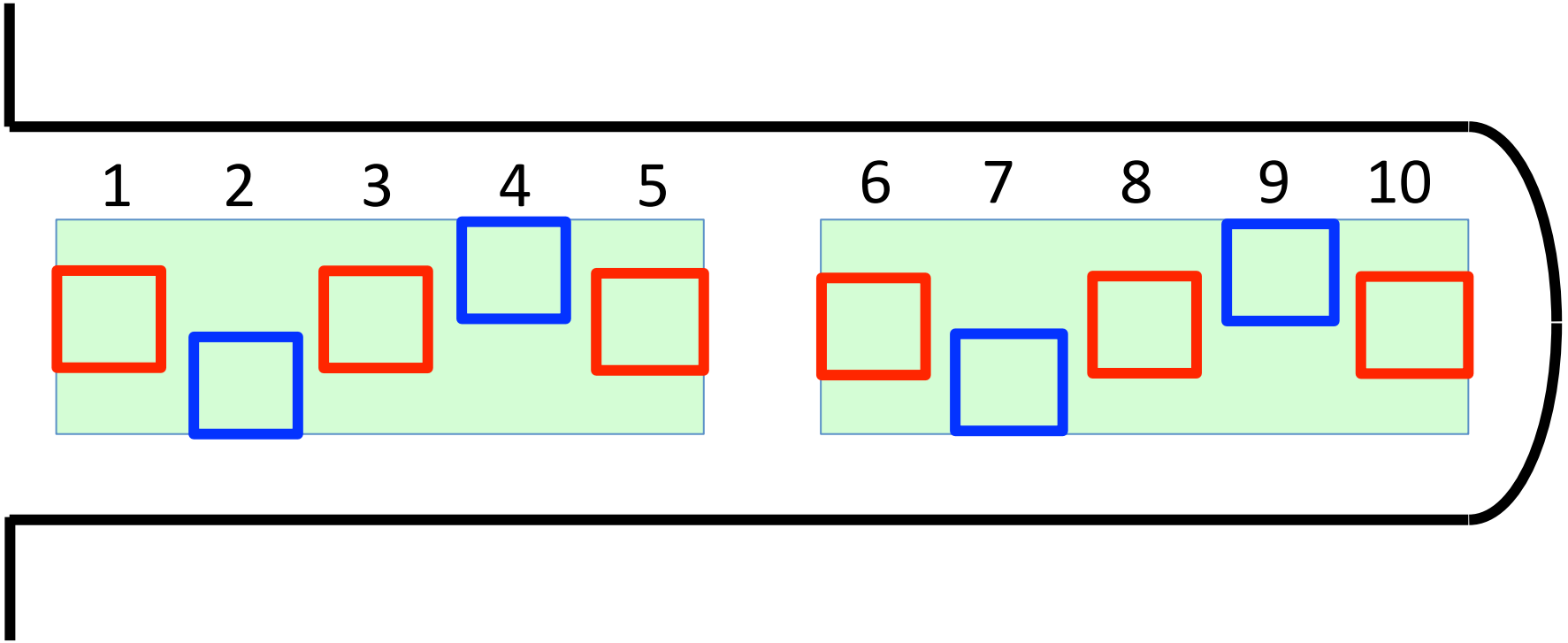
NMR coils location in 2015



Inside

Outside

Proposed NMR coils location in 2018



NMR coil

Inside

Outside

Magnet preparation

- Floor modification for new power convertor -- done
- PLC CPU movement – on going
- Cables installation : from 8.11

  - Scaffold needed

  - Cable tray on Jura side needed
- Signal tests : Alexey Dudarev (EP-ADO)

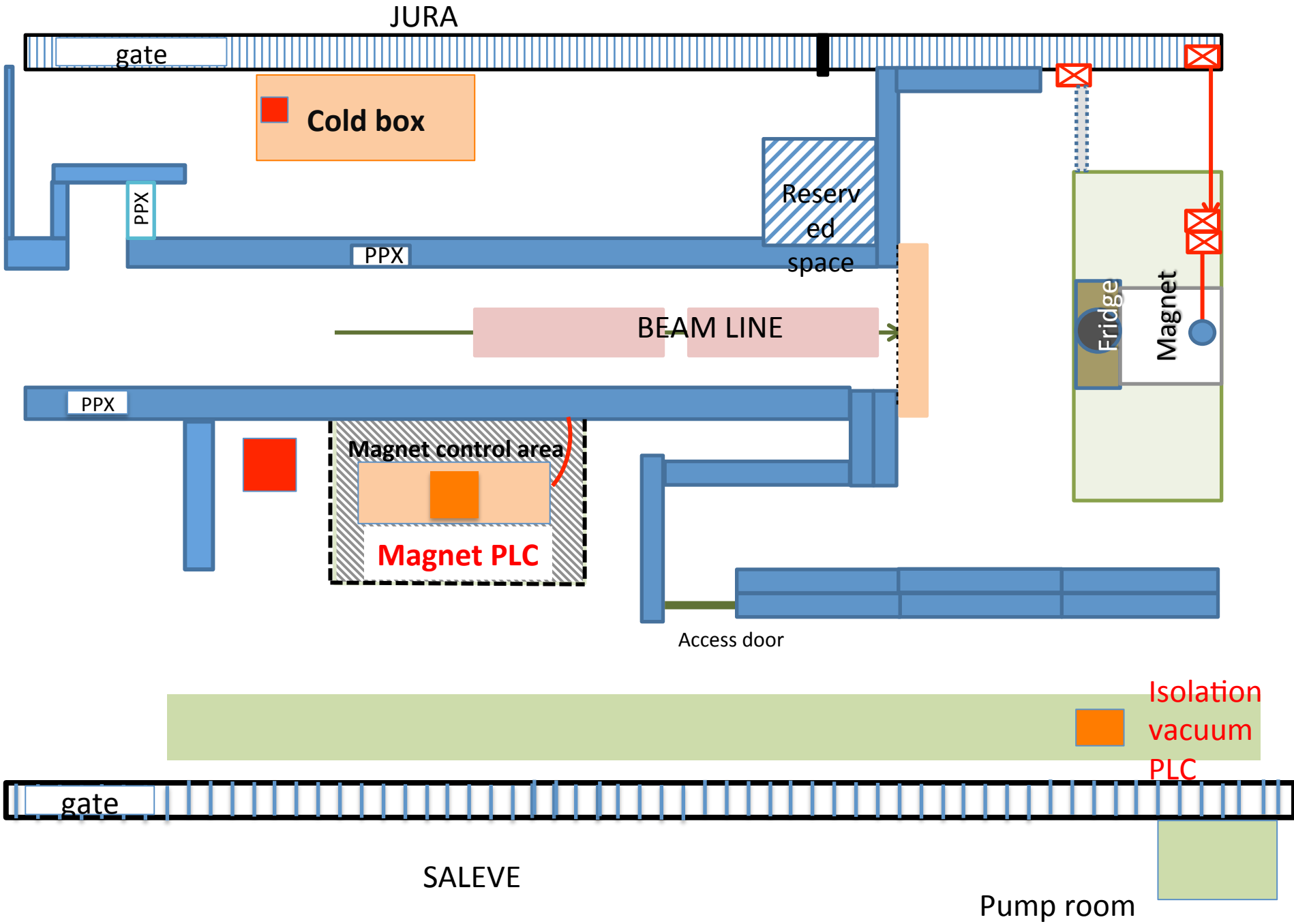
  -- EP-DT : not responsible
- Calculation code for trim coils corrections : Fabrice

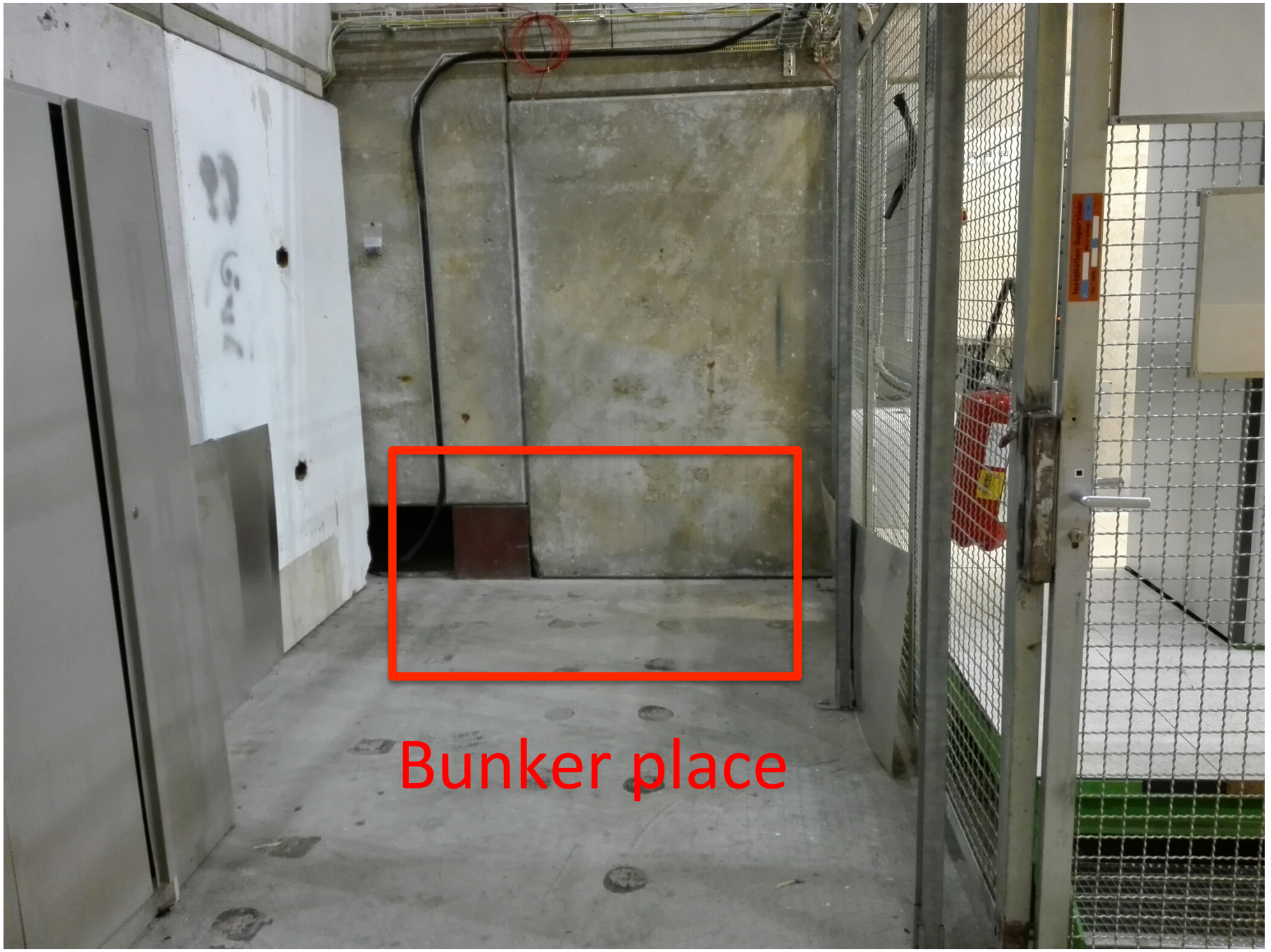
New power converter floor support

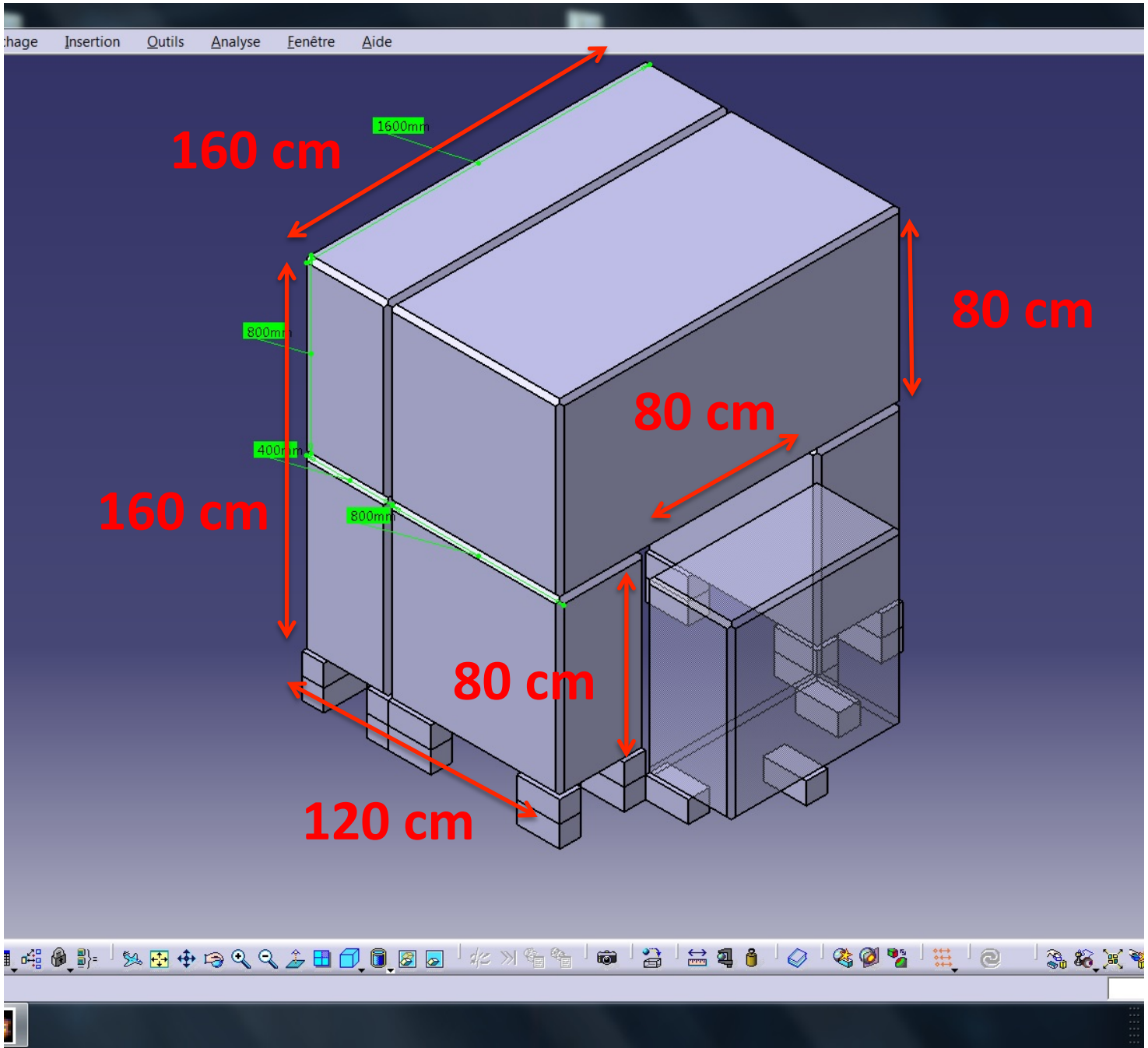
Radiation protection meeting

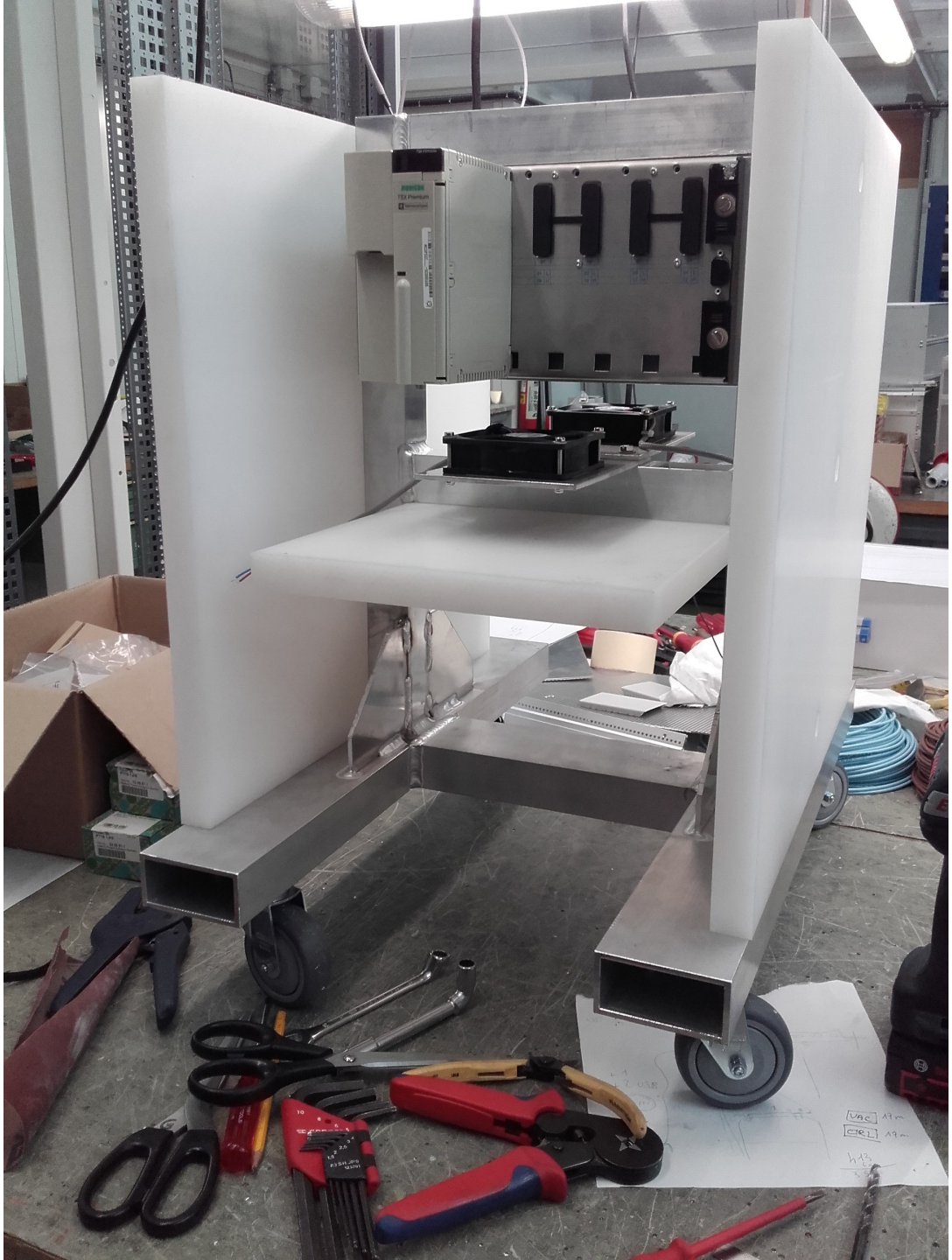
- Meeting with Rubén Alia (EN-STI-FDA) 0ct.17
- COMPASS (4), EP-DT(2), TE-CRG-CE(2)
- PLC in 2015
  - Cold box PLC : Twice failures
  - Magnet PLC : Three times failures
  - Isolation vacuum PLC : Four times failures

- Concrete : 80 cm → 1/10 high energy radiation
- Polyethylene : efficient to lower neutron
- Boron carbide : very efficient to thermal neutron


JURA
gate
Cold box
PPX
PPX
Reserv
ed
space
BEAM LINE
Fridge
Magnet
PPX
Magnet control area
Magnet PLC
Access door
Isolation
vacuum
PLC
gate
SALEVE
Pump room


Bunker place


hage Insertion Outils Analyse Fenêtre Aide
160 cm
1600mm
80 cm
800mm
80 cm
400mm
160 cm
800mm
80 cm
120 cm



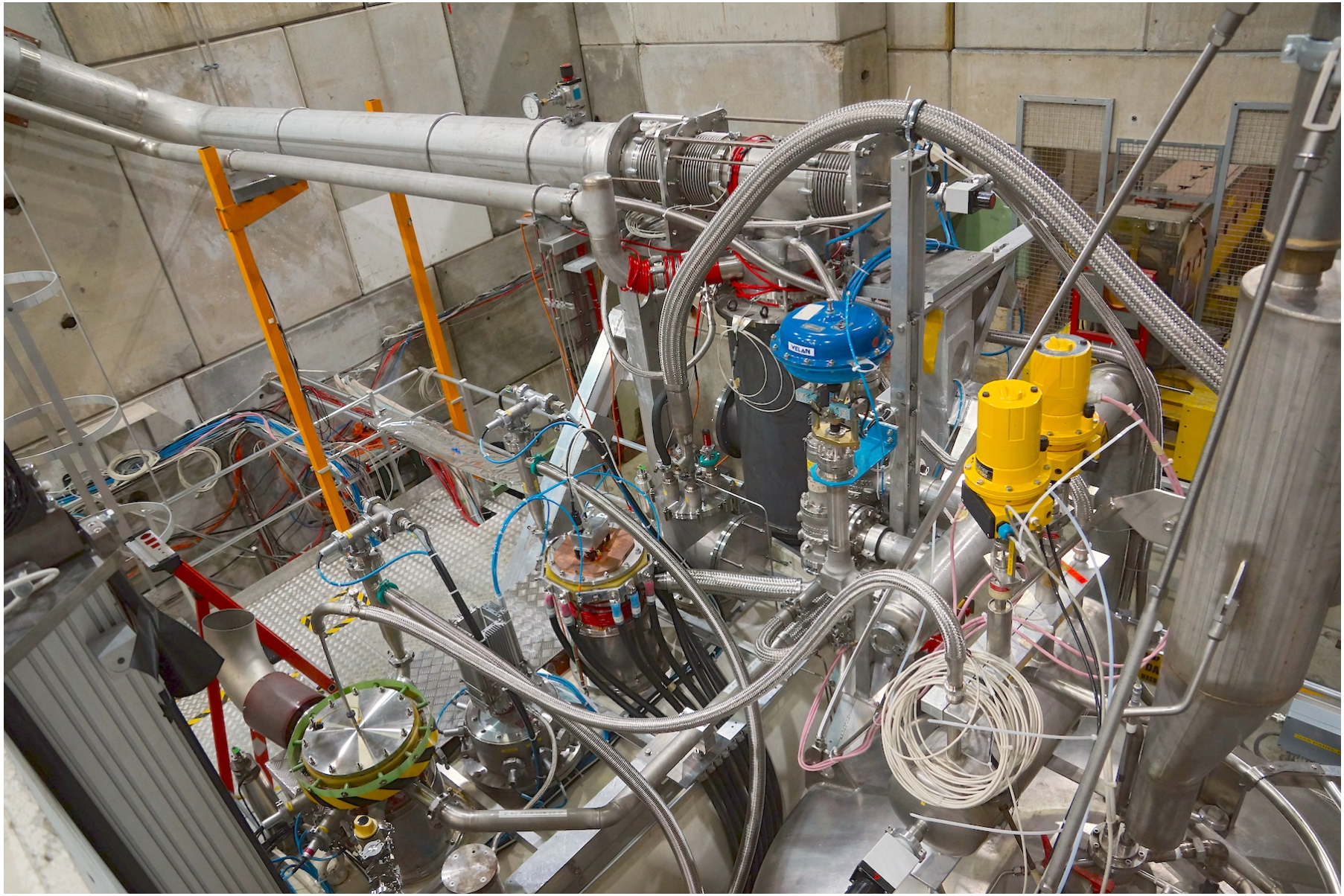

Cold Box PLC

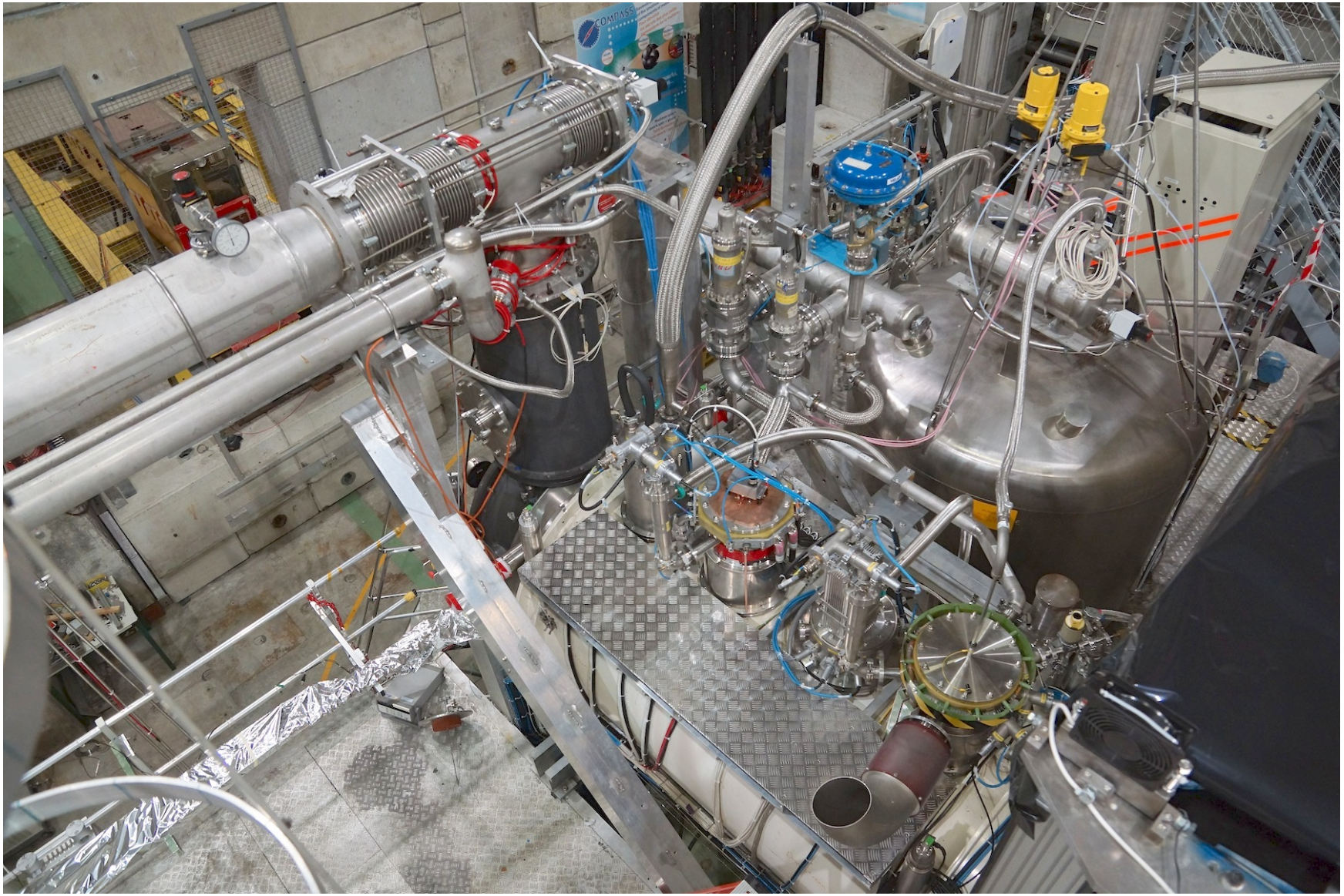
First option for new place for cold box PLC CPU

Cold Box PLC CPU protection

Materials for further discussions

In 2015




COMPASS

Back up

He3 line

- Installation of He3 pumping line on Nov. 8 (TE-CRG)

  - confirmation to Laura

  - one O-ring not arrived yet
- Installation of He3 inlet and access tube lines
- Installation and connection of evacuation pumps
- Change of pumps oil
- Safety valves

He4 pump preparation

- Moreno (TE-CRG)
  - check pumps
- SERCO : visited last week
  - maintenance of control and safety system
- Oil Filter
  - Not yet progressed
- PLC

- Installation of He4 evaporator and cavity line (8 Nov.)

Isolation vacuum pump

- Set up the system as the 2015 run
- Installation
  - Cables on Saleve side
  - Row water and compressed air connections
  - Rotary pump
- Commissioning with the 2015 run set up
- Isolation vacuum leak check
- Modification
  - PLC CPU movement
  - Tap water for cooling water
    -- safety system modification (row water pressure in the distribution of the row water outlet line)

Microwave

- Cooling water exchange : later (March)
- Microwave guide installation

- Set-up in 2017
  - high radiation in downstream in 2015 (coil 10)
    -- shift microwave frequency
  - set-up in 2015
    -- Up: moderate power with modulation
    -- Dwn: high power without modulation

Slow control and DCS

- Data transfer from na58pc057 to DCS
- Na58pc057 on NOT COMPASS network

  - change to COMPASS network

- Isolation vacuum information for leak check

Shopping list

- PC
  - Jaakko → Gerhard accepts to buy normal PC
  - Magnet operation : Yamagata
  - NMR : Yamagata
- Leak detector
  - Arriving soon
- O-ring
  - He3 pumping pipe at DR side : finally ordered on Oct. 18
  - contact person of Angst-Pfister : Séverin Crochemore (severin.crochemore@angst-pfister.com)
- He3 pumps oil
  - ordered on Oct. 18
  - arriving soon
- Demineralized water : enough?
- Cooling water hose for microwave EIO : still fine? (EIOs cleaned last March)