

PT status

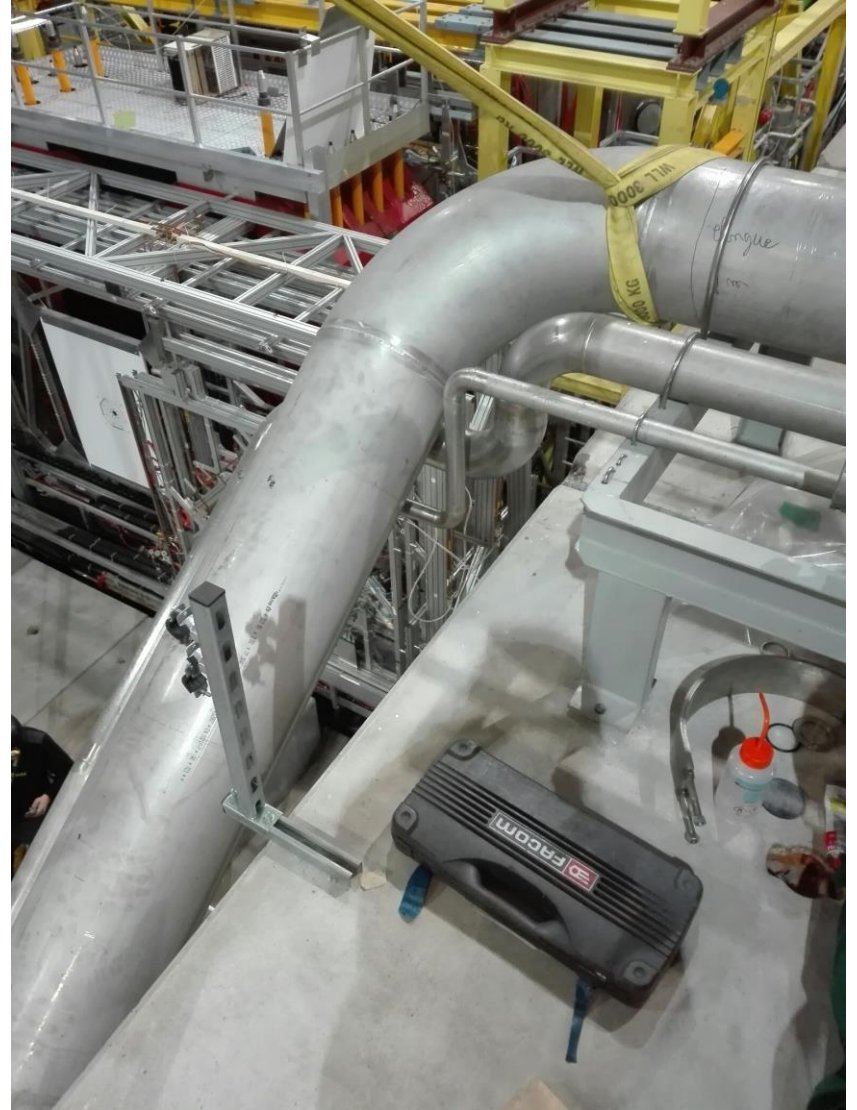
Norihiro DOSHITA

Outline

- Installation status since last TB
 - DR, Microwave
 - Magnet
- Isolation vacuum leak check
- New air conditioner installation in the pump room
- Target cell modification
- PLC status and its future plan

Installation status

- Pipes on Jura side : 8/11 (Wed.)
- He4 pumping line : 8/11 (Wed.)
- Cavity pumping line : 8/11 (Wed.)
- He3 Pumping line : 9/11 (Thu.)
- He3 inlet and He4 return: 9/11 (Thu.)
- Screen lines pipes : 9/11 (Thu.)
- Raw water and compressed air : 9/11
 - water pressure 3 bar only
- Isolation vacuum pumping system :
 - cables installation, signal and functions tests
 - started pumping : 10/11
 - rotary pump stopped. → changed oil by Moreno (TE-CRG)
→ new pump (DUO35) ordered
 - diffusion pump started : 15/11
- Cables installation : 23/11 → signal check on going



Microwave system (Yuri)

- Attenuation test on going
- Inverter failure on the new power supply
 - 3 times (30/11)
 - no failure (1/12)
 - same failure occurred in 2014
 - grounding problem

Magnet status

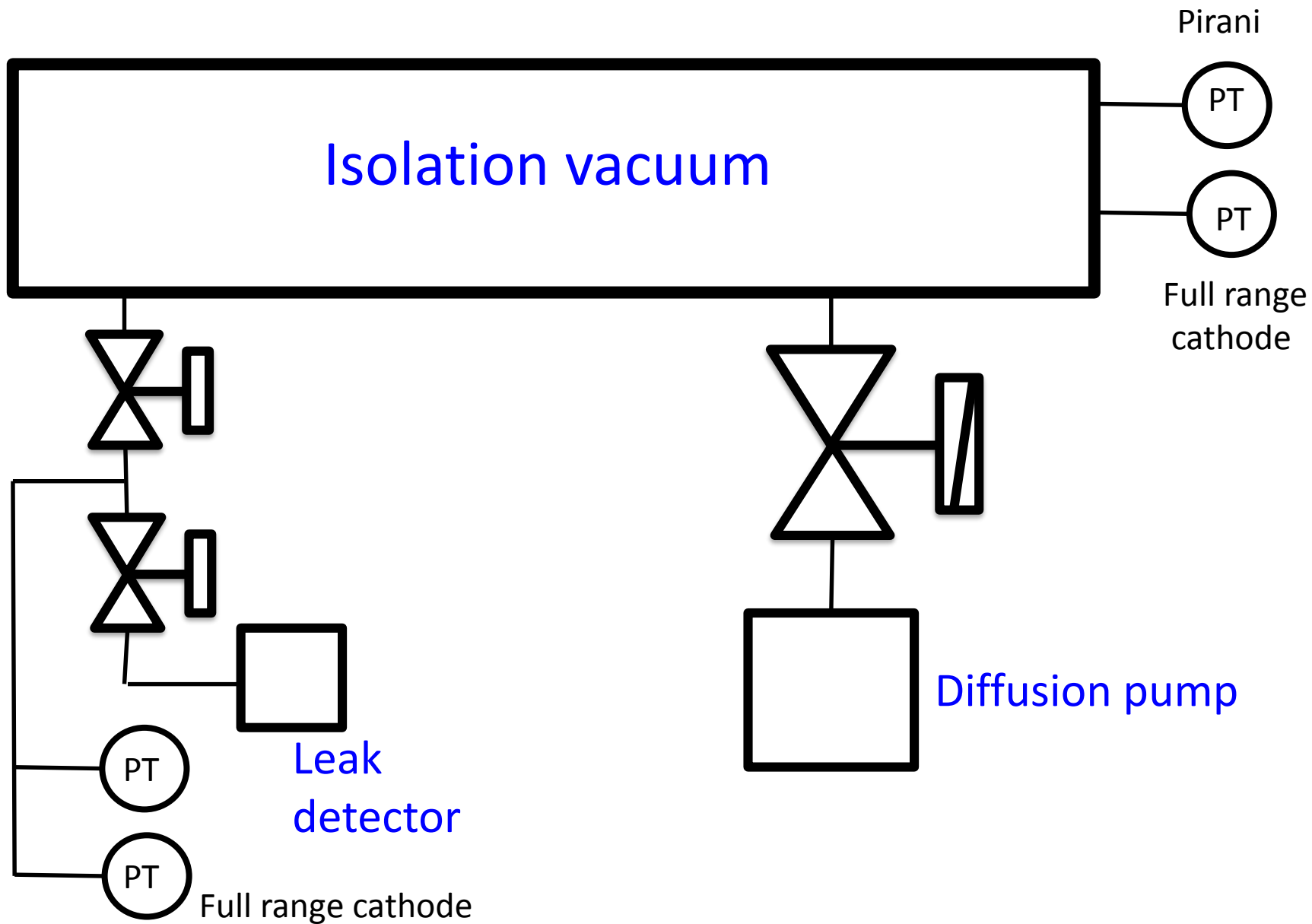
- Signal cables on Jura side: 14,15/11
- Power cables : 16/11
- Transport new PLC CPU rack : 15/11
- Cables for PLC CPU to new places : 15/11
 - PLC CPUs in the bunker 28/11
- He flow meters maintenance 27/11
 - 3 weeks
- Emergency buttons (AU) tests with EN-EL 28/11
- Information exchange with Sylvain
 - 5 weeks commissioning :
 - new MSS system
 - new current read card
 - new procedure

Isolation vacuum leak check 1

- New leak detector : prepared by Kaori and Hikari
 - Connected isolation vacuum gauges to DCS : prepared by Christophe and Jaakko
 - 15/11 Diffusion pump started
 - 16/11 : First leak check of downstream flange
 - no leak found : BK 2×10^{-10} mbarL/s at 5×10^{-4} mbar with magnet gauge
 - no leak found : BK 8×10^{-11} mbarL/s at 4×10^{-5} mbar with magnet gauge
- Installation of hadron absorber (20/11 – 23/11)

Isolation vacuum leak check 2 (Eric, Yuri)

- 22/11 14:15 started rotary pump
- 22/11 17:00 3.9×10^{-2} mbar
- 23/11 10:00 started diffusion pump
- 23/11 14:00 1.5×10^{-4} mbar
 - performed leak check (BG 1×10^{-10} mbarL/s)
 - small spike signals (up to 4×10^{-10} mbar)
- 24/11 9:00 3.5×10^{-5} mbar
 - performed leak check of microwave guide ports
 - closed diffusion pump valve
 - found leak around o-ring seal
- 24/11 15:30 stopped diffusion pump and broke isolation vacuum
→ for movement of PLC CPU
- 29/11 no leak from He vessel to isolation vacuum



New air conditioner at pump room



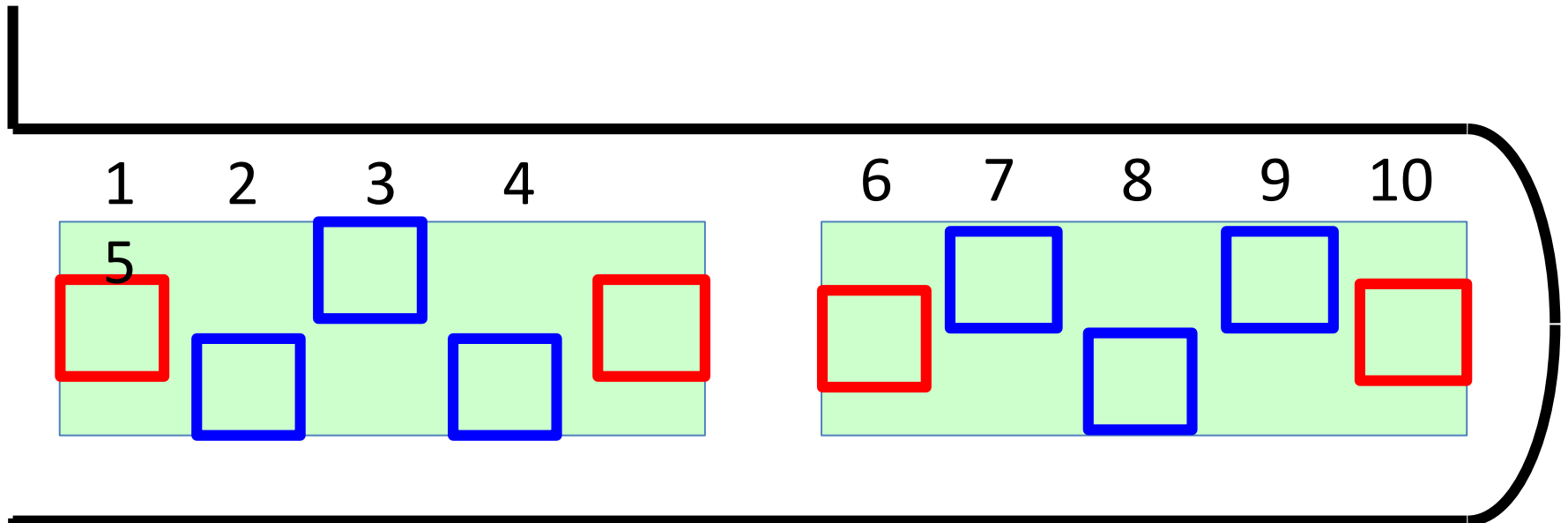
Cleaned up in the clean room

14/11 : started and last for 3 weeks

7/12 : modification of cooling water line

→ stopped isolation vacuum

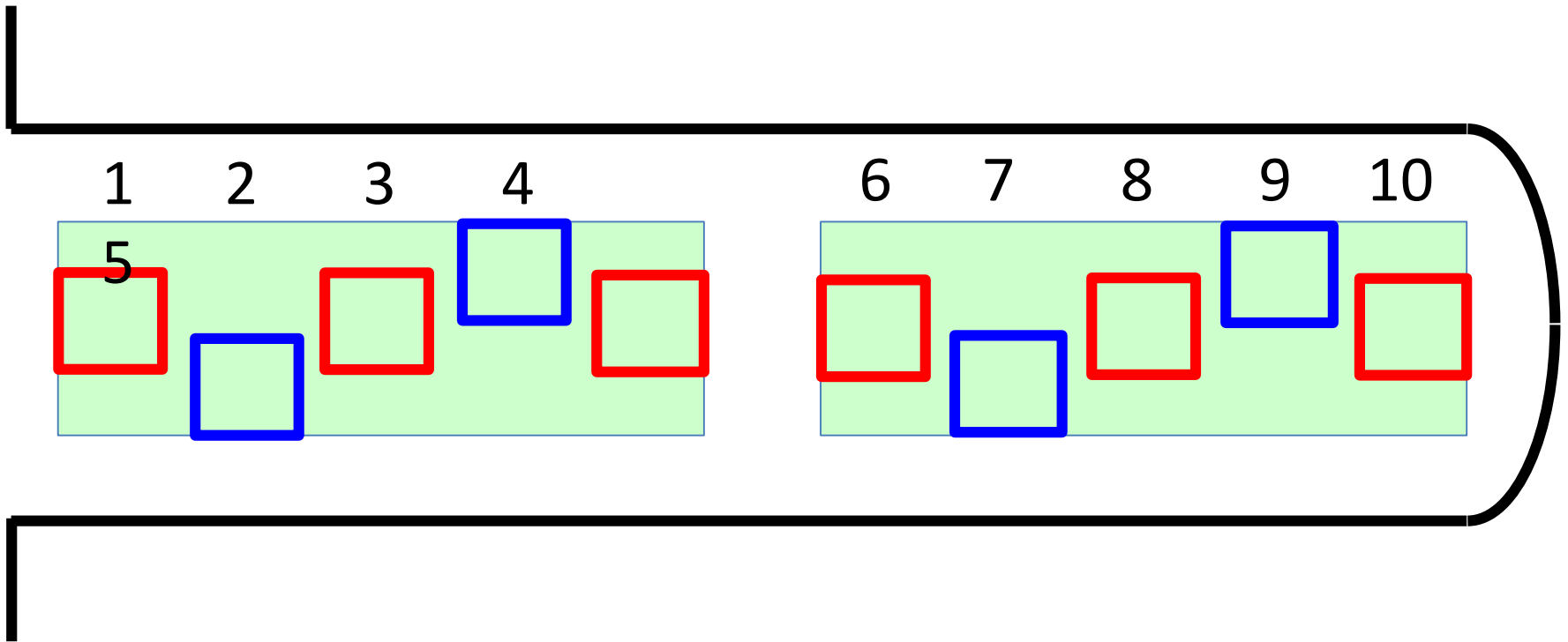
NMR coils location in 2015



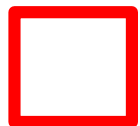
 Inside

 Outside

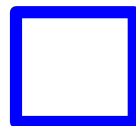
Proposed NMR coils location in 2018



NMR coil



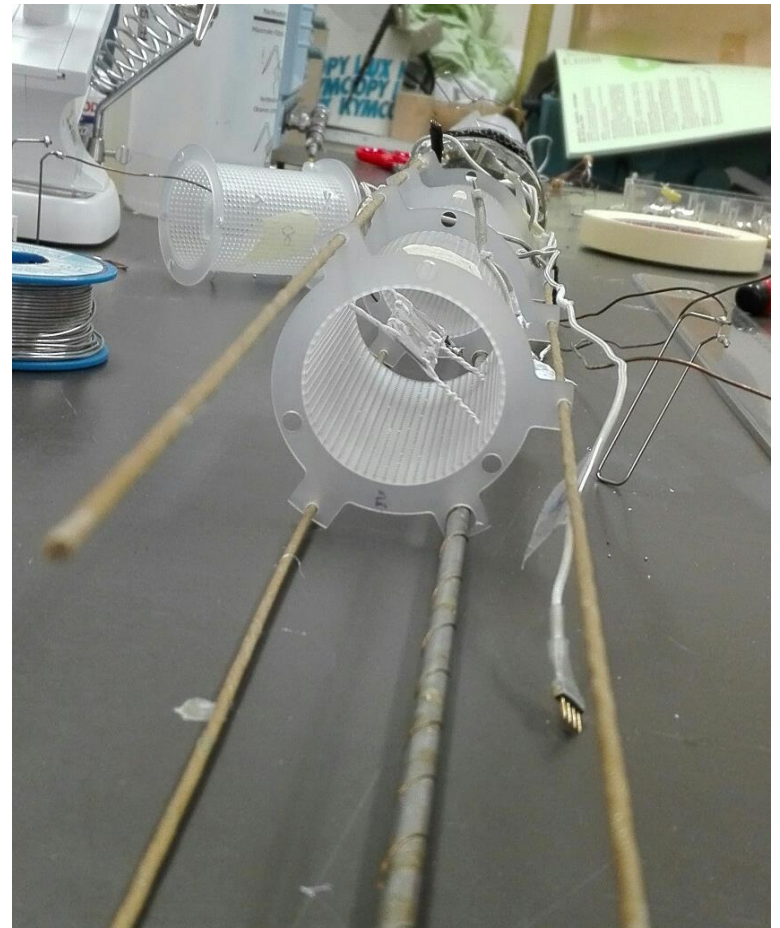
Inside



Outside

Target cell (Kaori)

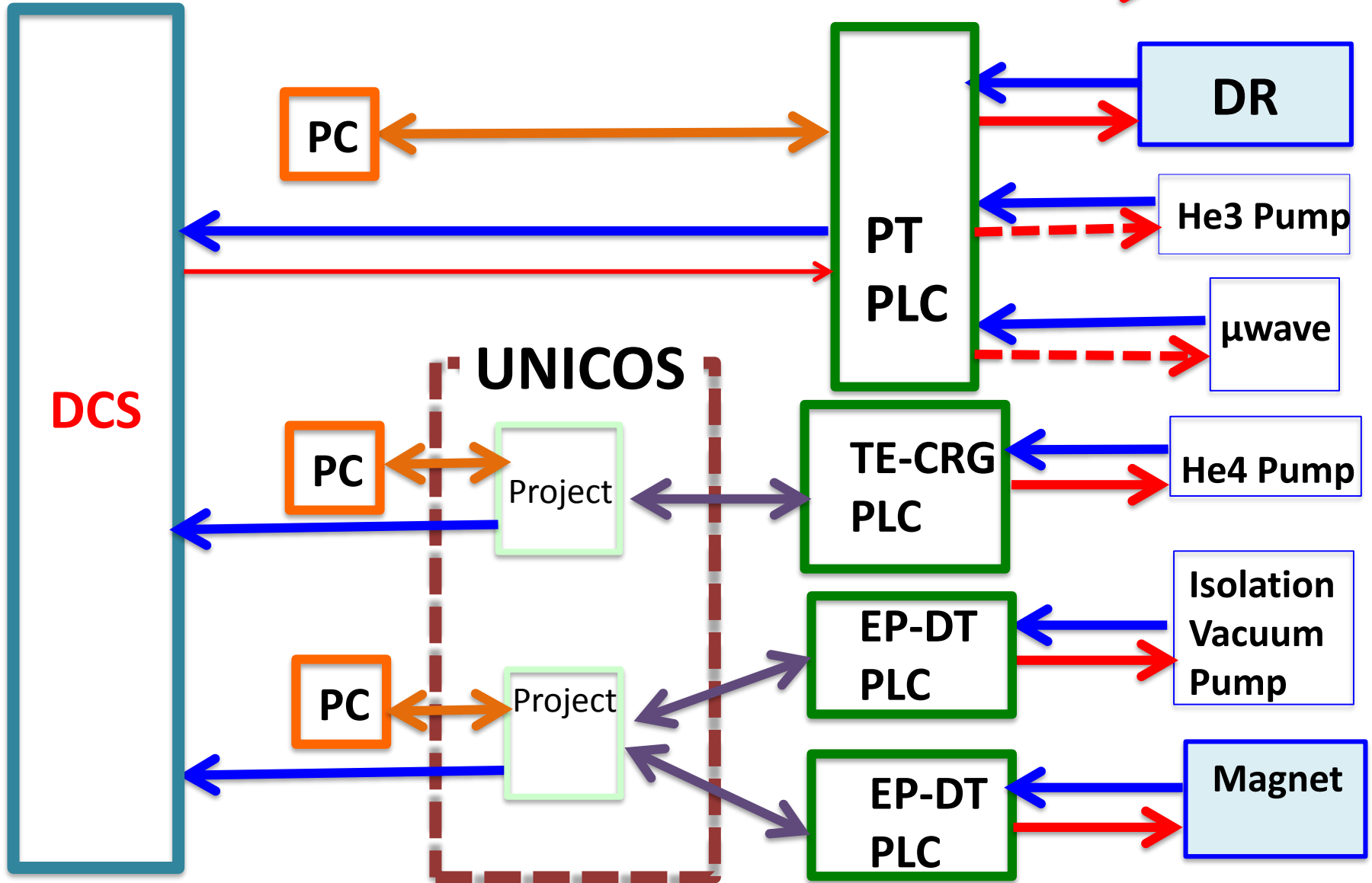
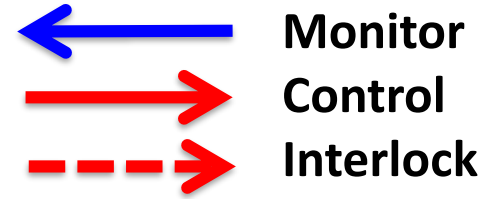
- Disconnection of the downstream target cell
- Coil 8 installed
- Connection check by oscilloscope



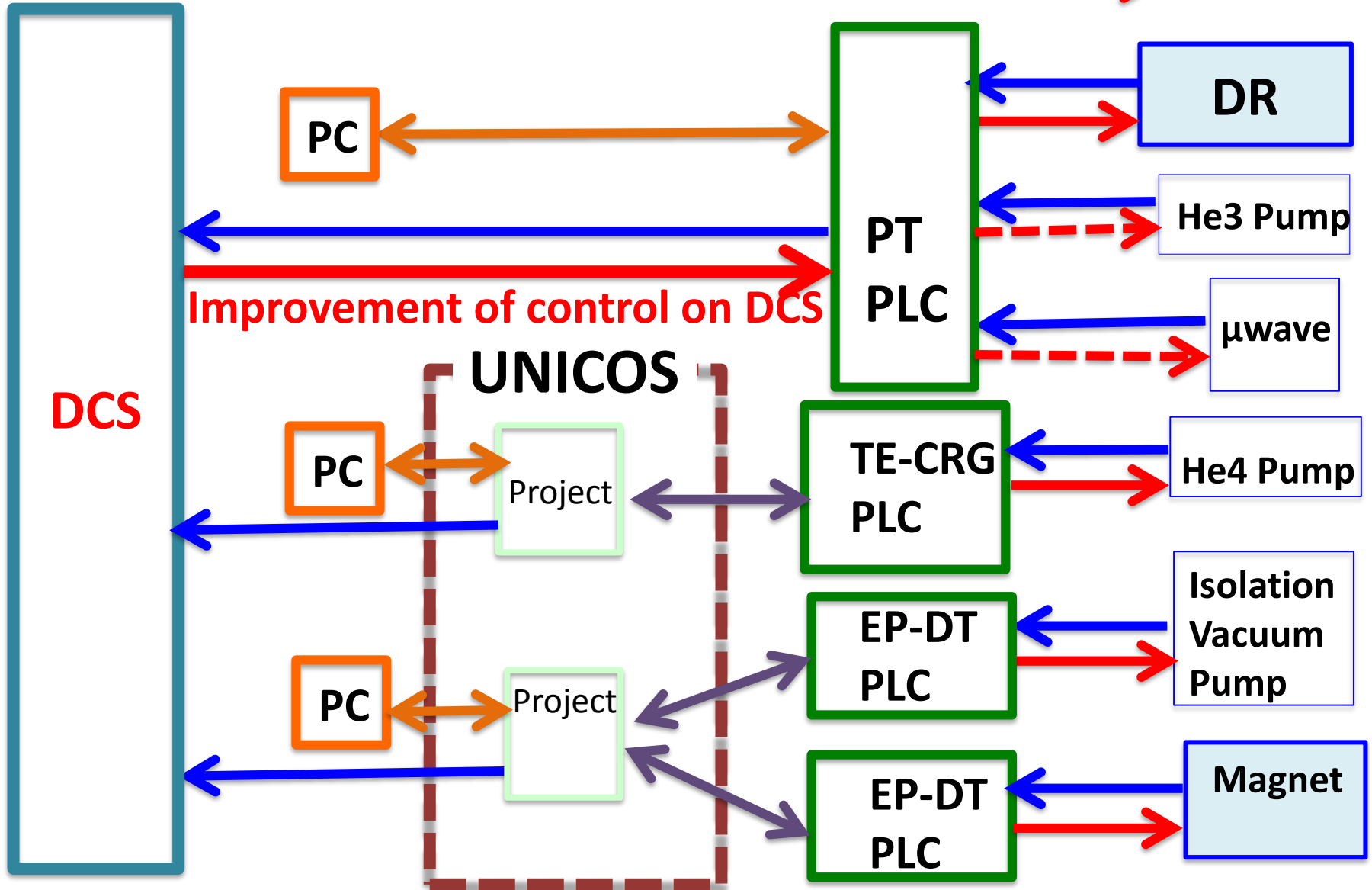
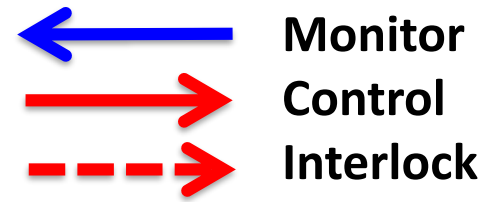
Improvement of PT PLC system

- PT PLC (Siemens S7-300) since 2002
 - supported until at least 2020
 - S7-1500 after S7-300
- Hard disk broken
 - recovering from the PLC CPU :
 - main program : success
 - touch screen program : on going
 - DB information : lost → immigrate old DB and update manually
- Improvement of control from DCS for run 2018
- Immigration to UNICOS framework
 - UNICOS produced by CERN
- Rules of UNICOS framework
- Support of Christophe : **important**

PLCs for PT system (2015)



PLCs for PT system (2018)



PLCs for PT system (2021)

