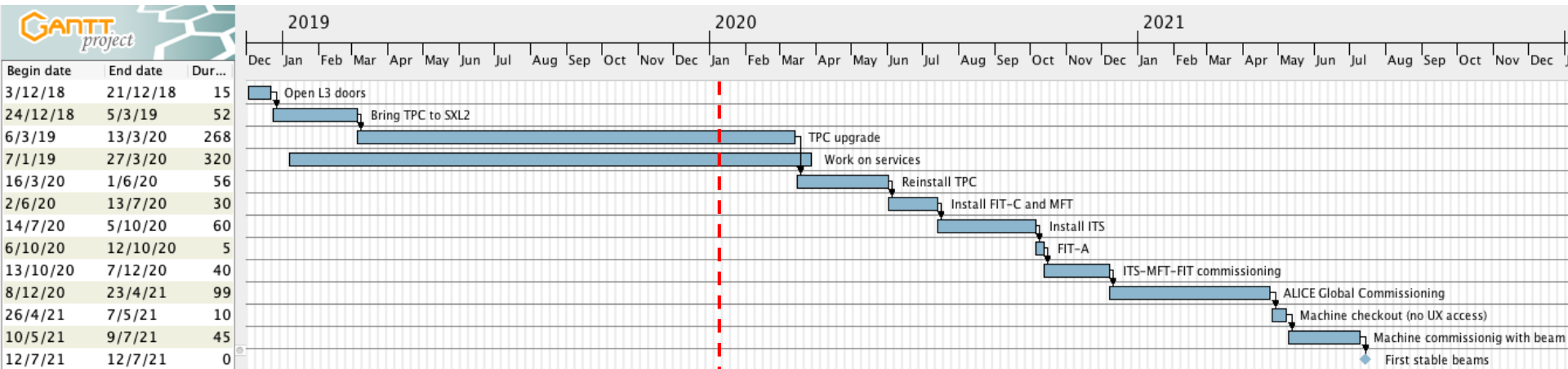


LS2 planning meeting

A.Tauro



LS2 master plan (v34)



Key dates

Activity	Date
Move TPC to UX25	17 Mar 2020
Move TPC to IP	7 May
Install Miniframe	28 May
FIT-C & MFT installation	2 Jun
ITS installation	14 Jul
FIT-A installation	6 Oct
ITS & MFT commissioning time	8w
ALICE global commissioning time	20w
End of LS2	23 Apr 2021

EN-EL interventions

- 18kV, 3.3kV and LV network maintenance:
 - Mon 20 to Wed 22 Jan 2020: 3 days no general services - **no access on site (both surface and underground)**
 - **SG2 will not be cut (repowered in the same way as SX2 and CRs)**
 - **Cooling plants will be cut (as they are powered from serv.gen.)**
 - SX2, CRs and ACR will not be cut (repowered from 66kV)
 - CR0 will not be cut as it is powered from machine network
 - Racks in the cavern will not be cut, water circulation will not be stopped
 - **Access possible for ALTEAD (SX2), EN-EA (miniframe), P2tech (SX2)**
 - Thu 23 to Fri 24 Jan 2020: 2 days “Limited access”
 - Normal power in SXL2 (including cranes, lights and wall outlets)
 - Gas and cooling systems will be running
 - **Access possible for TPC (SXL2), ALTEAD (SX2, SXL2), EN-EA (miniframe), P2tech (SX2, SXL2)**
- AUG on Monday 27 January 2020 - **no access on site (both surface and underground)**
 - **All equipment should be switched off on Friday 24 PM latest**
- Auto transfer test: 27-29 Apr 2020
- Test secours (10 min at 6:00 AM): 26 May 2020
- BIW test: 5 and 6 Oct 2020 from 18:00 to 00:00 – **no access underground**

Racks status

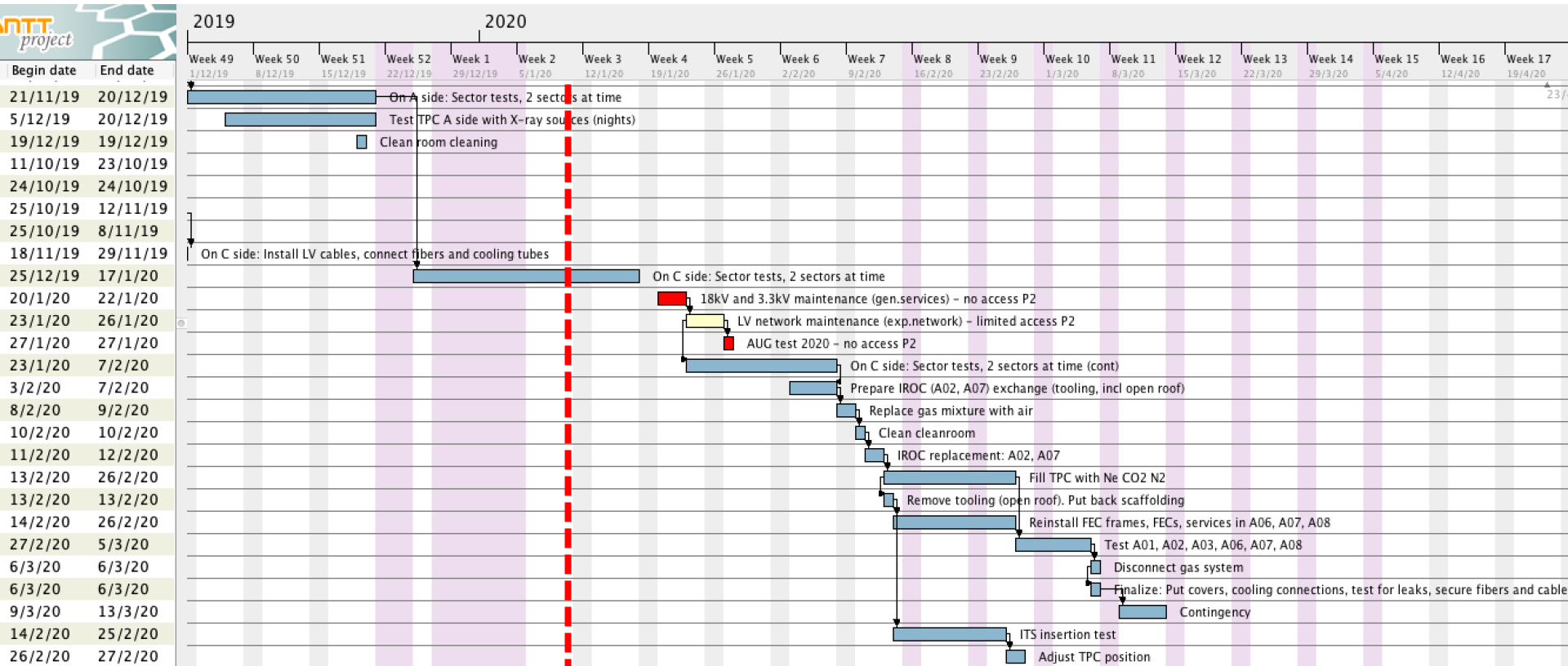
- Racks currently powered on:
 - HMPID racks
 - PHOS-CPV: A16, A17
 - CTP: C24, C25 (CTP) (and VME crates on)
 - MCH: C08, C10, C37, C39
 - TOF: O03, O04, O05, O30, O31, O32
 - TOF: I03, I04, I05, I30, I31, I32

EN-CV interventions

- **Big maintenance:**
 - SF: from Nov 2019 to mid Jan 2020. NO impact on ALICE as both magnets will be OFF.
 - ~~UW: stop UX mixed water for 2 days in week 41/2019 (October) — Tue 8 and Wed 9 Oct — done~~
 - SU: various small perturbations + 1 day **stop all cooling UX** + 1 day **stop all cooling SXL2** in week 16/2020 (April).
- **Small maintenance:**
 - UW: from mid Aug 2020 to mid Sep 2020. **Stop mixed water UX** for 1 day in week 37/2020 (September).
 - SF+SU: weeks 45-47/2020: cleaning towers (stop SF 1 week) + 1 day **stop all cooling UX**.
- Renovation transformer UIAC220 in w10/2020 → will stop rack cooling but bypass could be put in place -- TBC
- **Stop demineralized water from 17 to 20 December 2019**
- **Ventilation:**
 - ~~SG2 (2019): w7/2019~~
 - SG2 (2020): Tue-Wed - w3/2020
 - ~~Gas extraction: w8/2019~~
 - ~~UX25 cavern: w2/2020~~
 - MCH and MTG: Mon-Thu - w3/2020
 - L3: to be done
 - ITS: → will be done before end June
- **Raw water:**
 - Test after Apr 2019. Short interruption (1 day), can be used tap water during the test.

TPC upgrade sequence

TPC schedule v40



10.1.2020

LS2 preparatory meeting

TPC upgrade sequence



Remove Services and FEE
(outside cleanroom)



Uninstall MWPC ROC



Install GEM ROC



Install new FEC + test



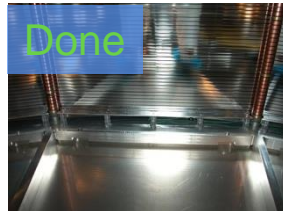
Ready for transportation to
SX2



TPC in cleanroom.
Cleaning & irradiation tests

7 Mar

11 Apr



FC HV infrastructure
modification

25 Apr (A)
5 Aug (C)

13 May (A)
16 Aug (C)



Survey, shimming,
sealing

14 Jun (A)
25 Aug (C)

5 Jul (A)
16 Sep (C)



Pre-commissioning with
cosmic, Laser, pulser, Xray

14 Oct (A)
31 Oct (C)

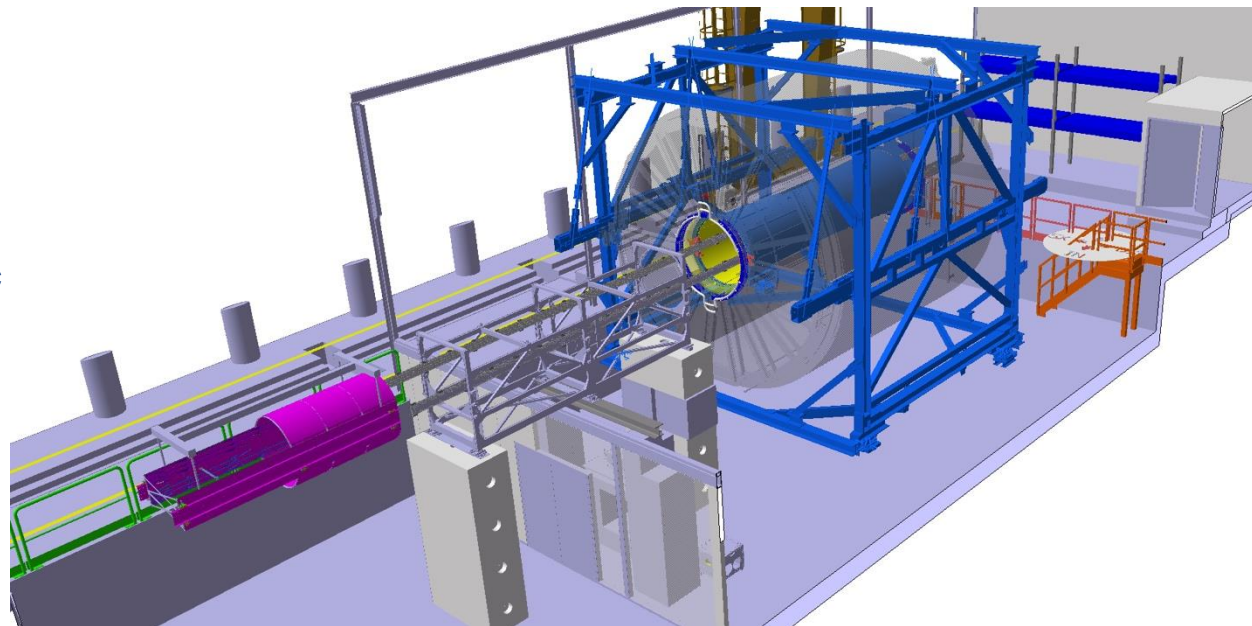
25 Nov (A)
7 Jan (C)

12 Mar 2020

TPC schedule v38

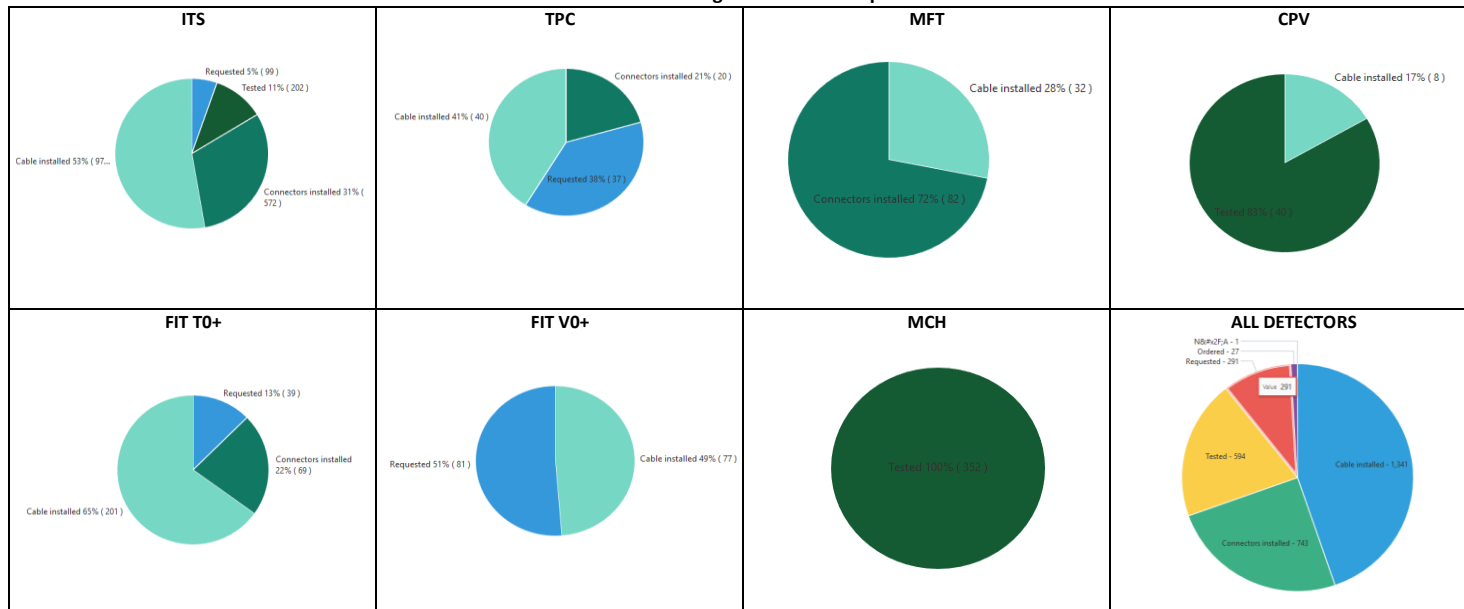
Cage insertion test (January)

- **Goal: test cage insertion and interface with TPC**
- Cage will be inserted from A-side, using ITS table and final rails
- Survey needed
- Open cleanroom roof and back wall – close cleanroom with plastic sheet
- Allow TPC laser operation during C-side test
- **Test planned in weeks 8-9, after TPC ROC exchange**



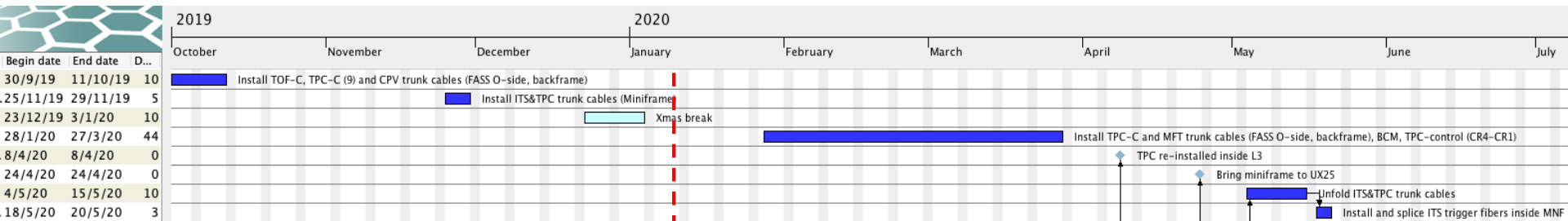
Copper cables (EN-EA)

ALICE LS2 - EN-EA cabling control follow-up 09-01-2020

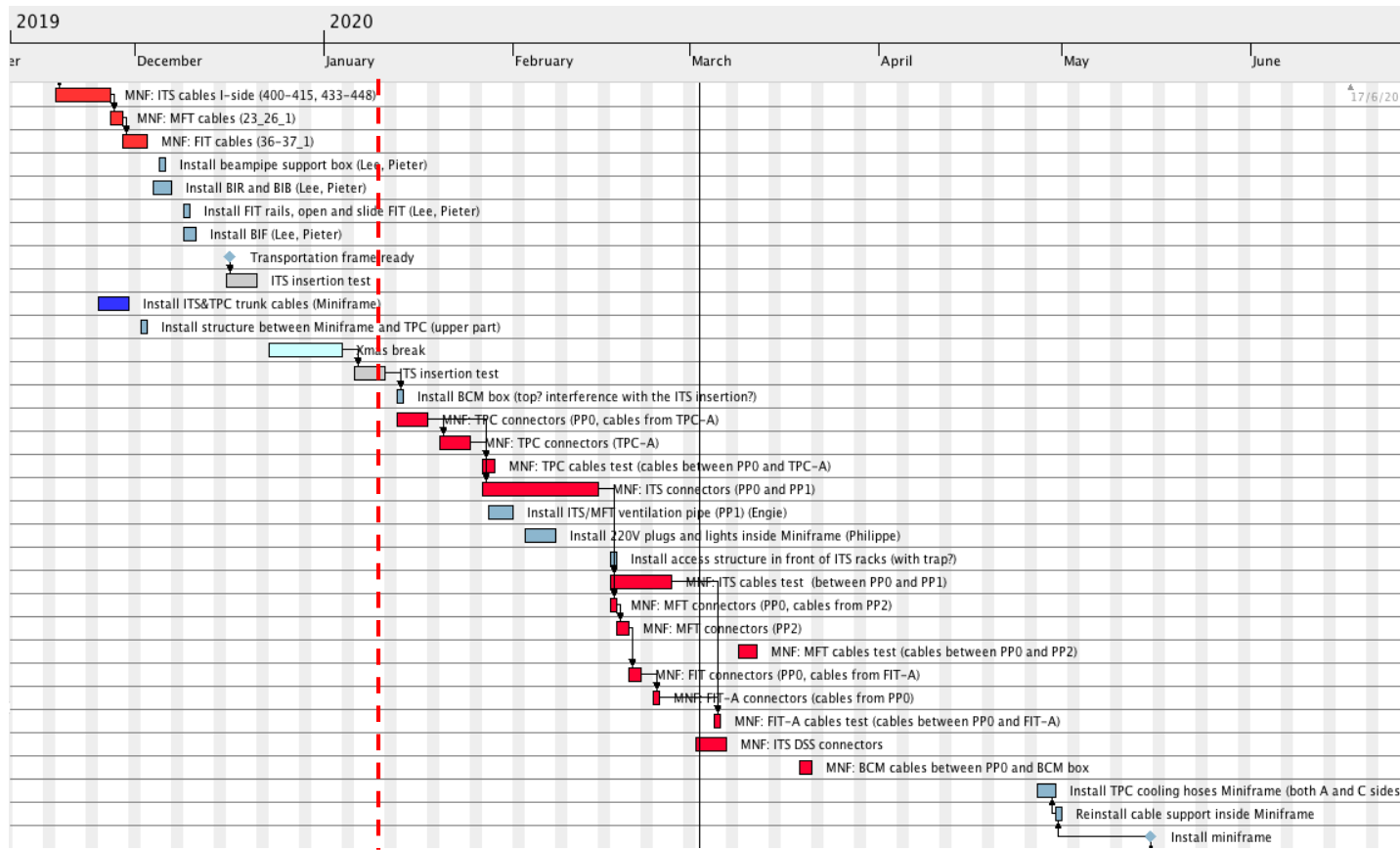


Progress pulling: 90%
Progress connectors: 45%
Progress test: 20%

Optical fibers (EN-EL)

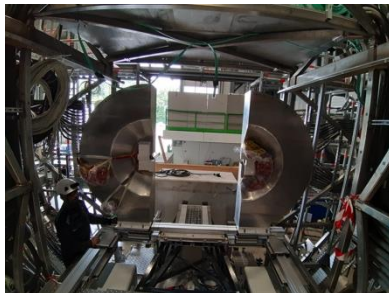
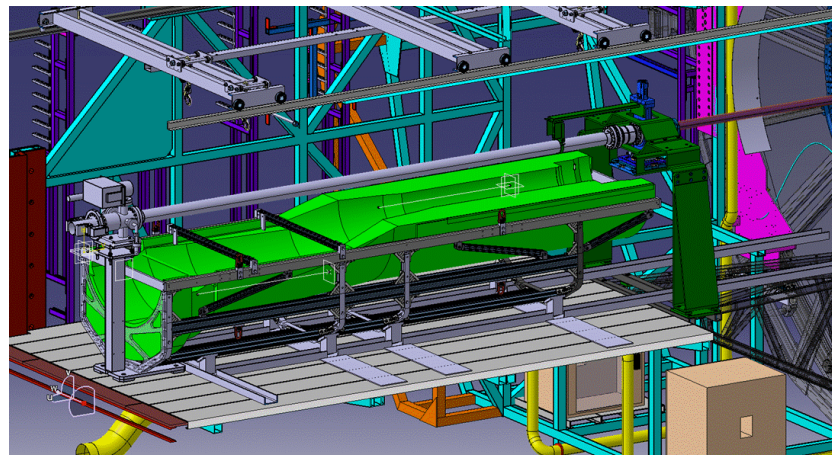


Miniframe schedule

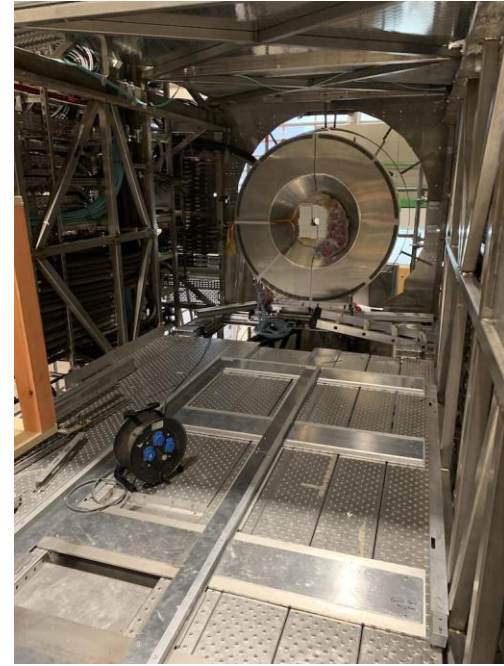


ITS insertion test (inside miniframe)

- **Goal: test insertion of MFT and ITS barrels through the miniframe**
- Empty transportation frame used for the insertion test
- Complexity of the operation due to:
 - Limited longitudinal space available between beampipe valve and compensator magnet
 - Limited crane aerial coverage due to L3 crown
- Various structures being produced and installed: Barrel Insertion Rails (BIR), Barrel Installation Bridge (BIB), beampipe table
- Test planned in w3-4



ITS insertion test (inside miniframe)



MFT cooling plant



MFT
cooling
plant
installation
w3
(next Wed)



Transport activities w2



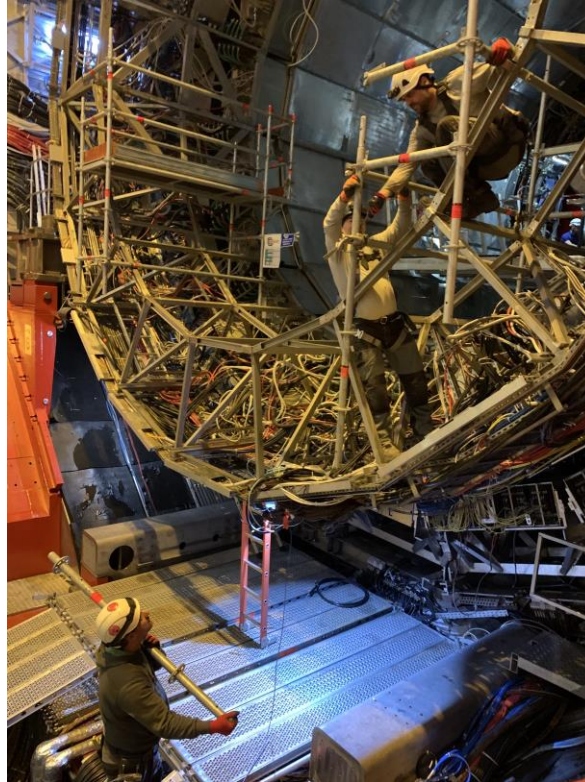
Load test UX25 crane



Preparation
delphi frame
blocks



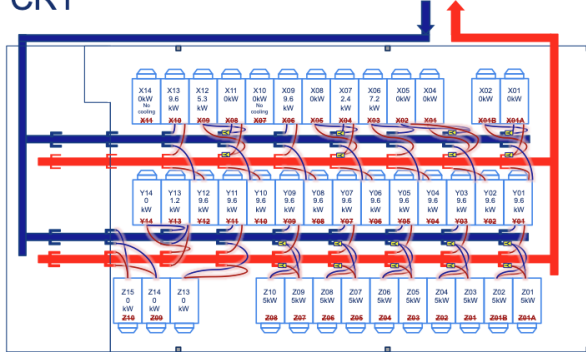
Scaffolding for TPC transfer rails



Installed yesterday

CRs

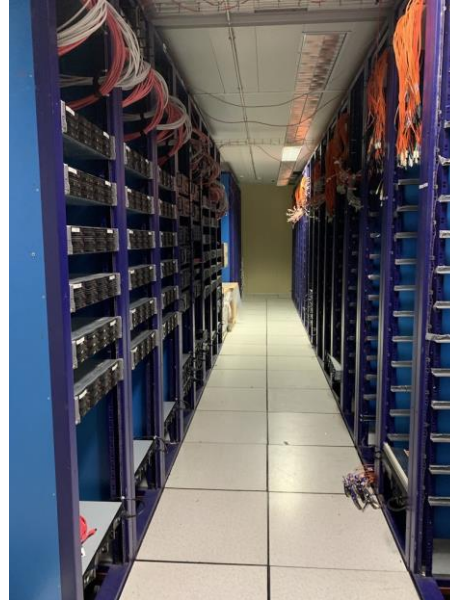
CR1



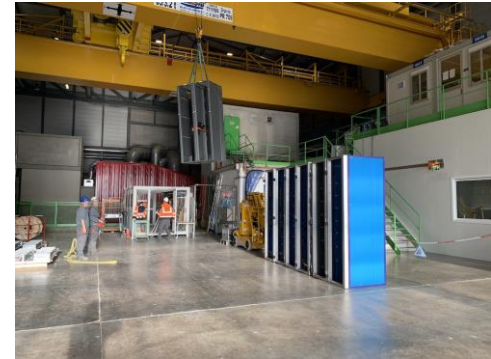
40 racks, total power 180-200kW
Delta T: 5C (max room temperature 23C)

In red old rack names (up to LS1)
One TA Valve for each return pipe (19 in total)

CR1: TA valves, filters, Y parts
and new flexible hoses to be
installed in w3



CR2: ~80 old
RUN1 servers to
be disposed



CR3: X and Y rows emptied.
TA valves to be installed

Safety: installation 2 anchoring points low-beta



Anchoring points will be used to secure personnel when we remove the low-beta fences



Tested @ 1000 DaN (1ton)

Thanks Franck,
Nicolas and Klaus!

Safety remarks – MCH scaffolding



Scaffolding not perfectly straight
To be attached upstairs

→ action Didier Cotte

Kitchen – please avoid this!



Thanks to Philippe Boisseaux-Bourgeois for having cleaned this pot

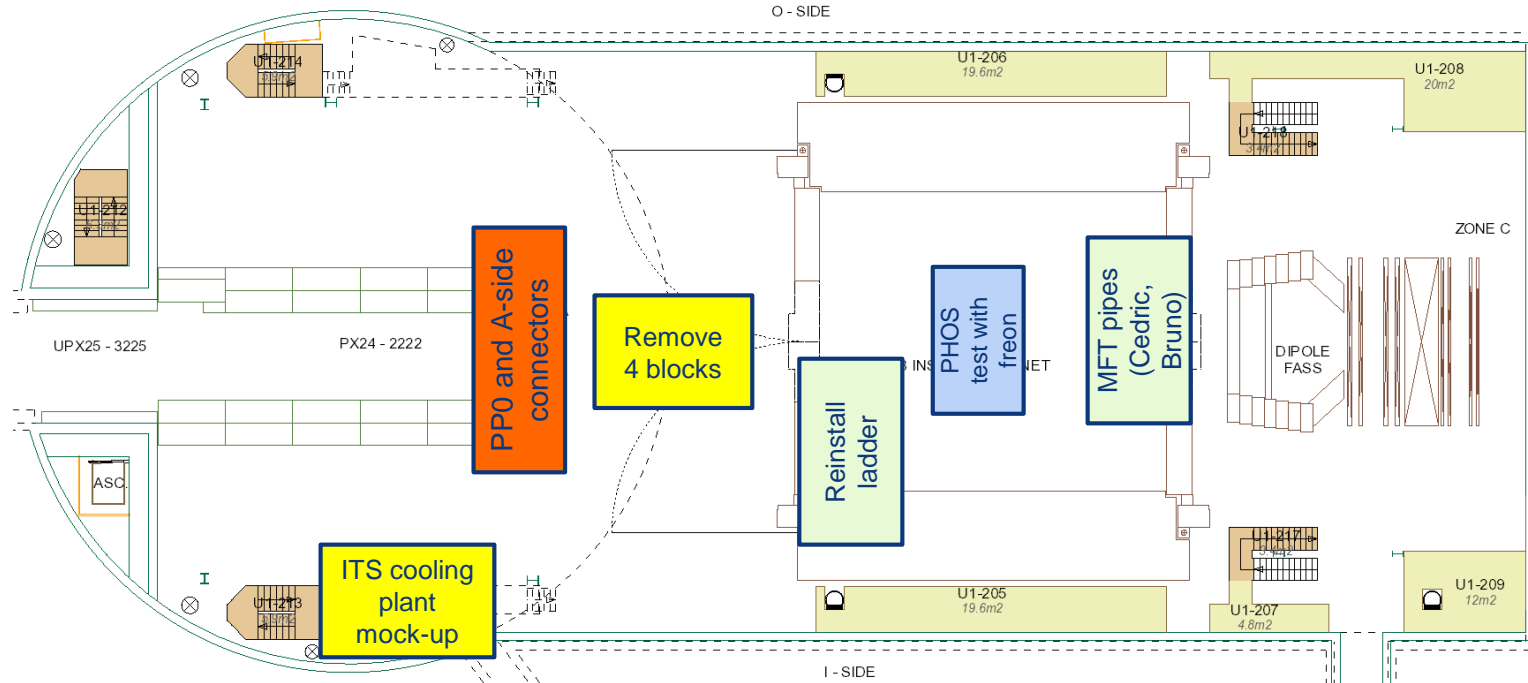
Day-by-day sequence w51



UX25 activities w51 – Mon 16 Dec 2019

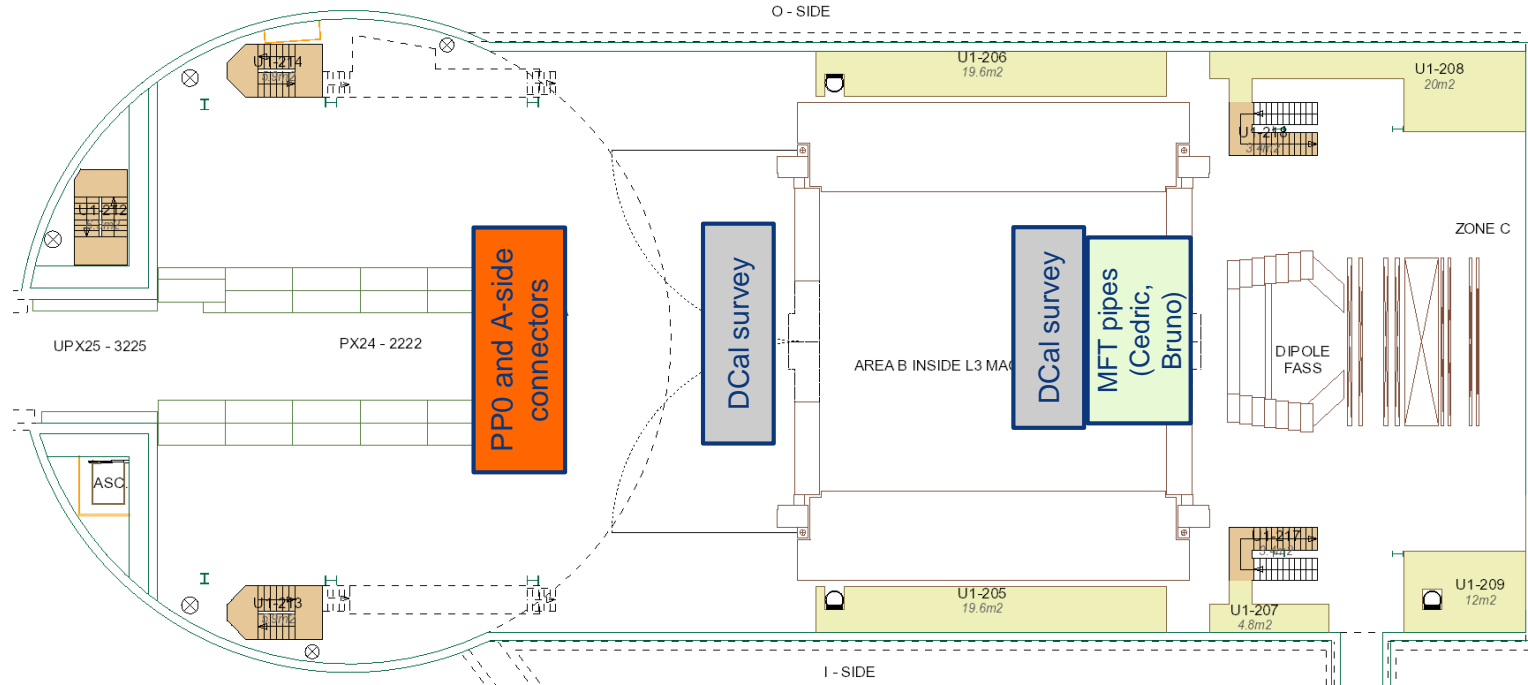
Test SD2 pressurized tank – no access to SD2 after 17:30

Cleaning sniffer tubes (Didier, 10:30)



UX25 activities w51 – Tue 17 Dec 2019

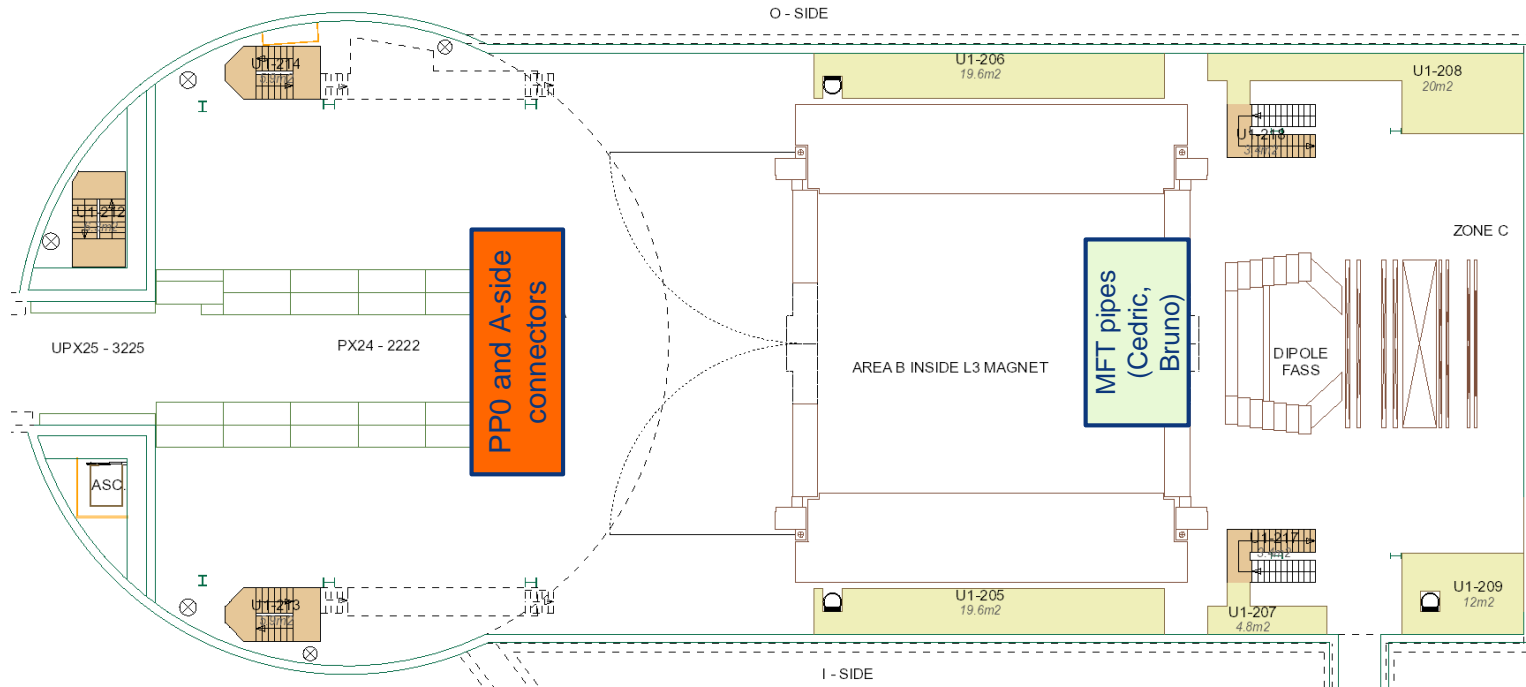
EN-CV: stop demineralized water (17 to 20/12)



UX25 activities w51 – Wed 18 Dec 2019

Various interventions UX25 crane (won't stop the crane)

ALTEAD+P2tech: remove 13 racks from CR3 (PM)

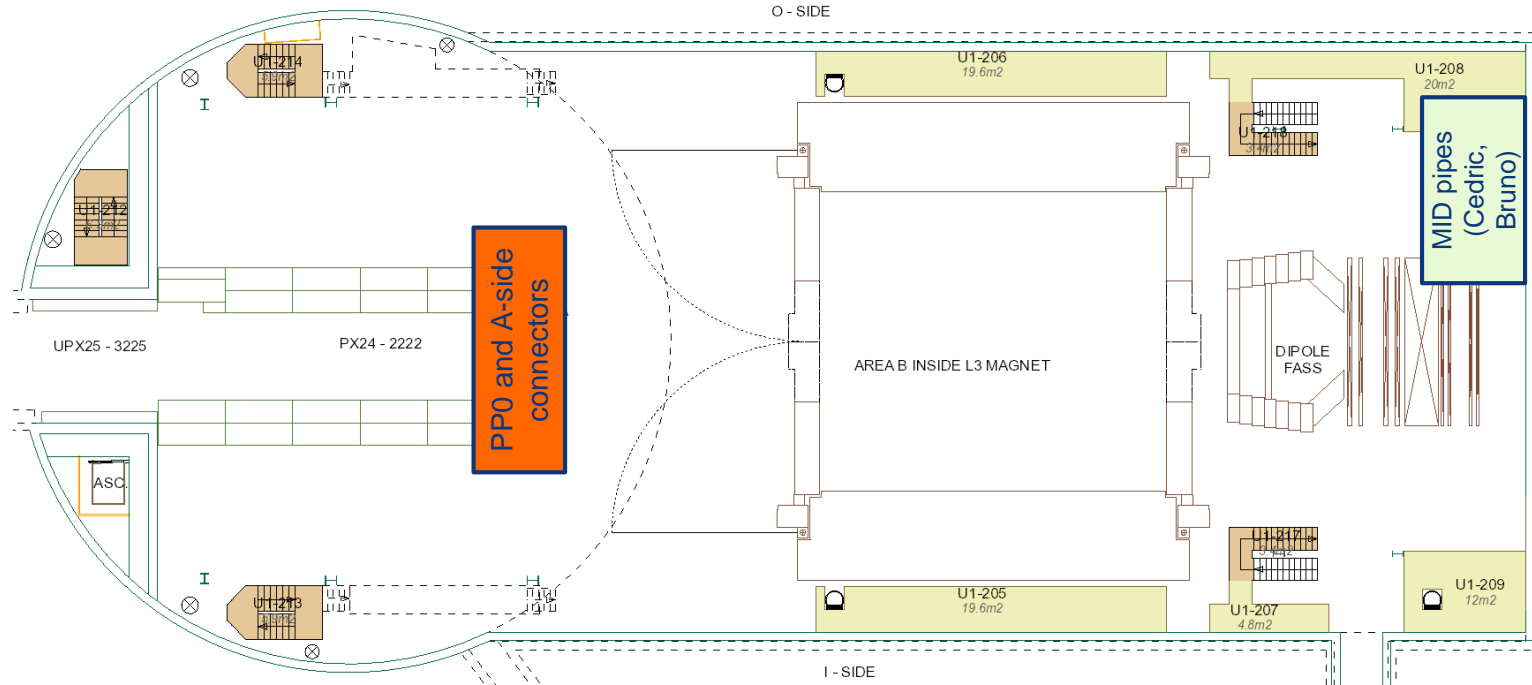


UX25 activities w51 – Thu 19 Dec 2019

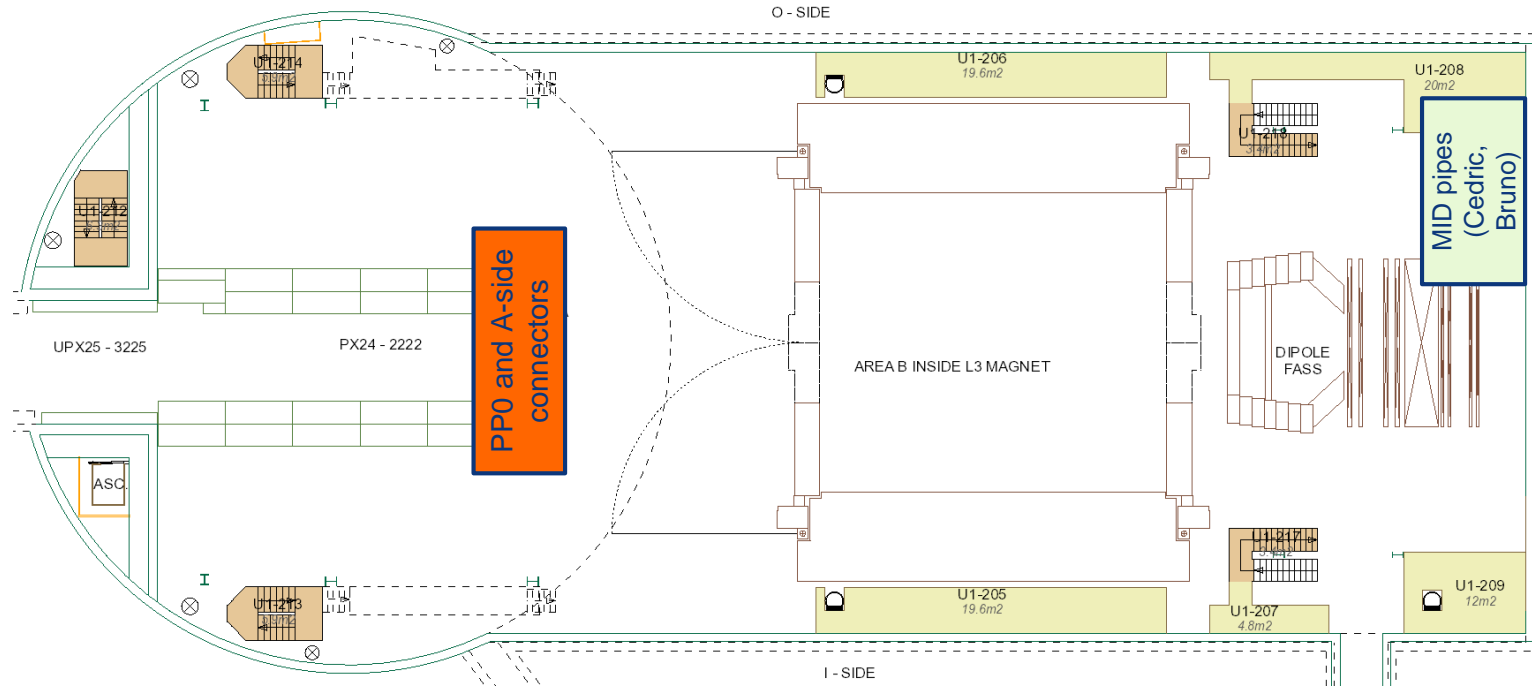
Cleaning cavern (Topnet)

UX25 cavern lift: remove wooden panels

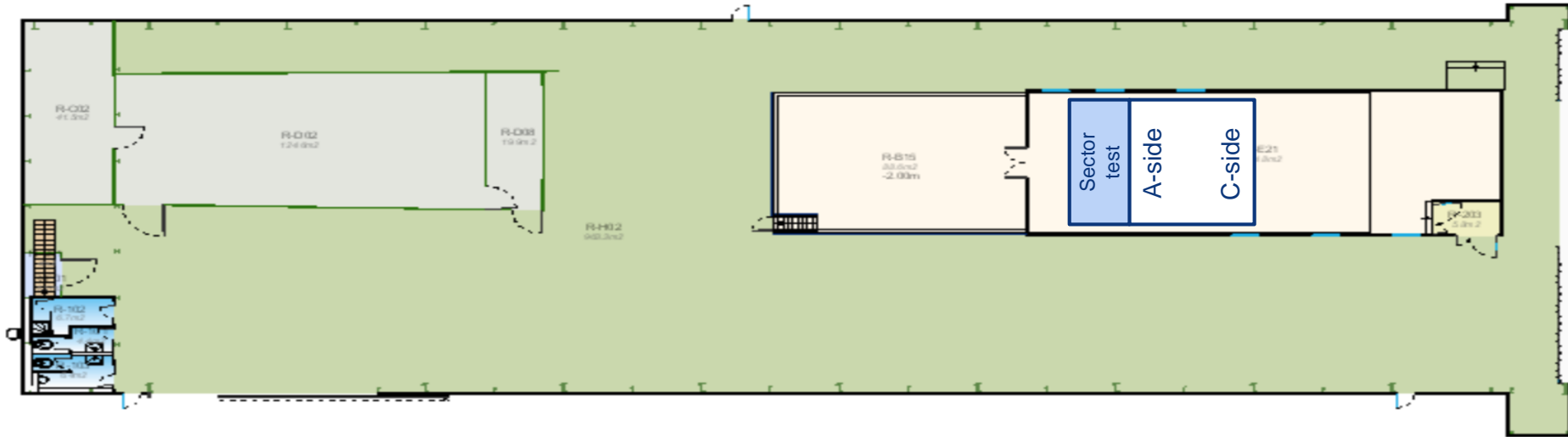
Maintenance SX2 crane



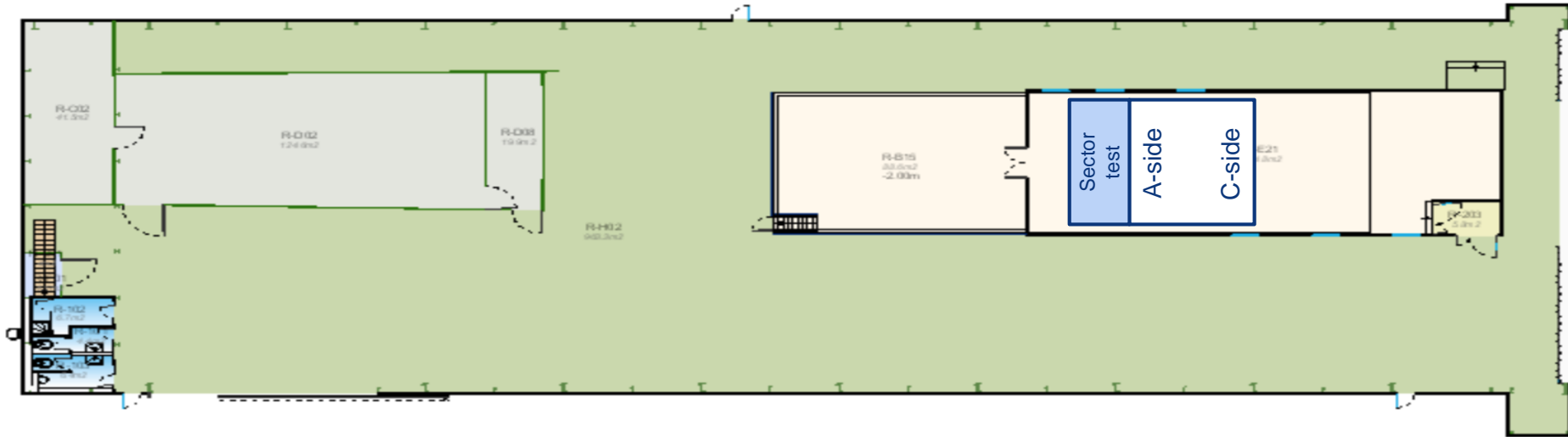
UX25 activities w51 – Fri 20 Dec 2019



SXL2 activities w51 – Mon 16 Dec 2019

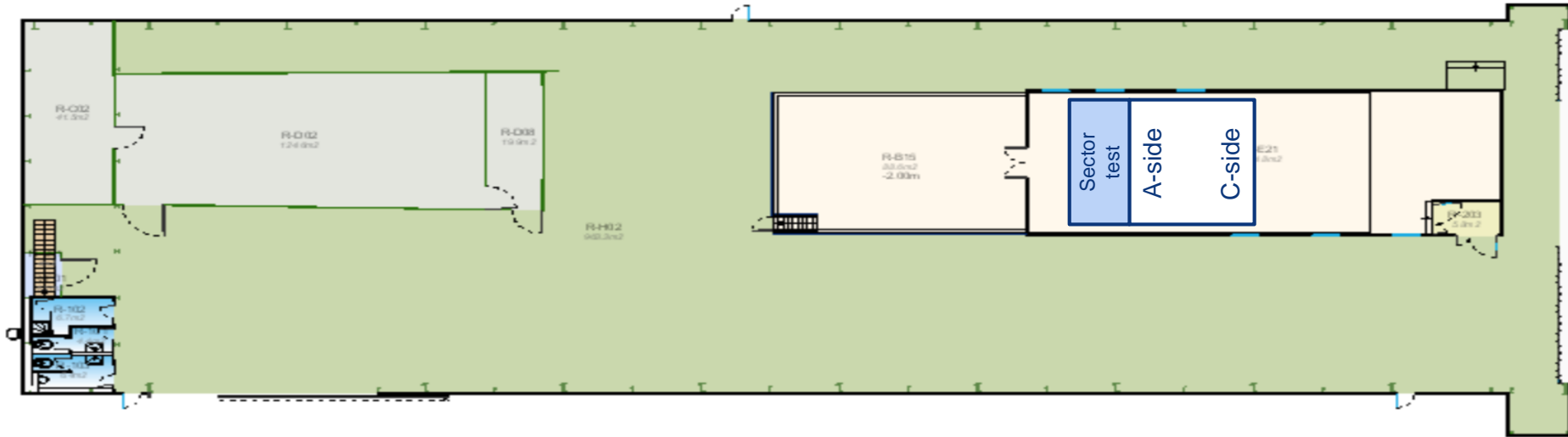


SXL2 activities w51 – Tue 17 Dec 2019

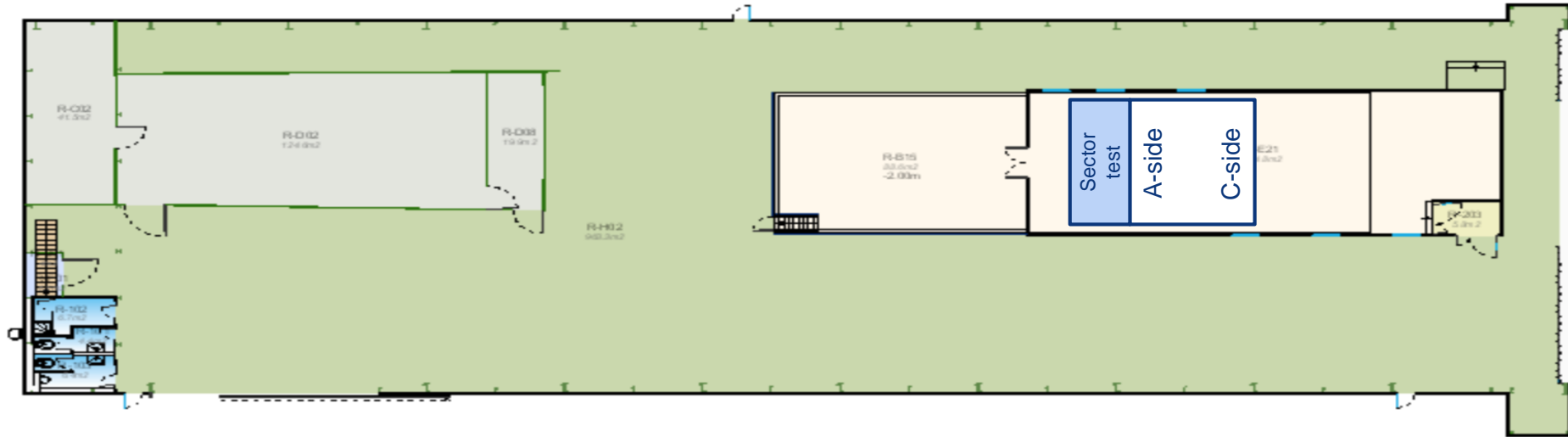


SXL2 activities w51 – Wed 18 Dec 2019

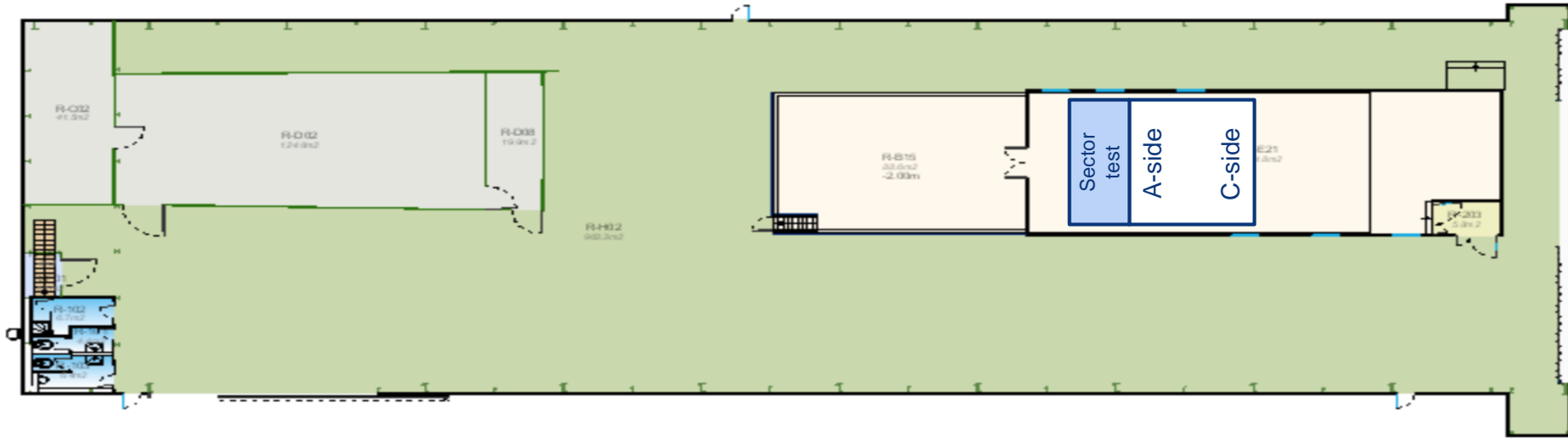
EN-HE+HSE: load test miniframe spreader (SXL2, 9:30)



SXL2 activities w51 – Thu 19 Dec 2019

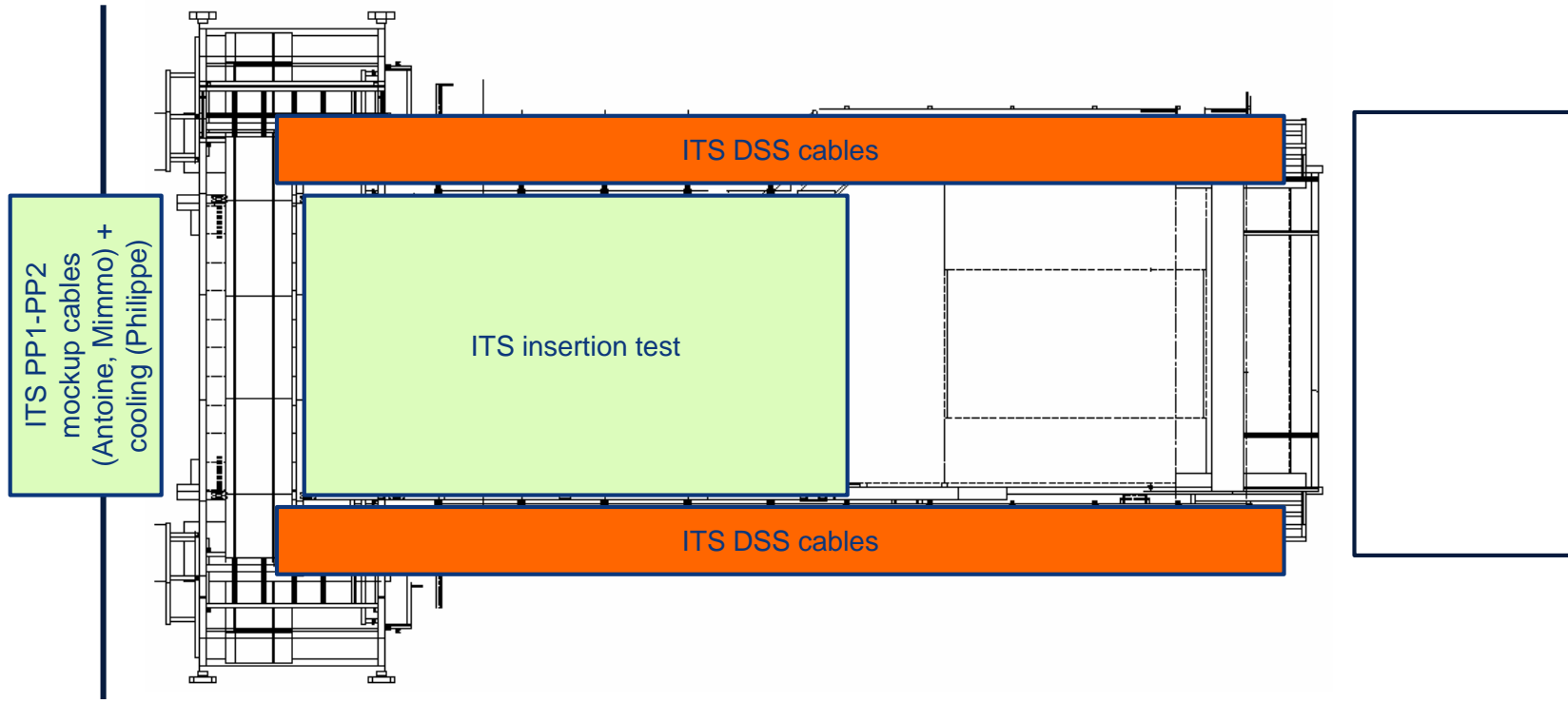


SXL2 activities w51 – Fri 20 Dec 2019

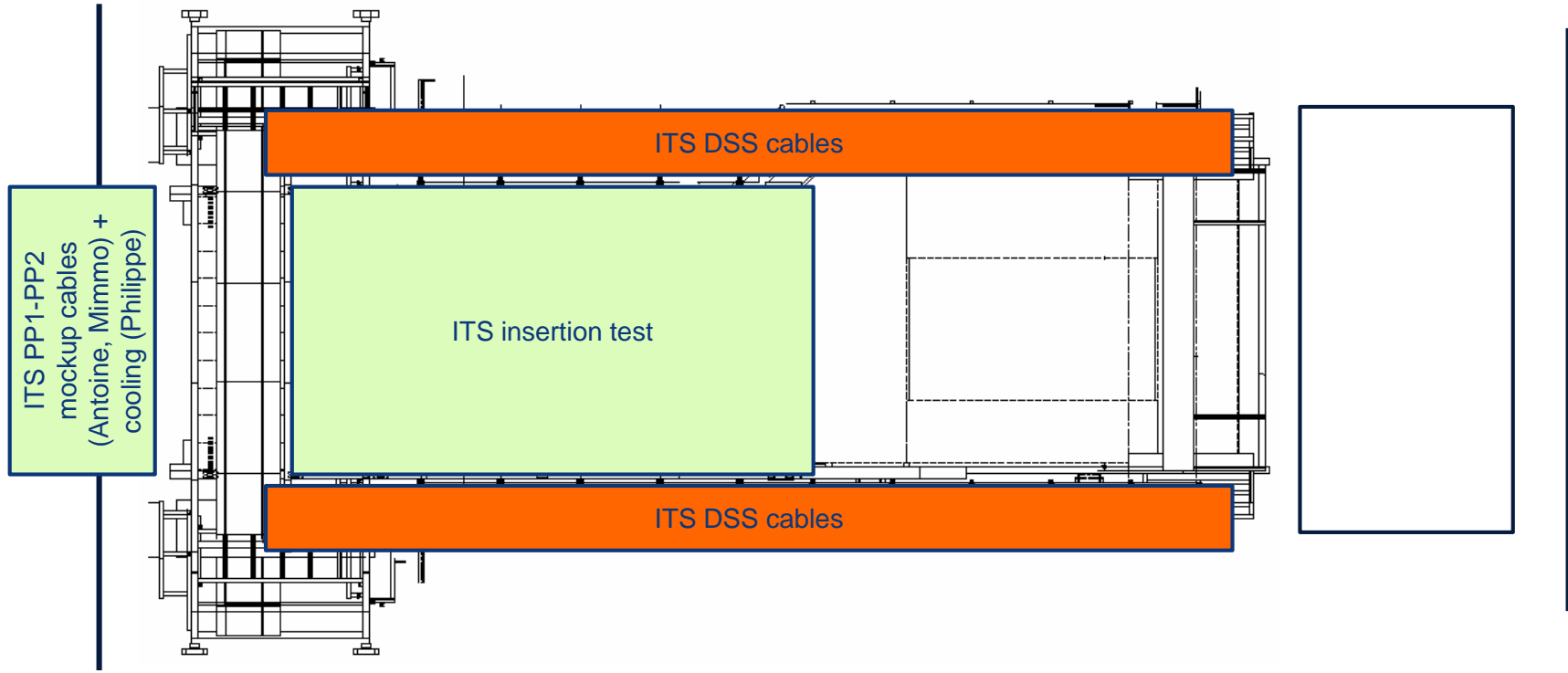


Miniframe activities w51 – Mon 16 Dec 2019

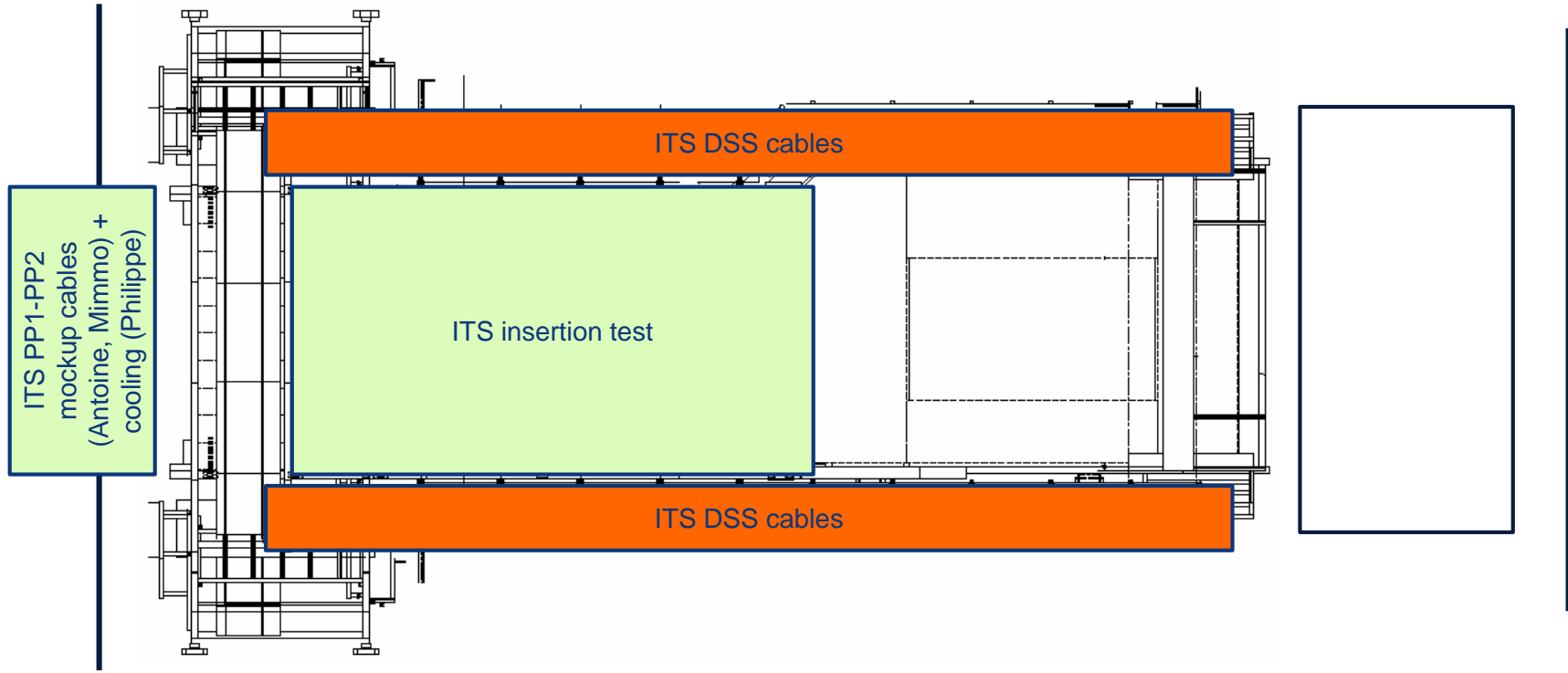
Cleaning miniframe (Elior)



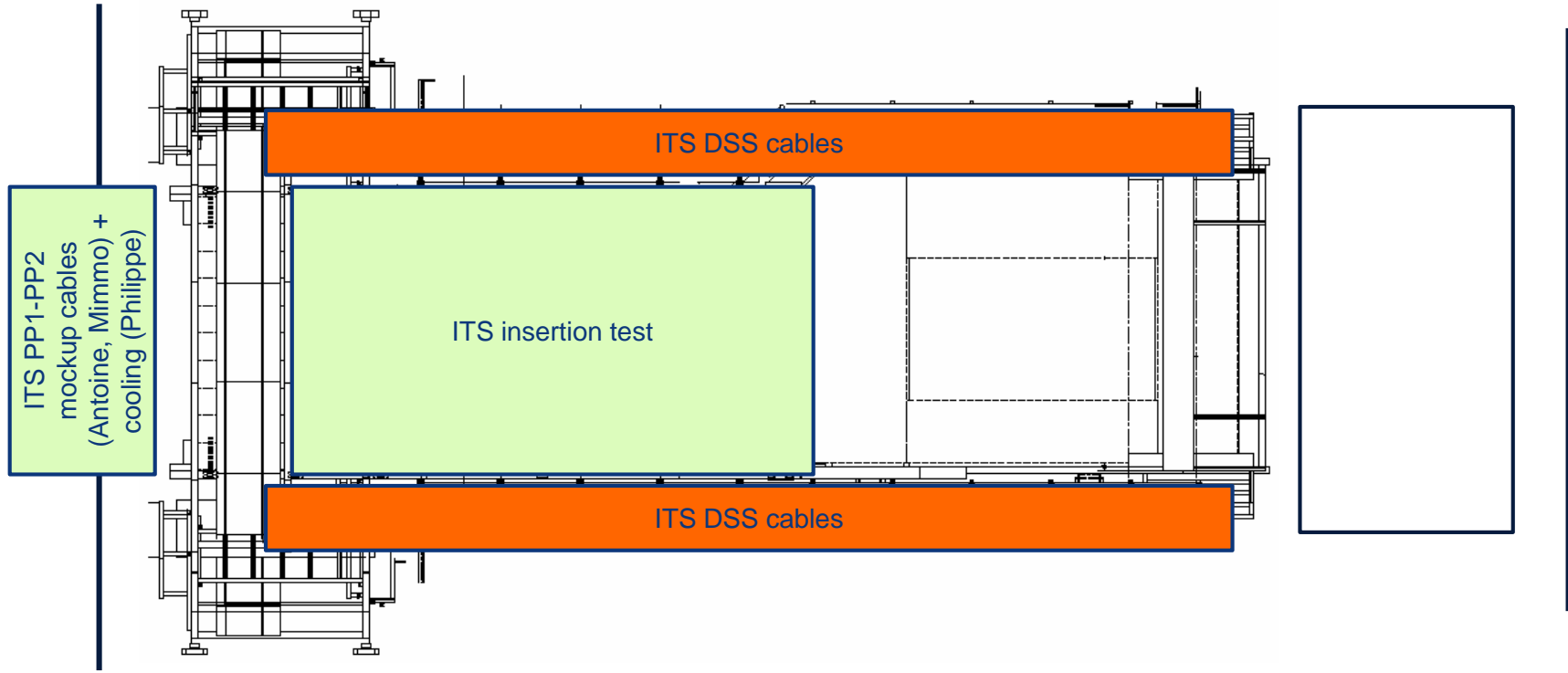
Miniframe activities w51 – Tue 17 Dec 2019



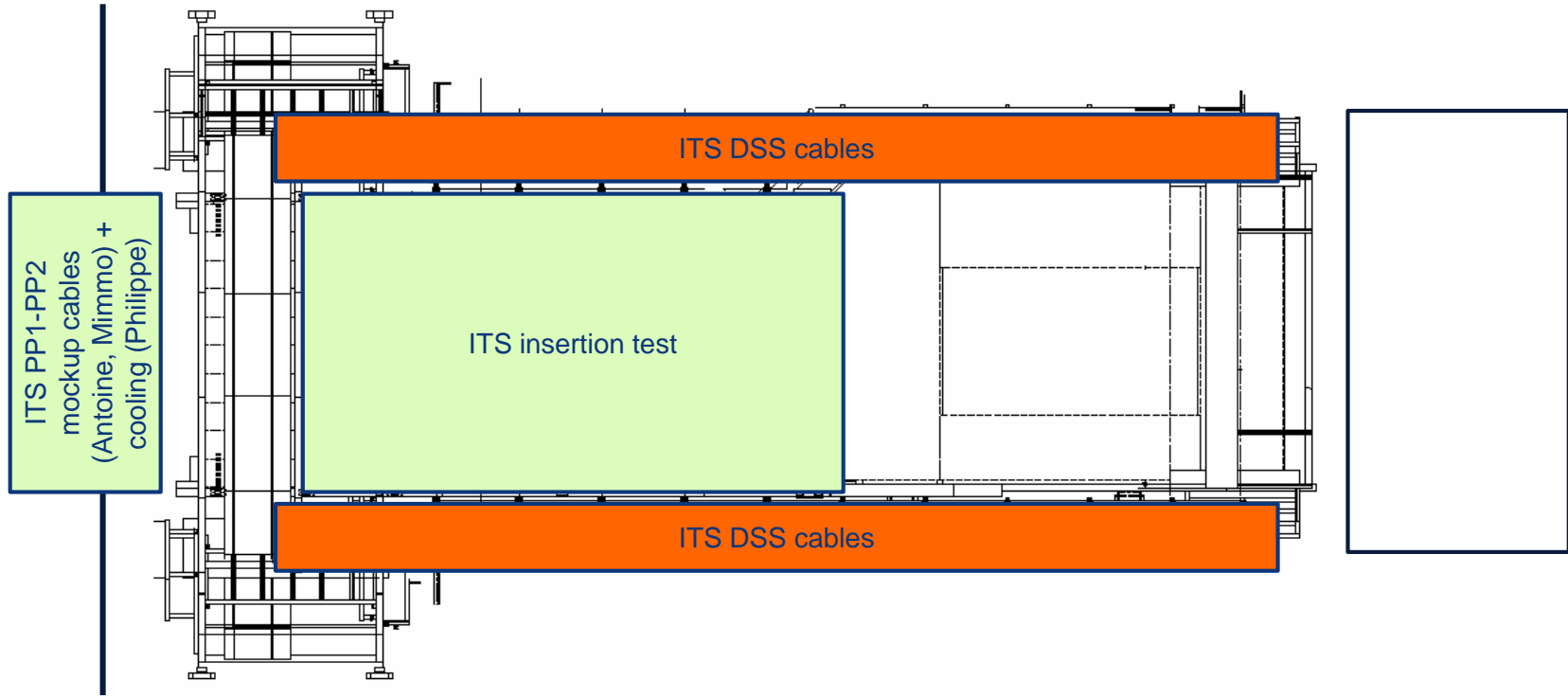
Miniframe activities w51 – Wed 18 Dec 2019



Miniframe activities w51 – Thu 19 Dec 2019



Miniframe activities w51 – Fri 20 Dec 2019



Day-by-day sequence w2

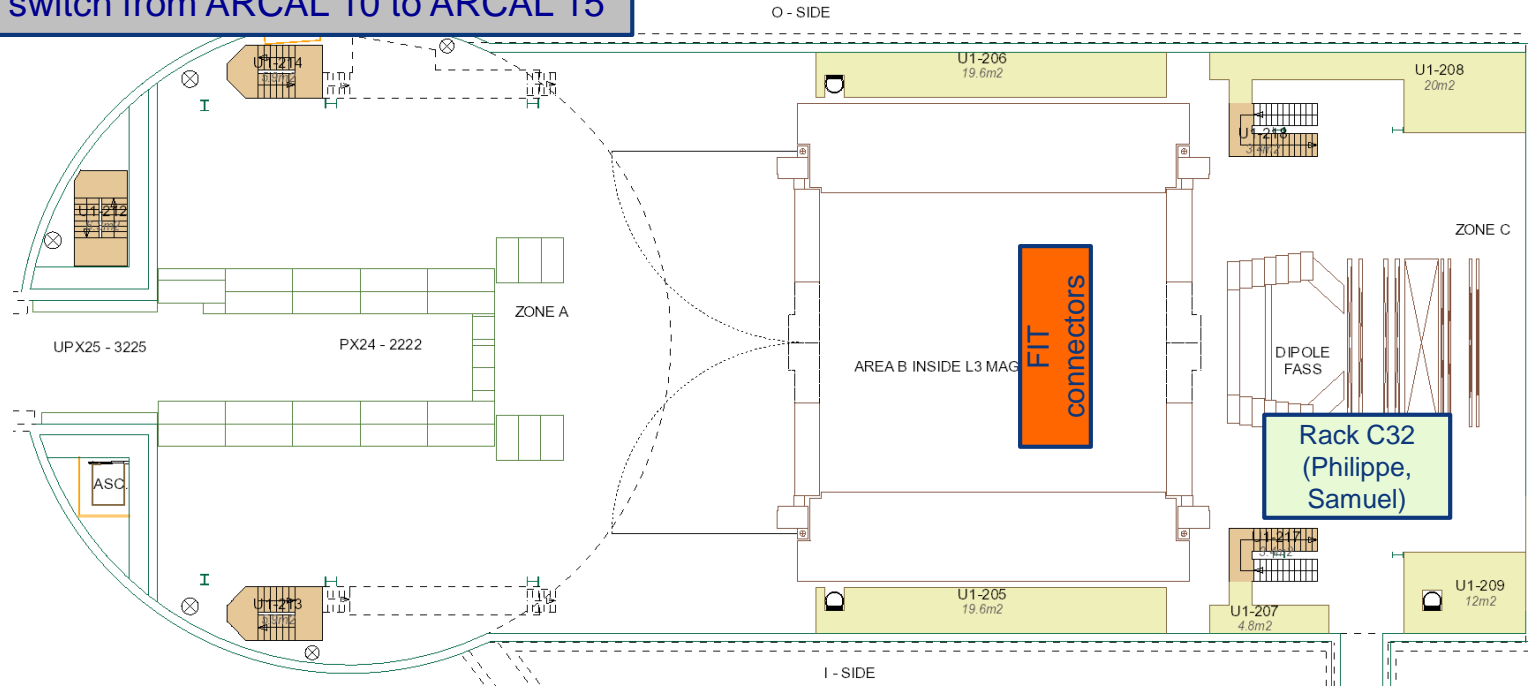


UX25 activities w2 – Mon 6 Jan 2020

BE-ICS: gas detection maintenance (SG2, PX24 and UX25) – Monday to Wednesday

Produce MFT cooling manifolds (Philippe)

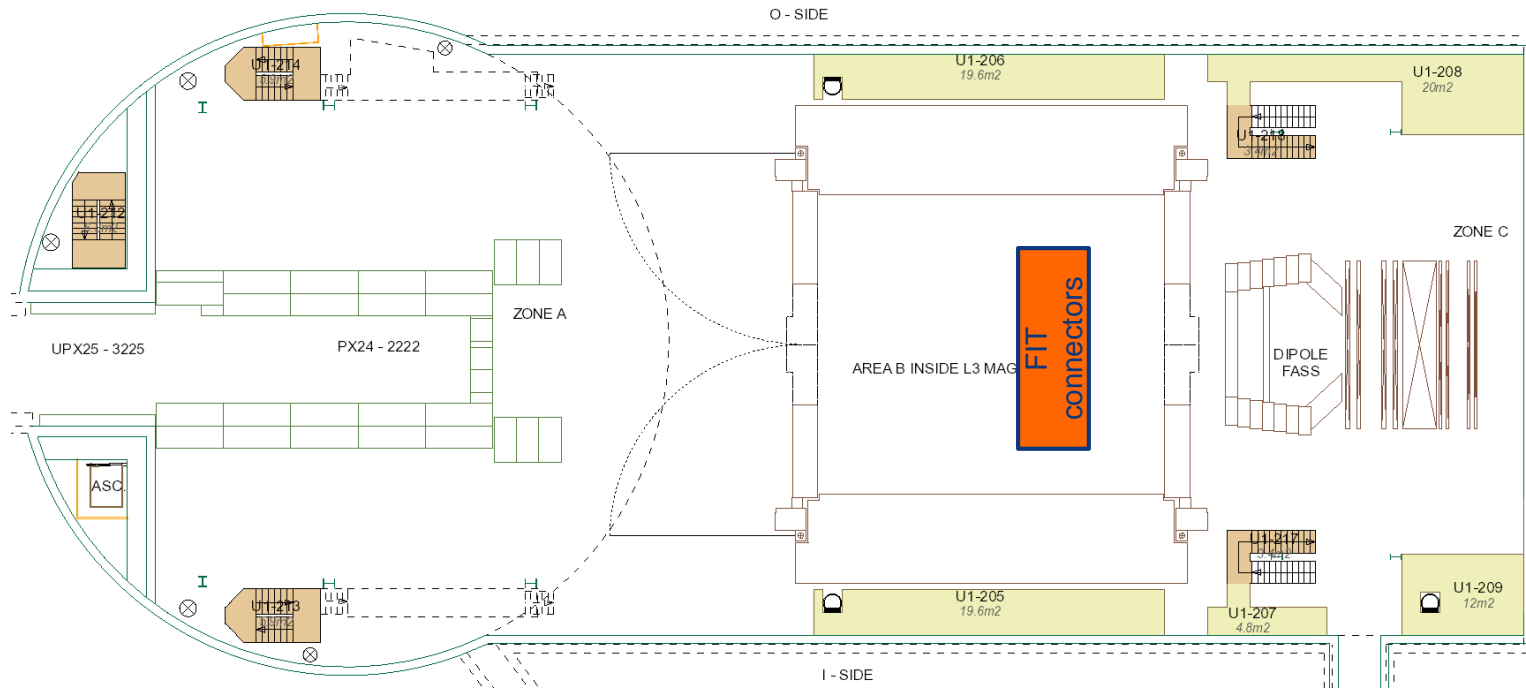
Gas: switch from ARCAL 10 to ARCAL 15



UX25 activities w2 – Tue 7 Jan 2020

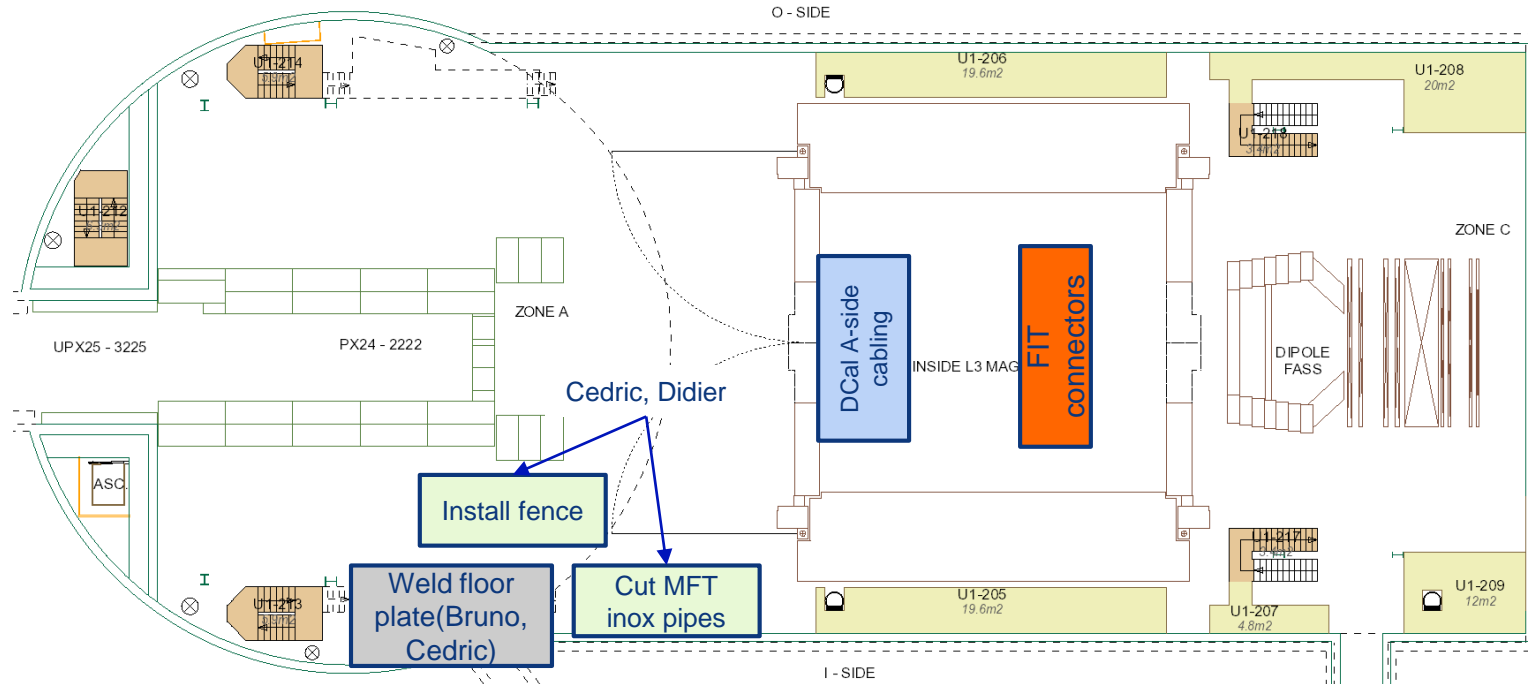
ALTEAD: preparation for load test of cavern cranes (Wed AM)

EN-CV: maintenance cavern ventilation (3 days)

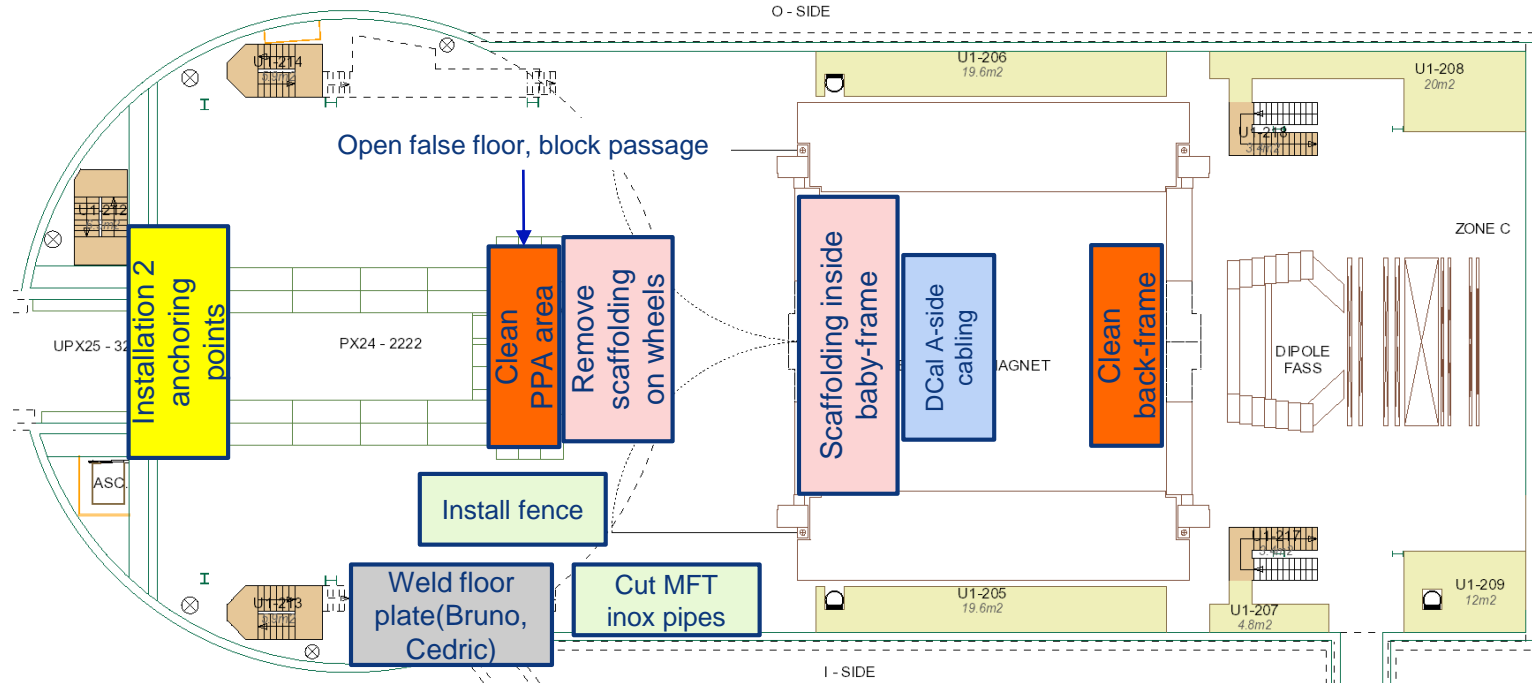


UX25 activities w2 – Wed 8 Jan 2020

ALTEAD + HSE: load test cavern cranes (AM)

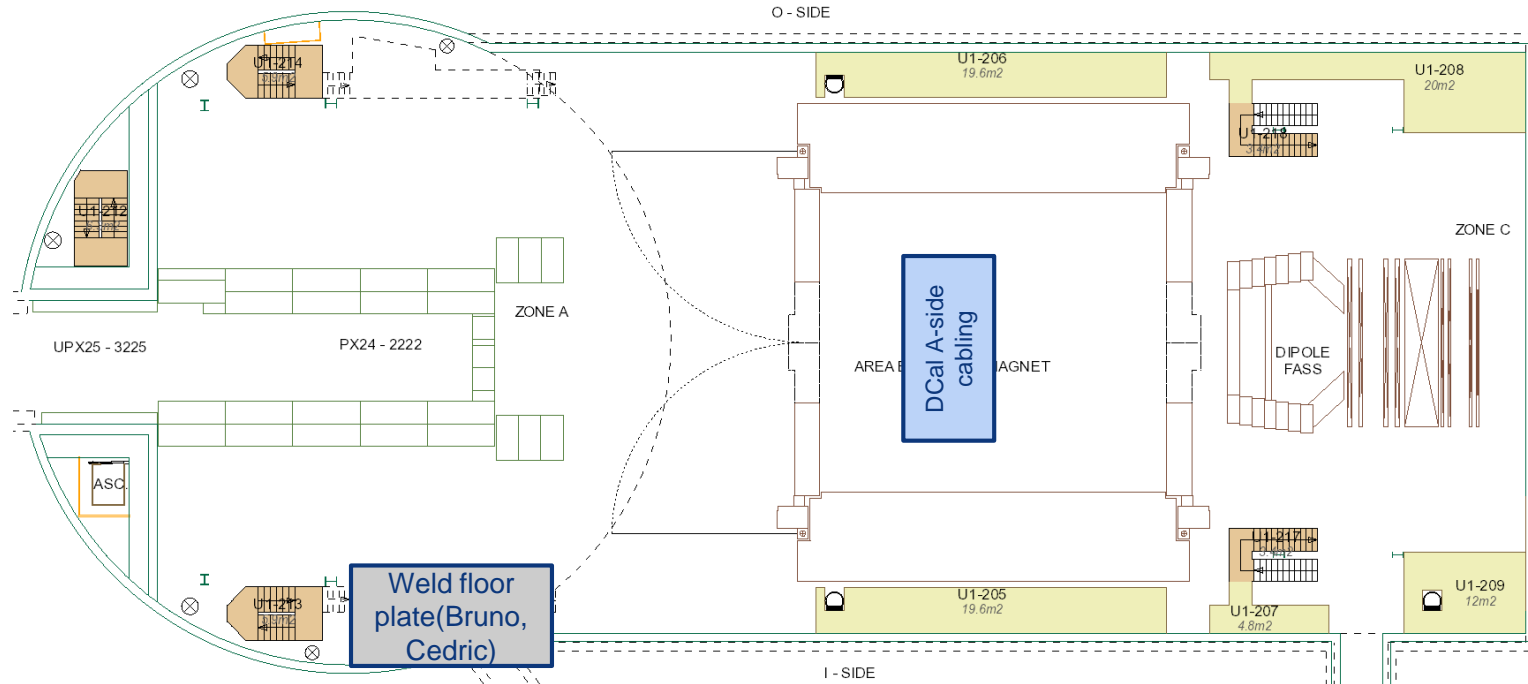


UX25 activities w2 – Thu 9 Jan 2020

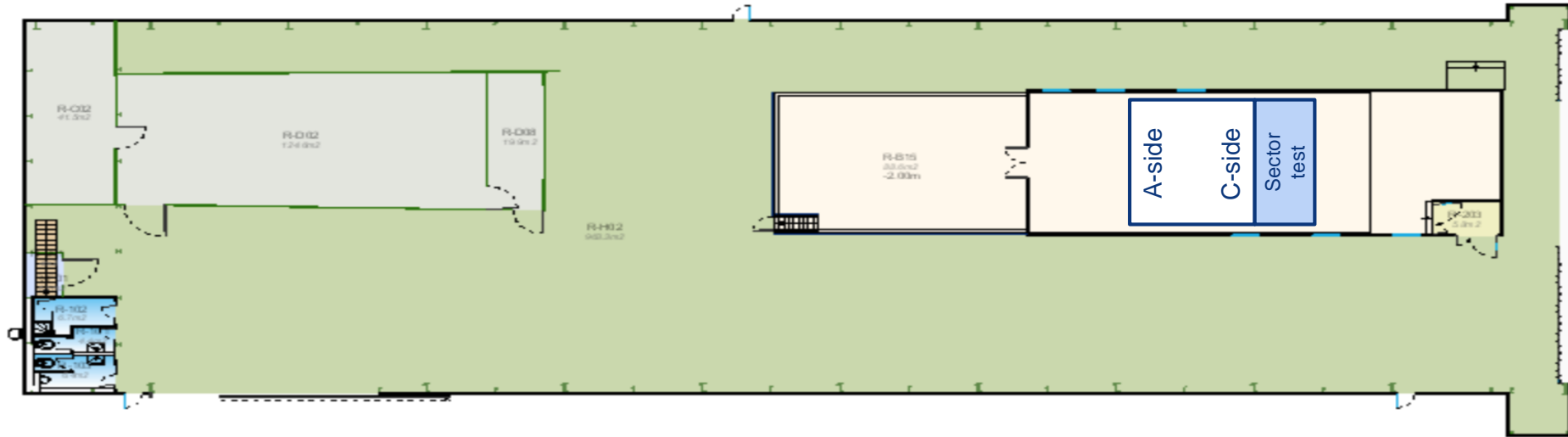


UX25 activities w2 – Fri 10 Jan 2020

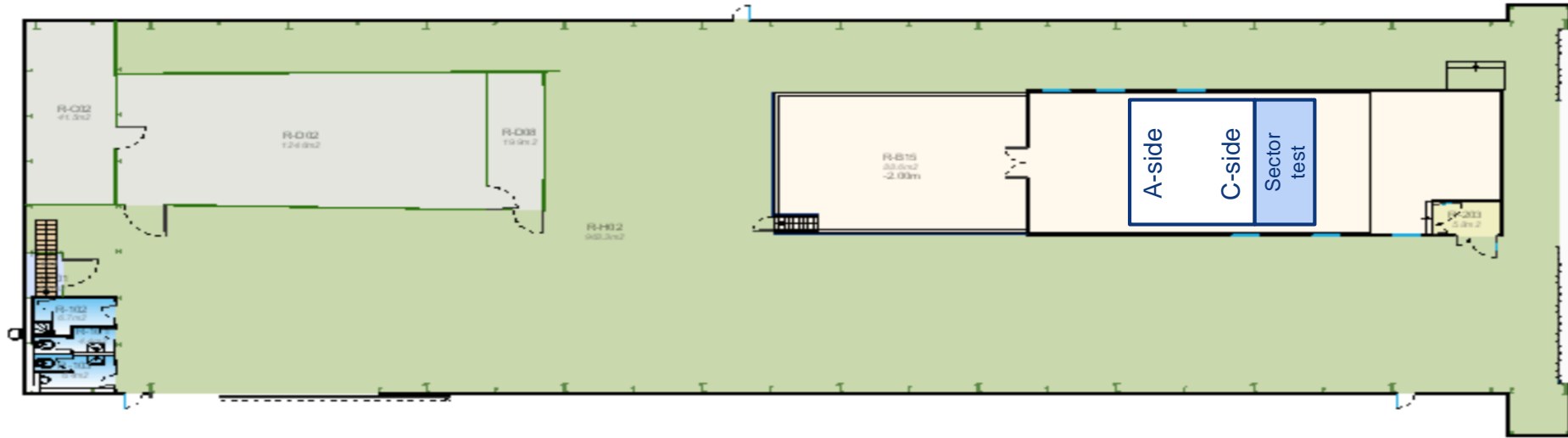
ALTEAD: bring blocks for Delphi Frame to SX2



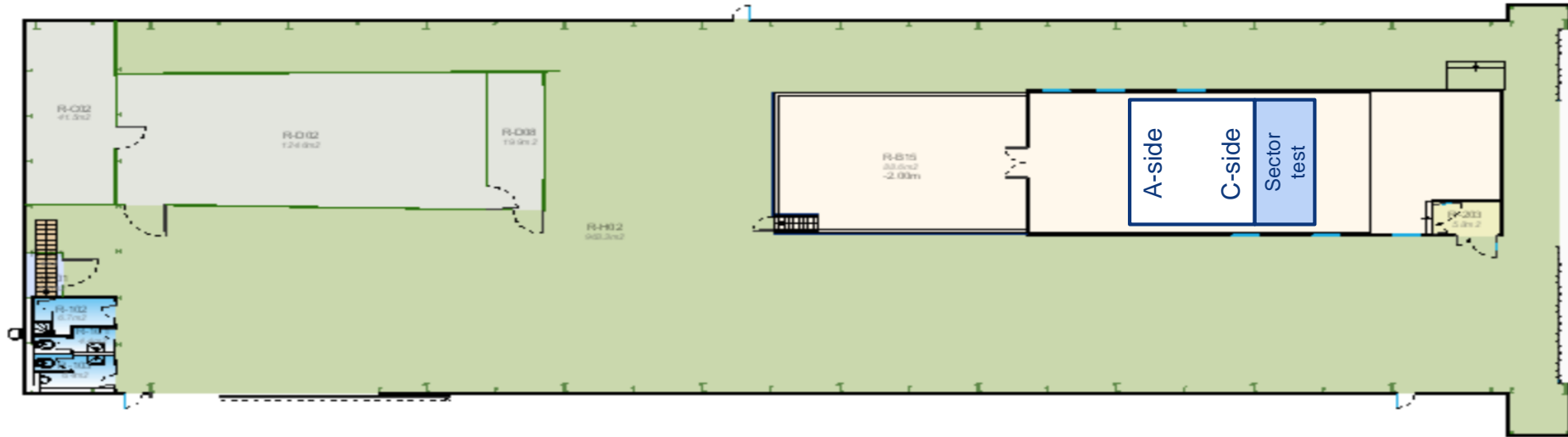
SXL2 activities w2 – Mon 6 Jan 2020



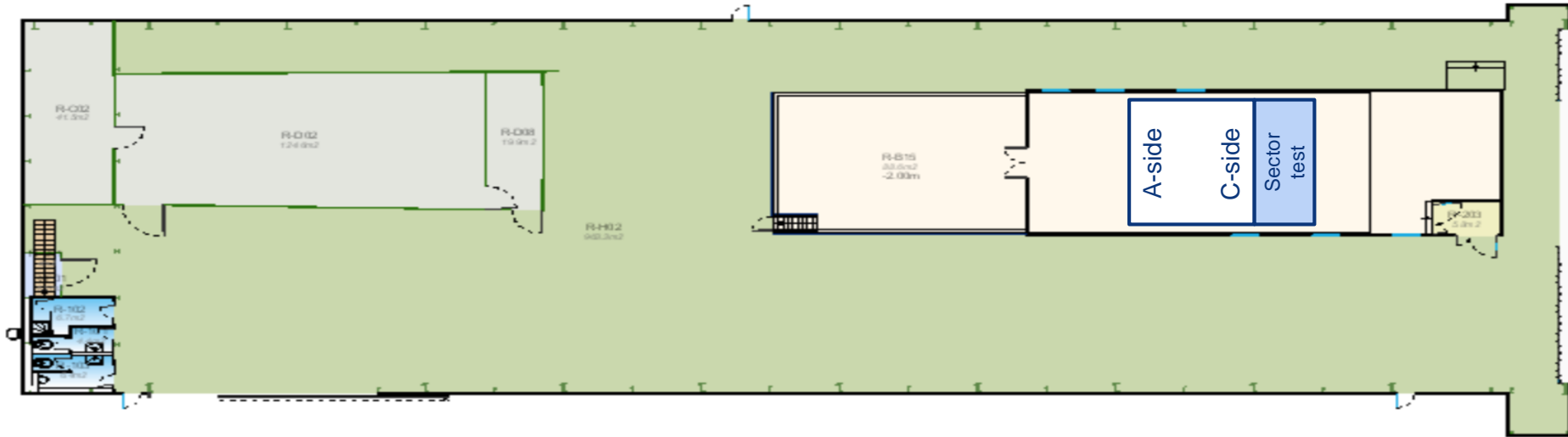
SXL2 activities w2 – Tue 7 Jan 2020



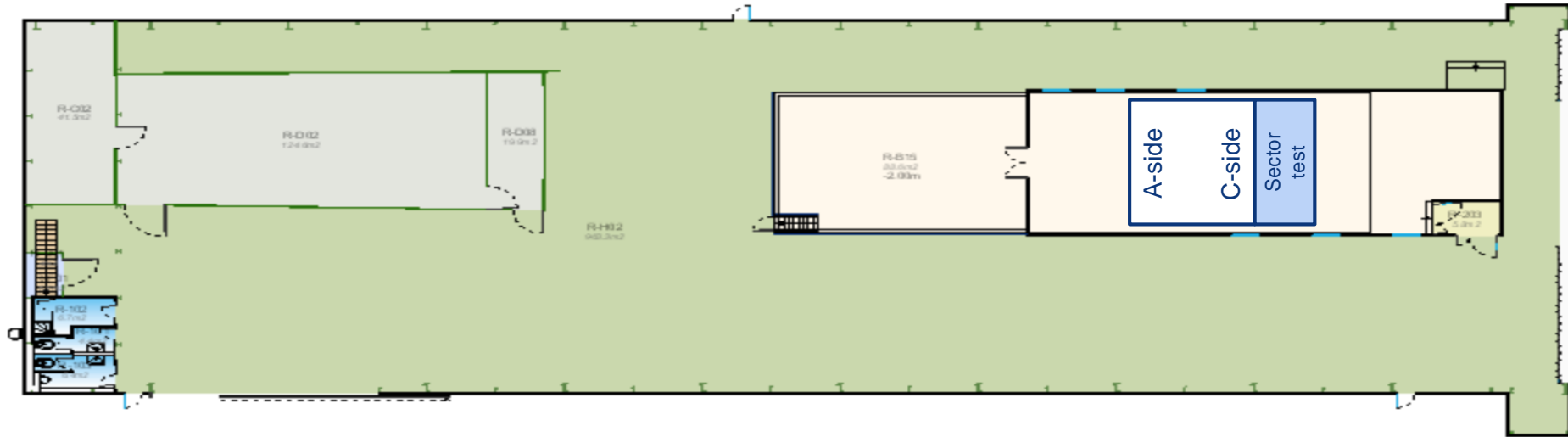
SXL2 activities w2 – Wed 8 Jan 2020



SXL2 activities w2 – Thu 9 Jan 2020

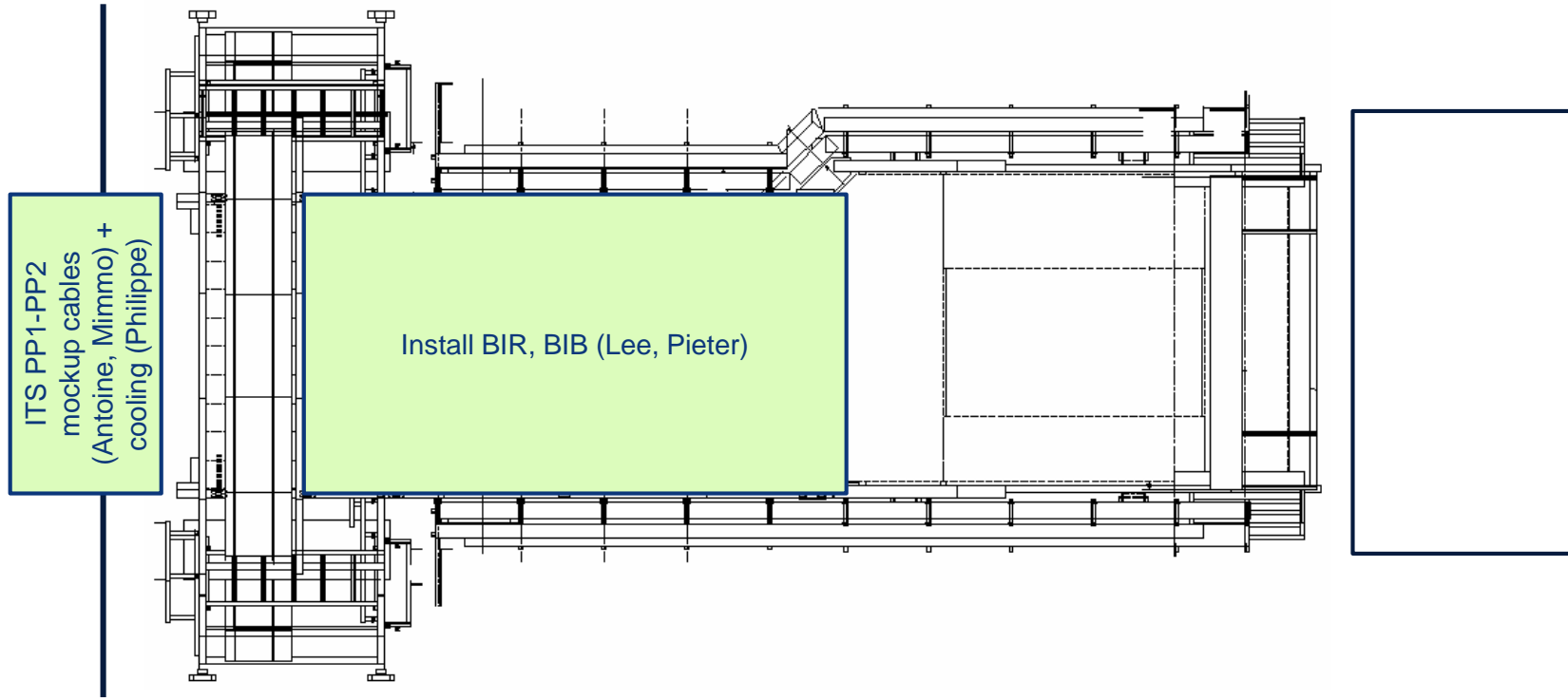


SXL2 activities w2 – Fri 10 Jan 2020

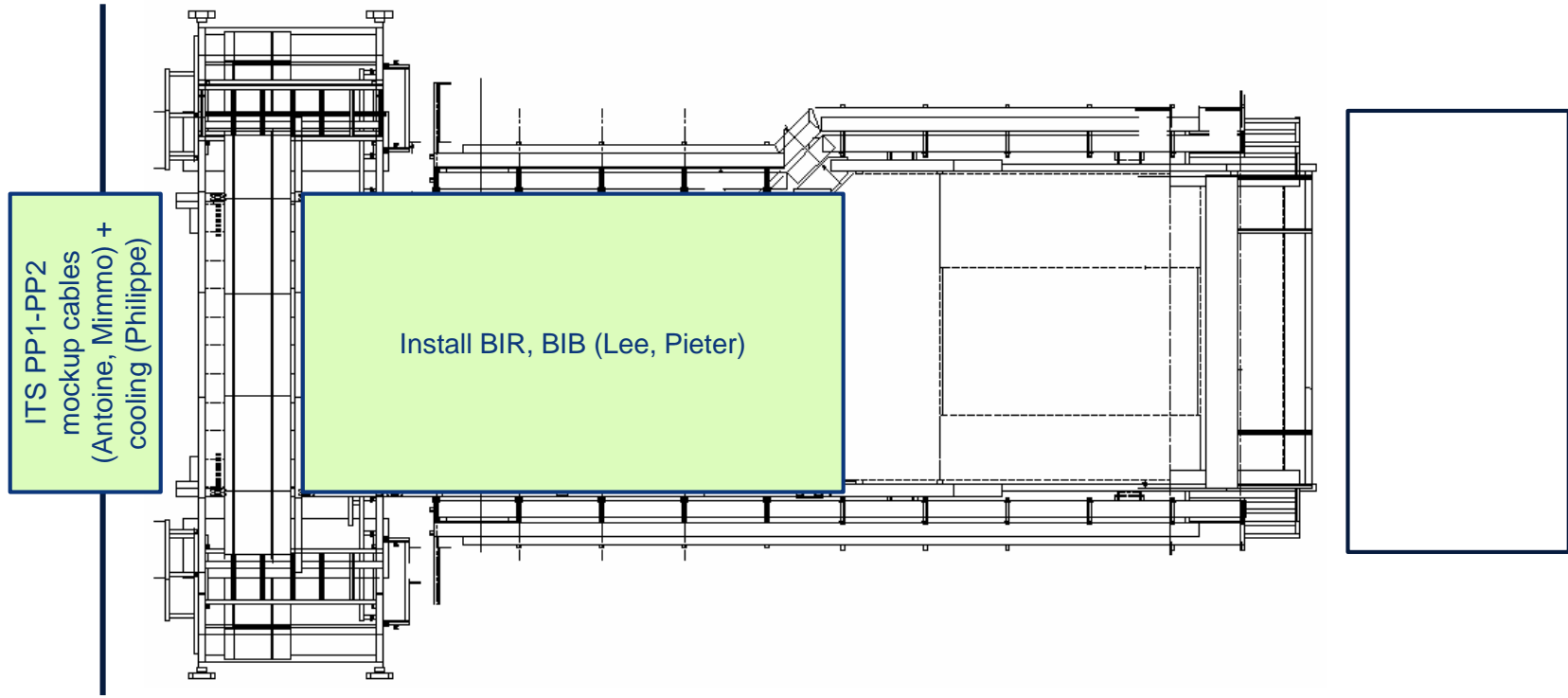


Miniframe activities w2 – Mon 6 Jan 2020

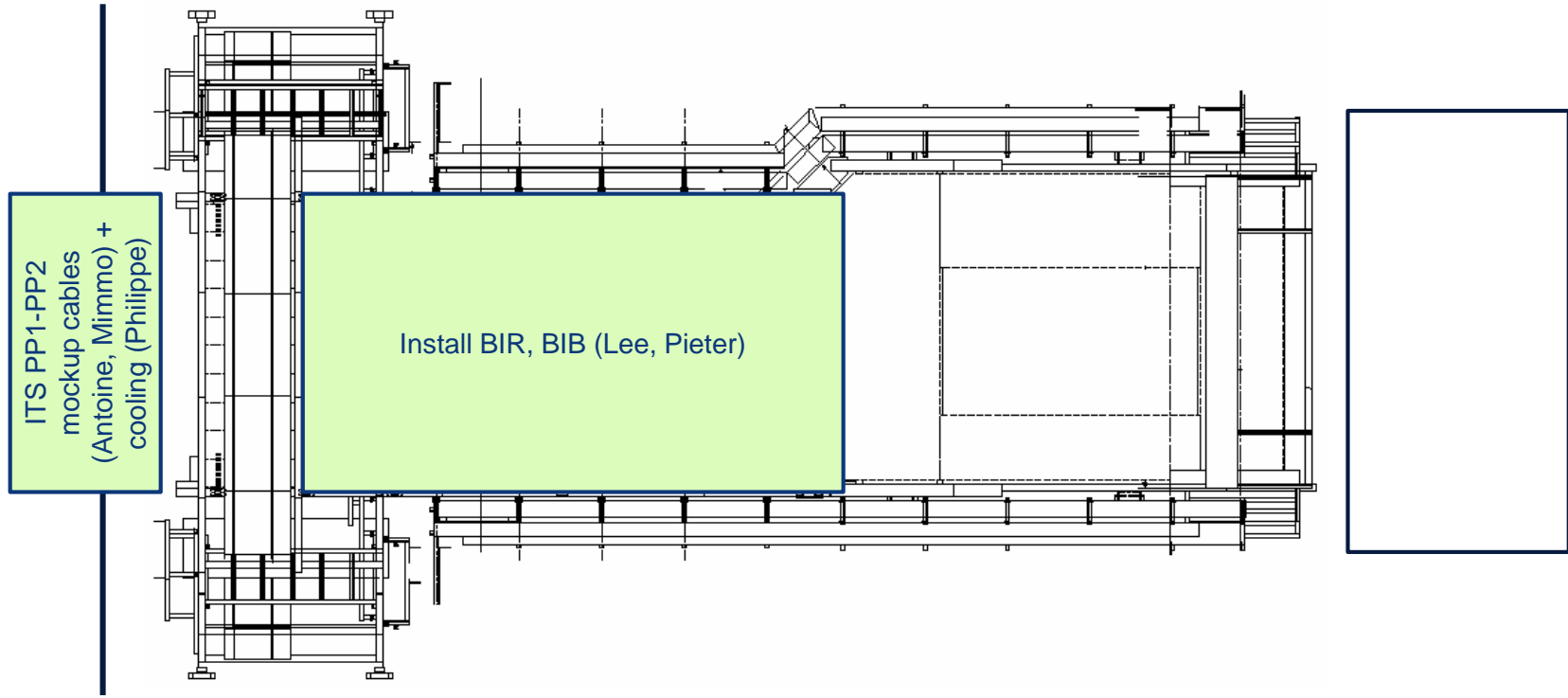
Cleaning miniframe (Elior)



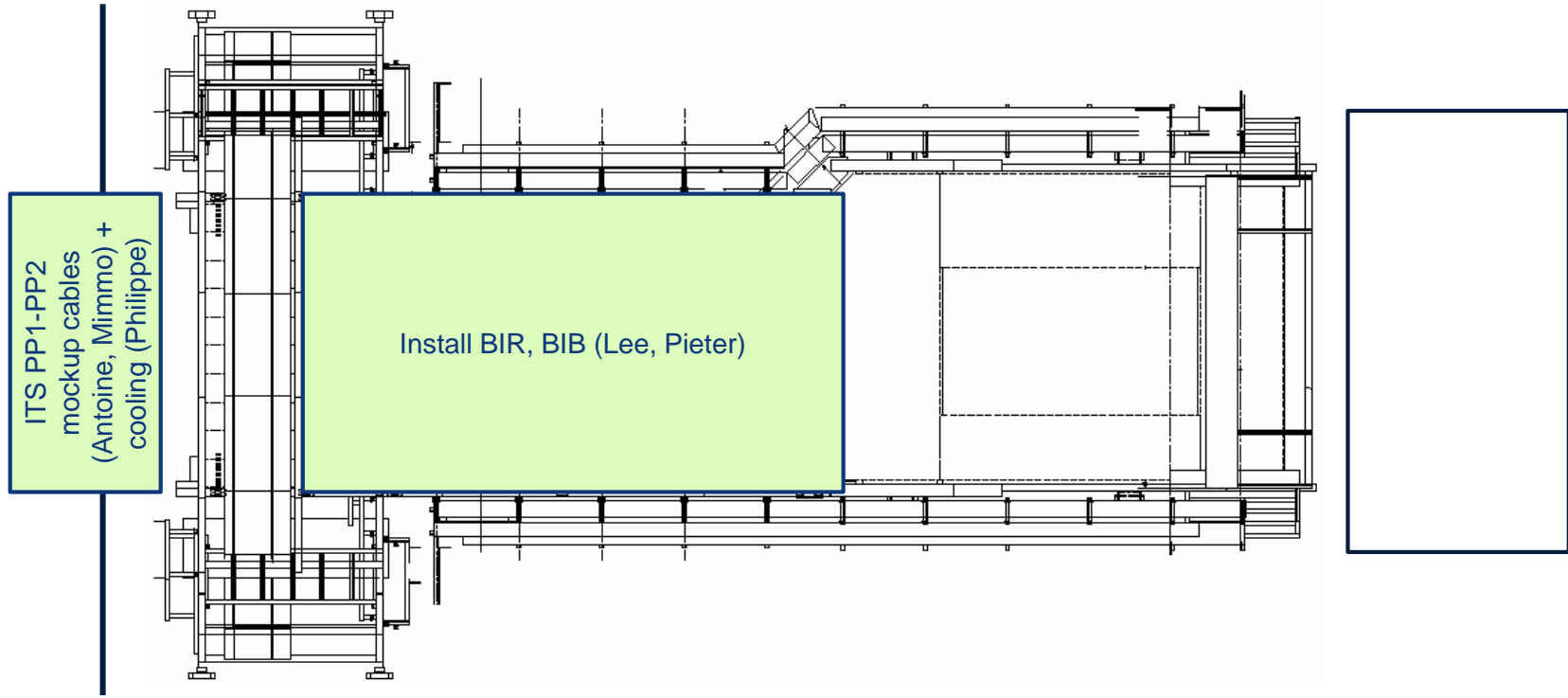
Miniframe activities w2 – Tue 7 Jan 2020



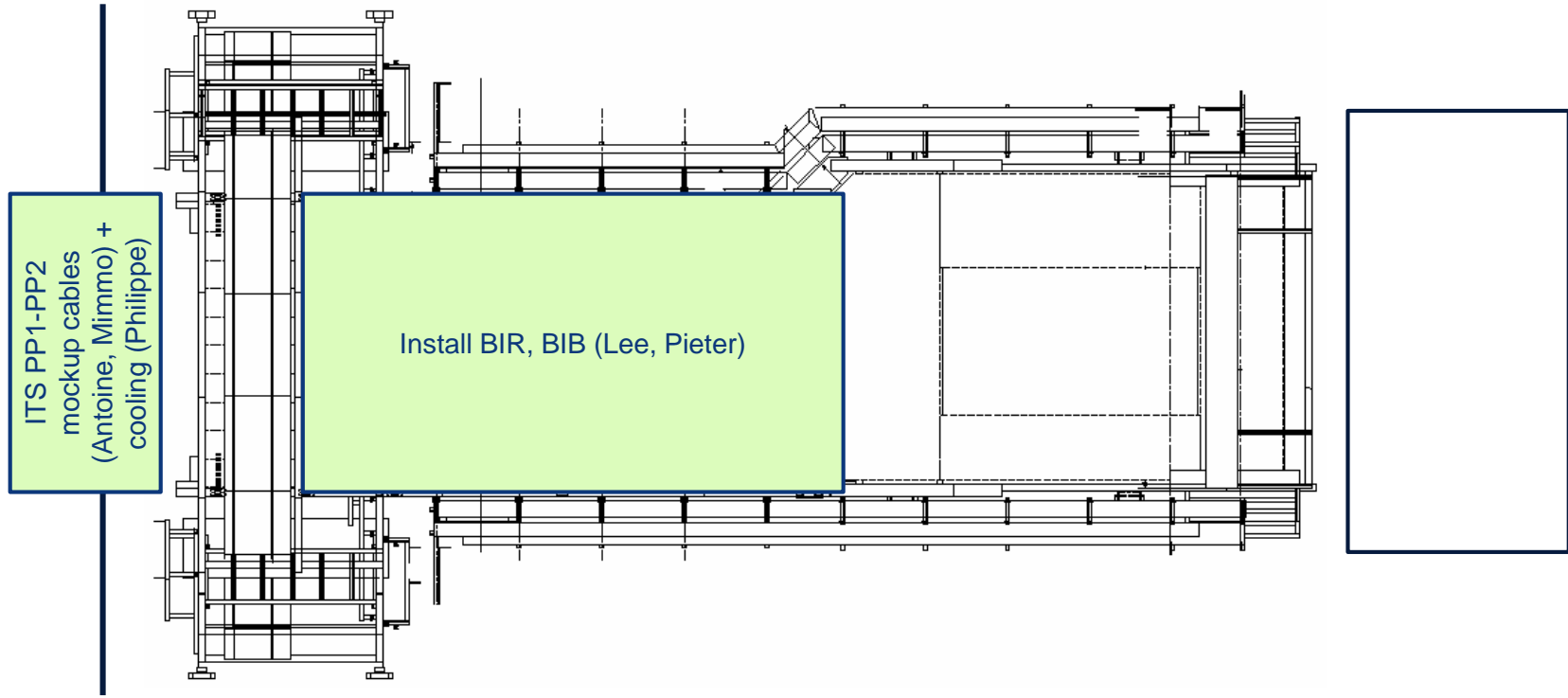
Miniframe activities w2 – Wed 8 Jan 2020



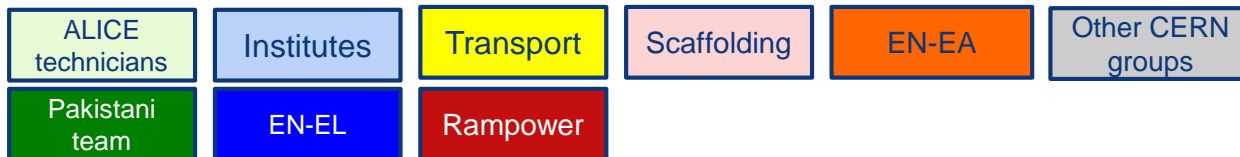
Miniframe activities w2 – Thu 9 Jan 2020



Miniframe activities w2 – Fri 10 Jan 2020



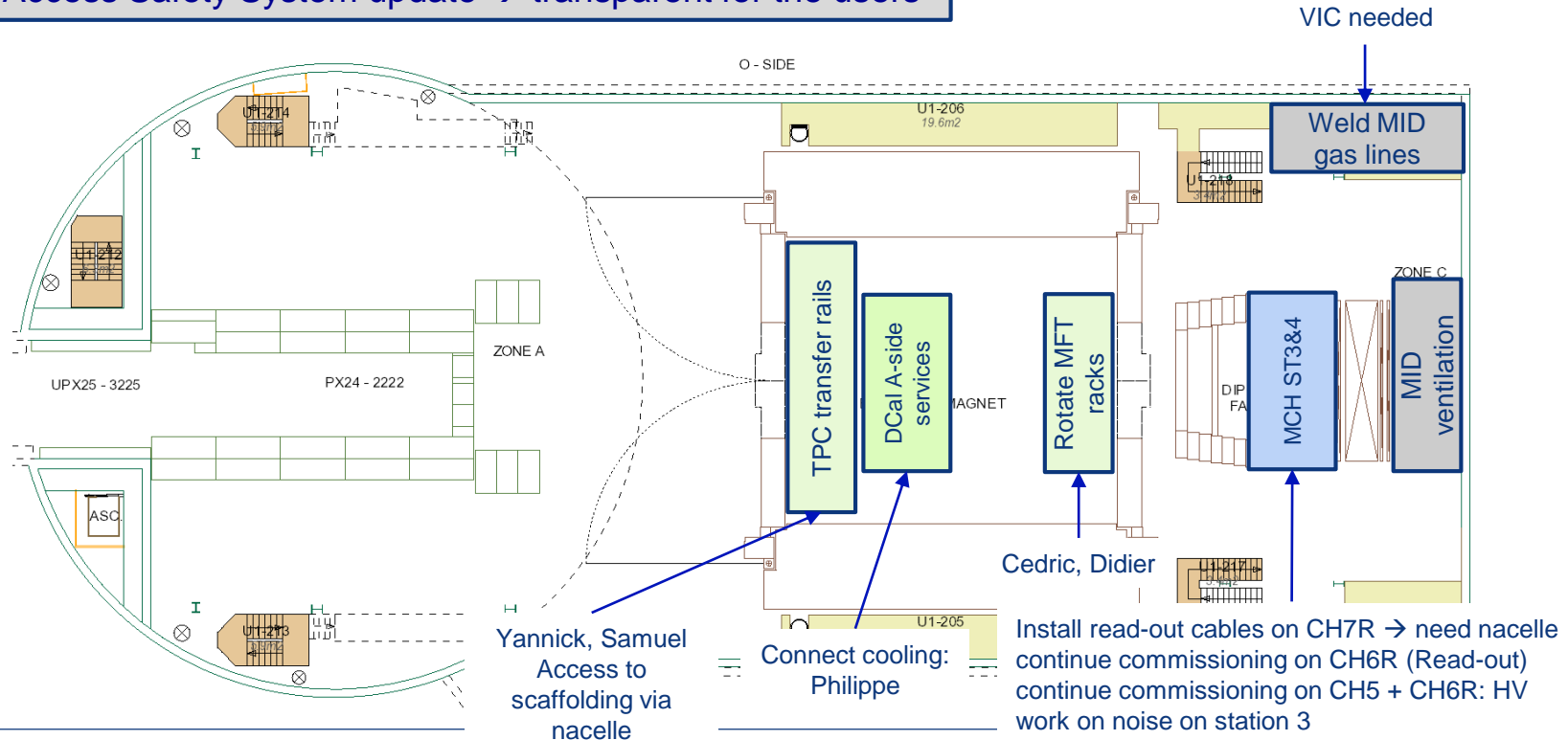
Day-by-day sequence w3



UX25 activities w3 – Mon 13 Jan 2020

CR1: install TA valves, redo flexible hoses distribution (Philippe + Bruno) – whole week. VIC at 10:30

LHC Access Safety System update → transparent for the users

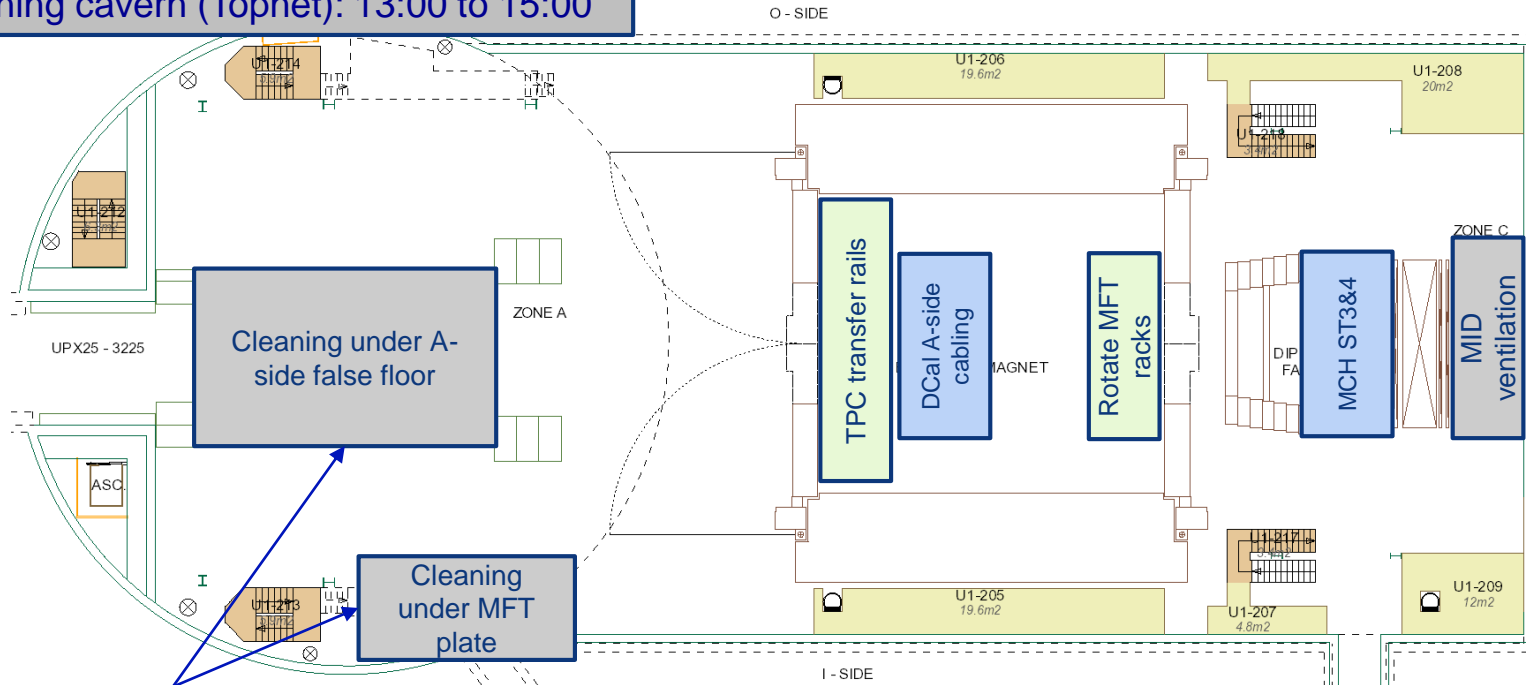


UX25 activities w3 – Tue 14 Jan 2020

EN-HE: cavern lift maintenance (AS-724): no access UX25 from 6:00 AM to 8:00 AM

EN-CV: maintenance SG2 ventilation (will stop flammable gases)

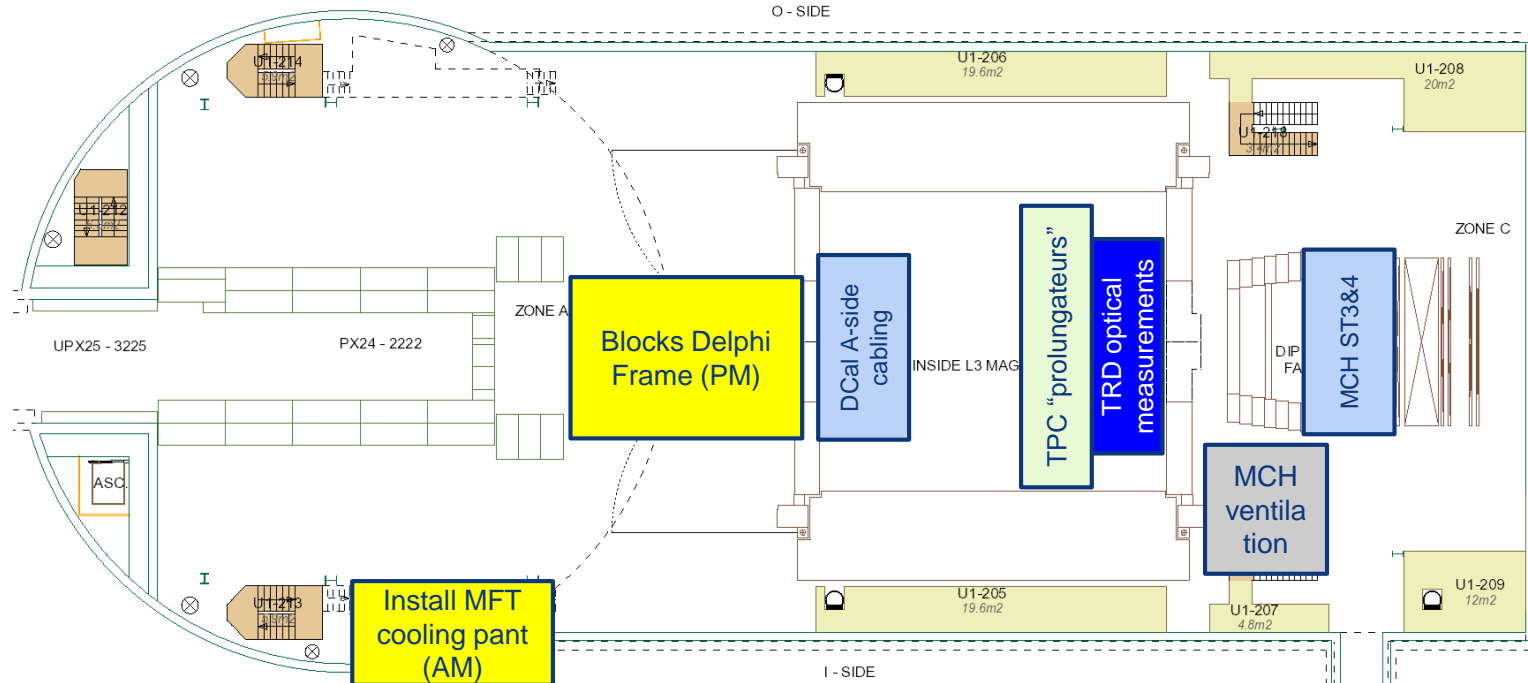
Cleaning cavern (Topnet): 13:00 to 15:00



UX25 activities w3 – Wed 15 Jan 2020

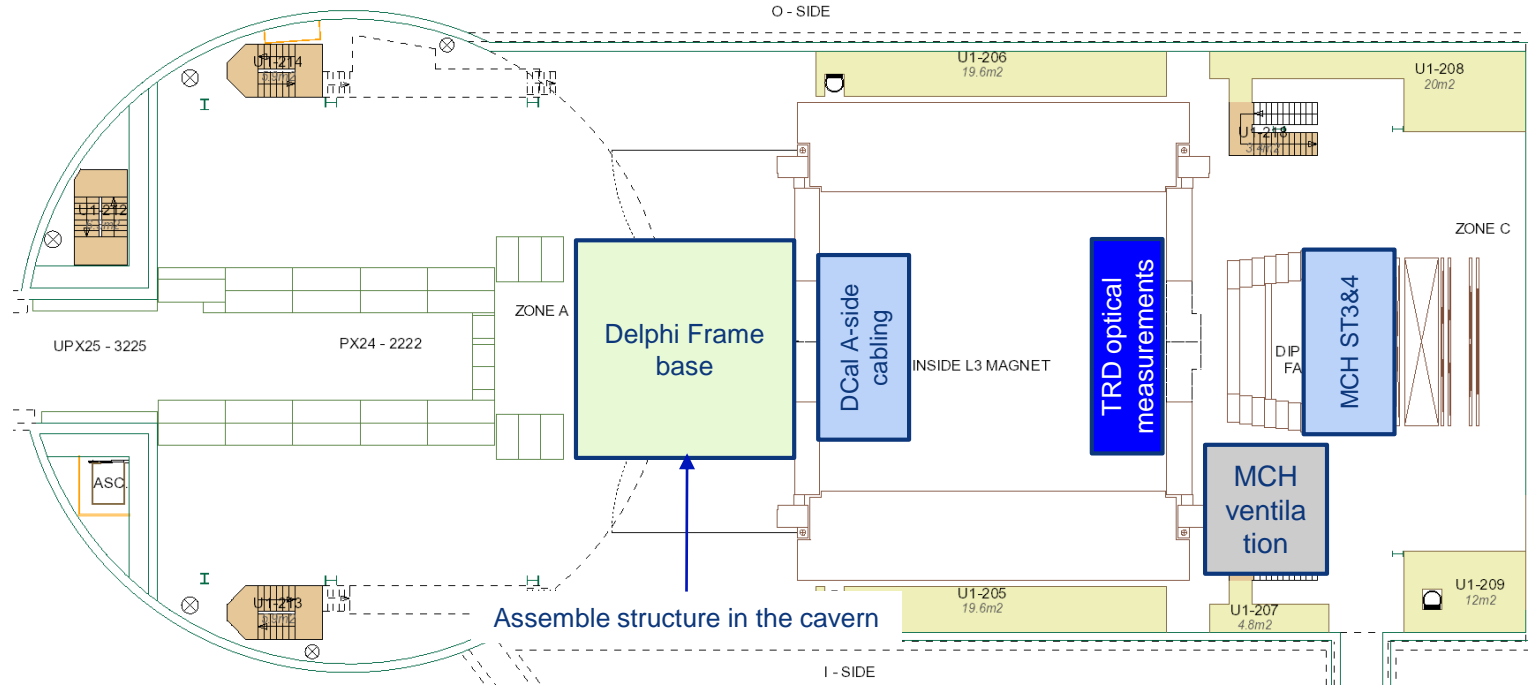
A-side access blocked from 13:00 to 15:00: transport TPC blocks

EN-CV: maintenance SG2 ventilation (will stop flammable gases)

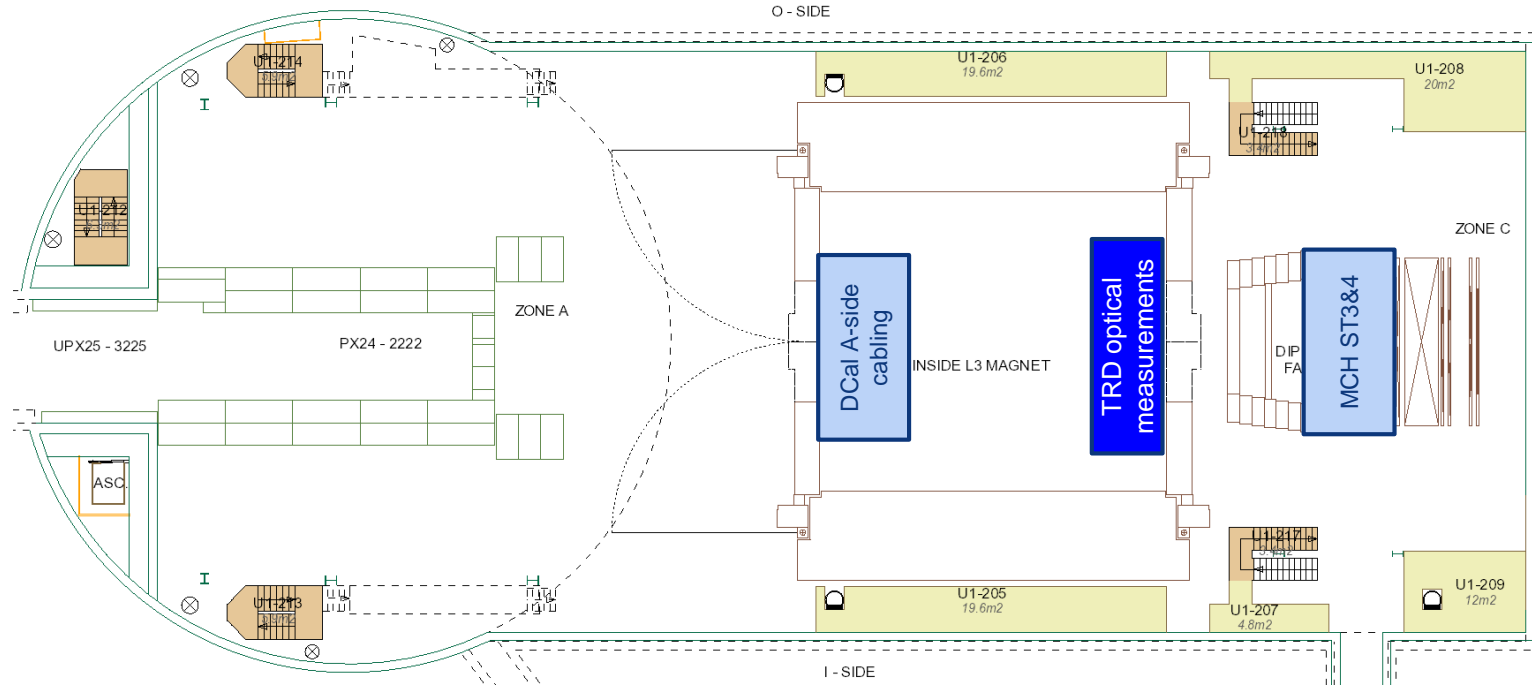


UX25 activities w3 – Thu 16 Jan 2020

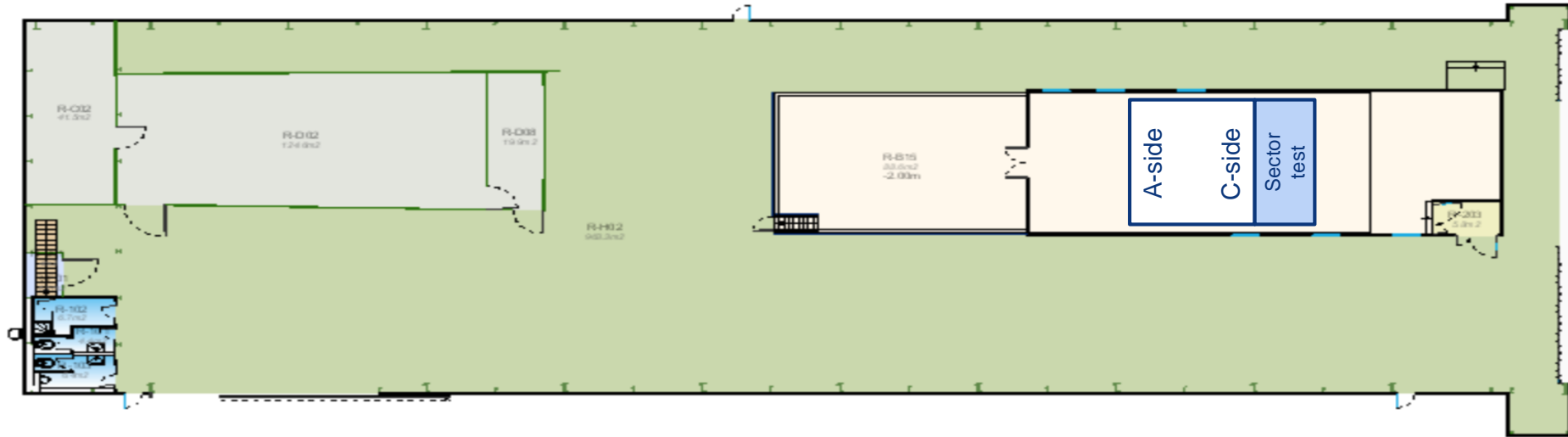
MID: start i-butane



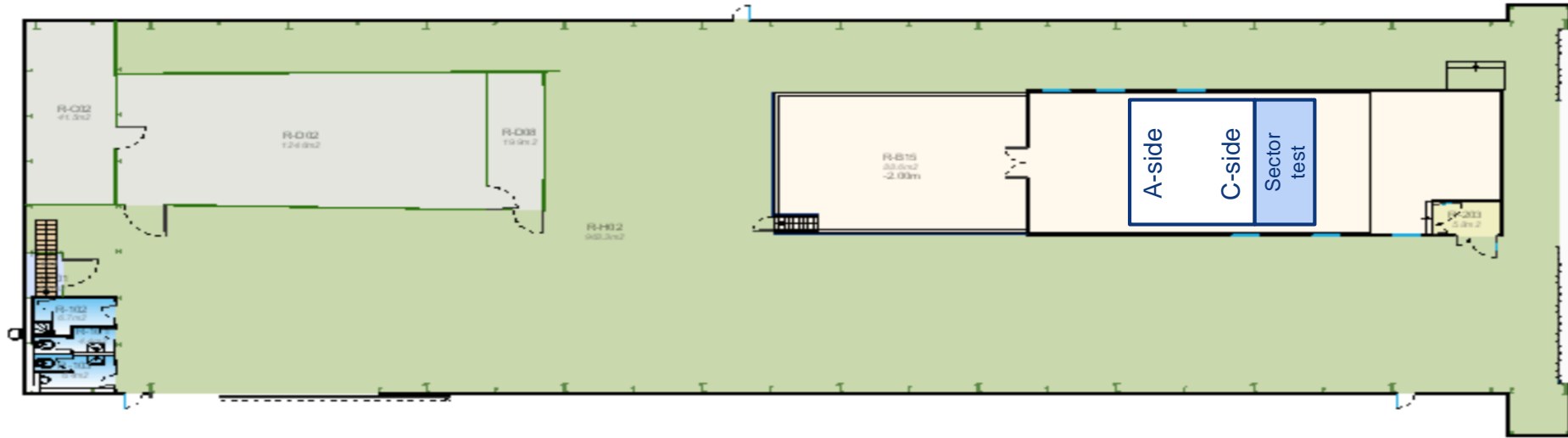
UX25 activities w3 – Fri 17 Jan 2020



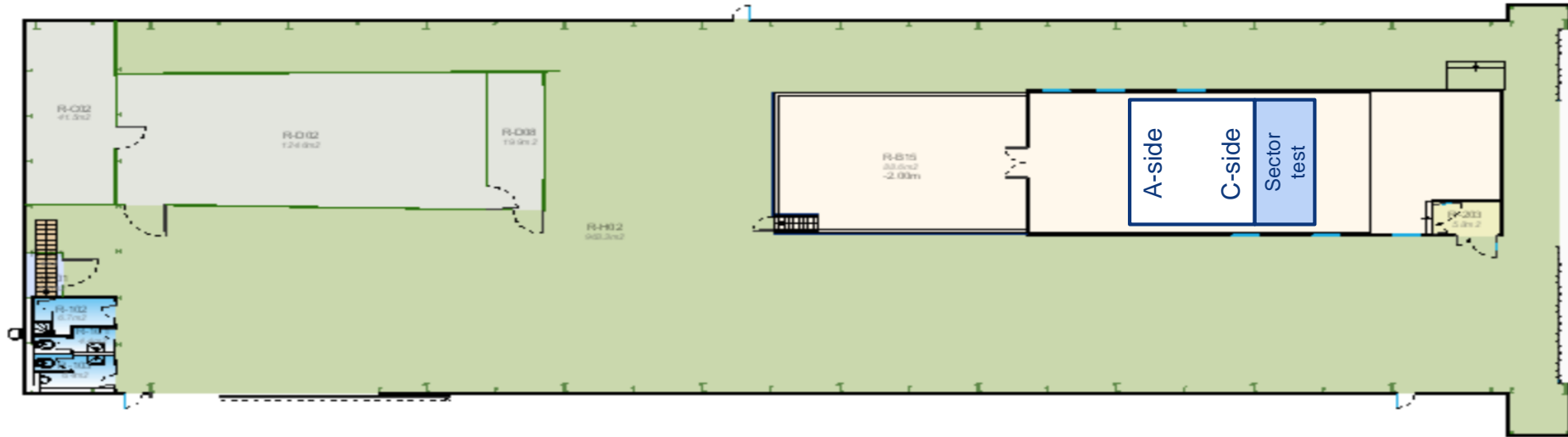
SXL2 activities w3 – Mon 13 Jan 2020



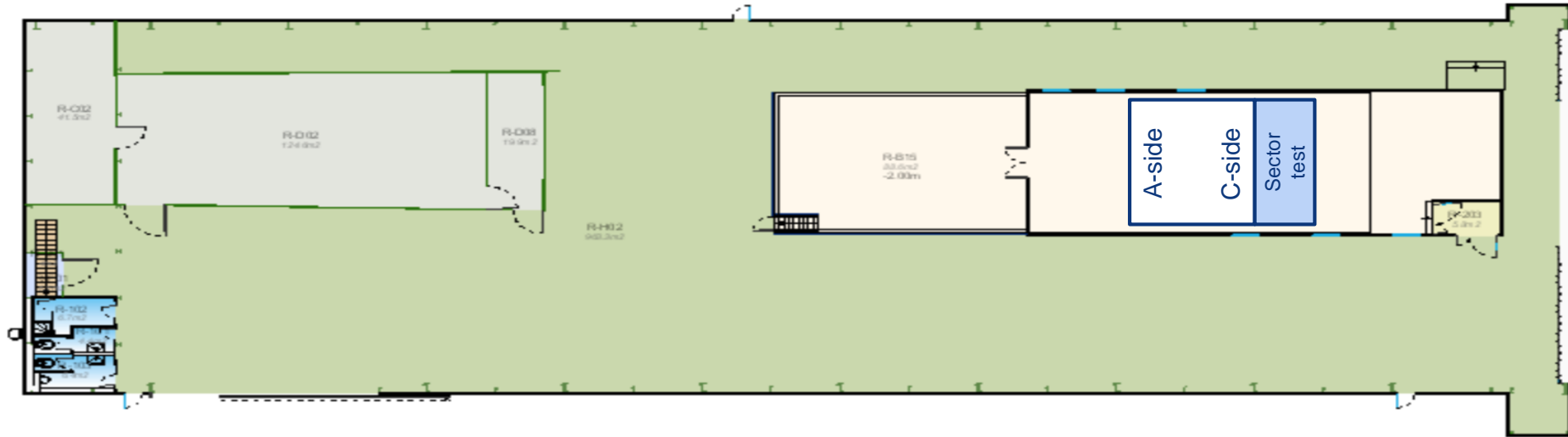
SXL2 activities w3 – Tue 14 Jan 2020



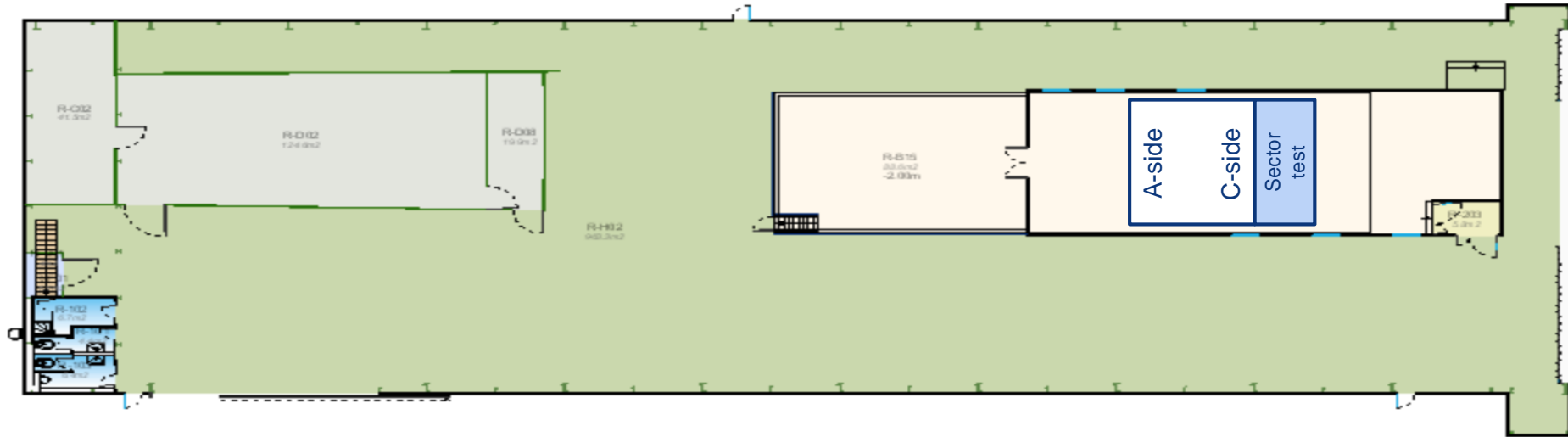
SXL2 activities w3 – Wed 15 Jan 2020



SXL2 activities w3 – Thu 16 Jan 2020



SXL2 activities w3 – Fri 17 Jan 2020



Miniframe activities w3 – Mon 13 Jan 2020

Cleaning miniframe (Elior)

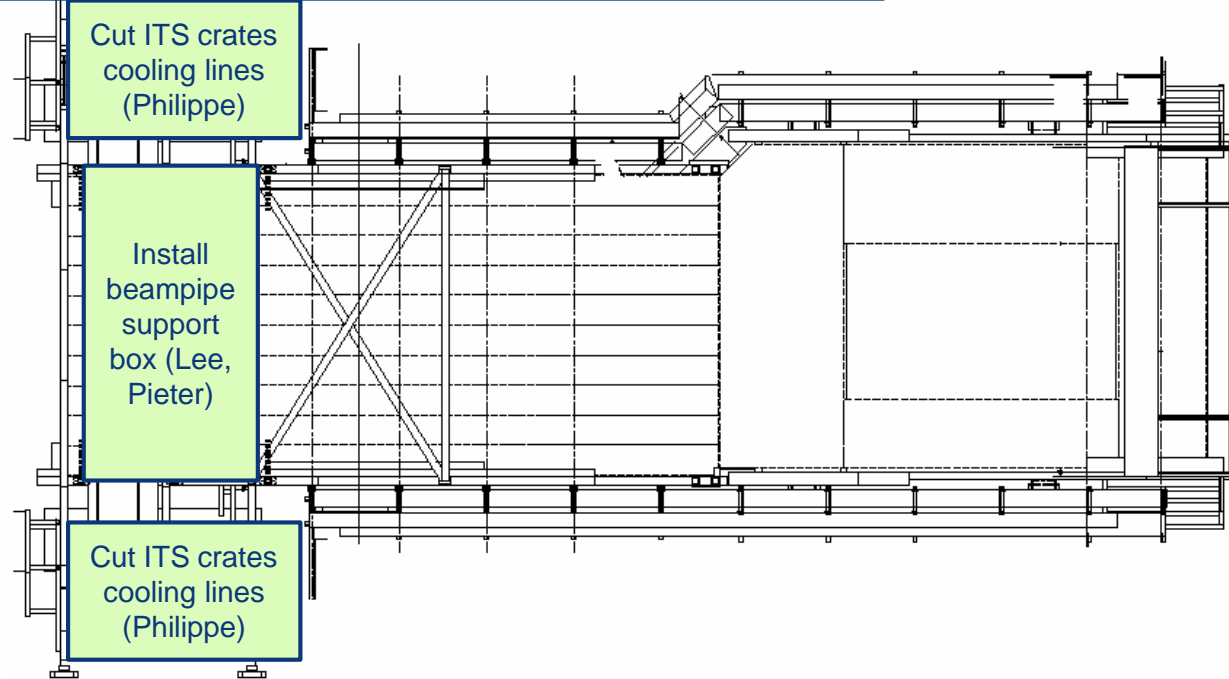
Produce and install MFT and ITS cooling hoses (Philippe)

Cut ITS crates cooling lines (Philippe)

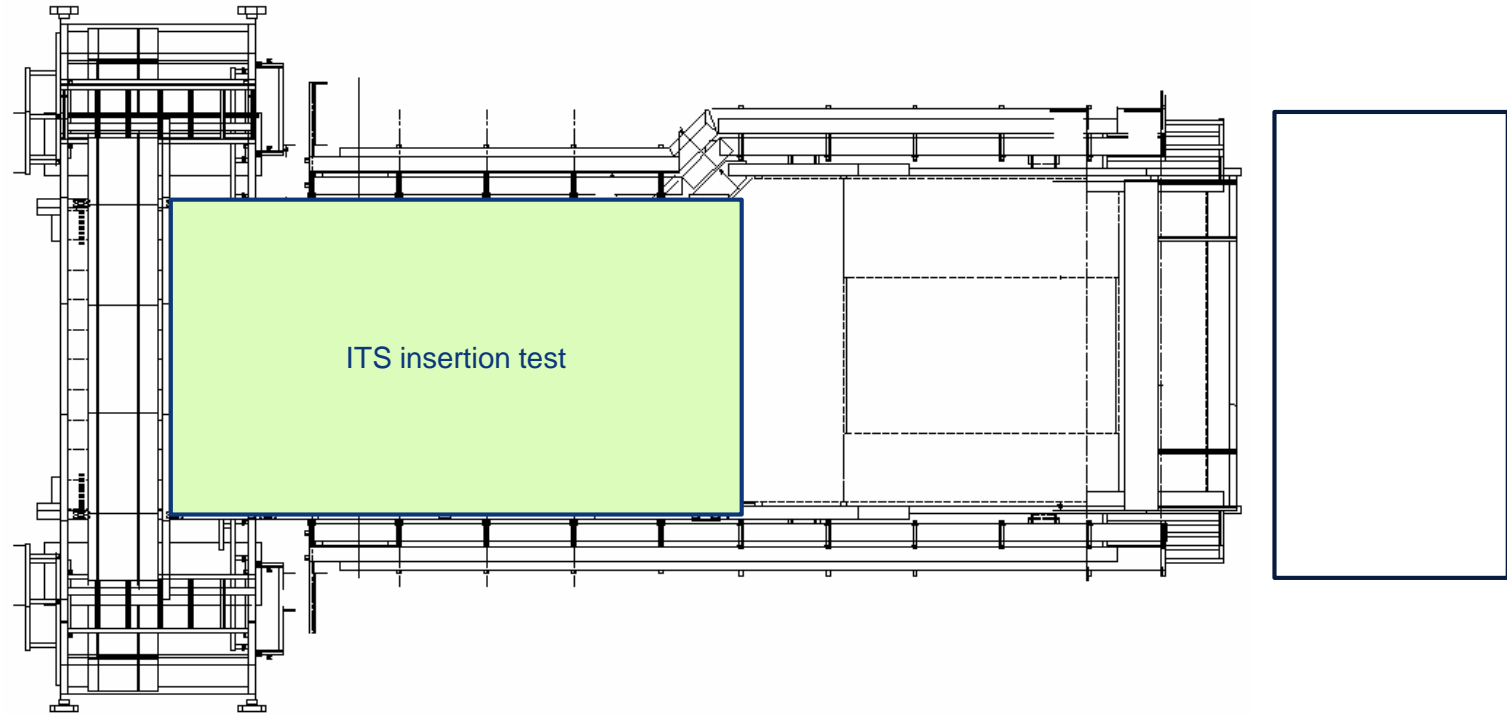
Install beampipe support box (Lee, Pieter)

Cut ITS crates cooling lines (Philippe)

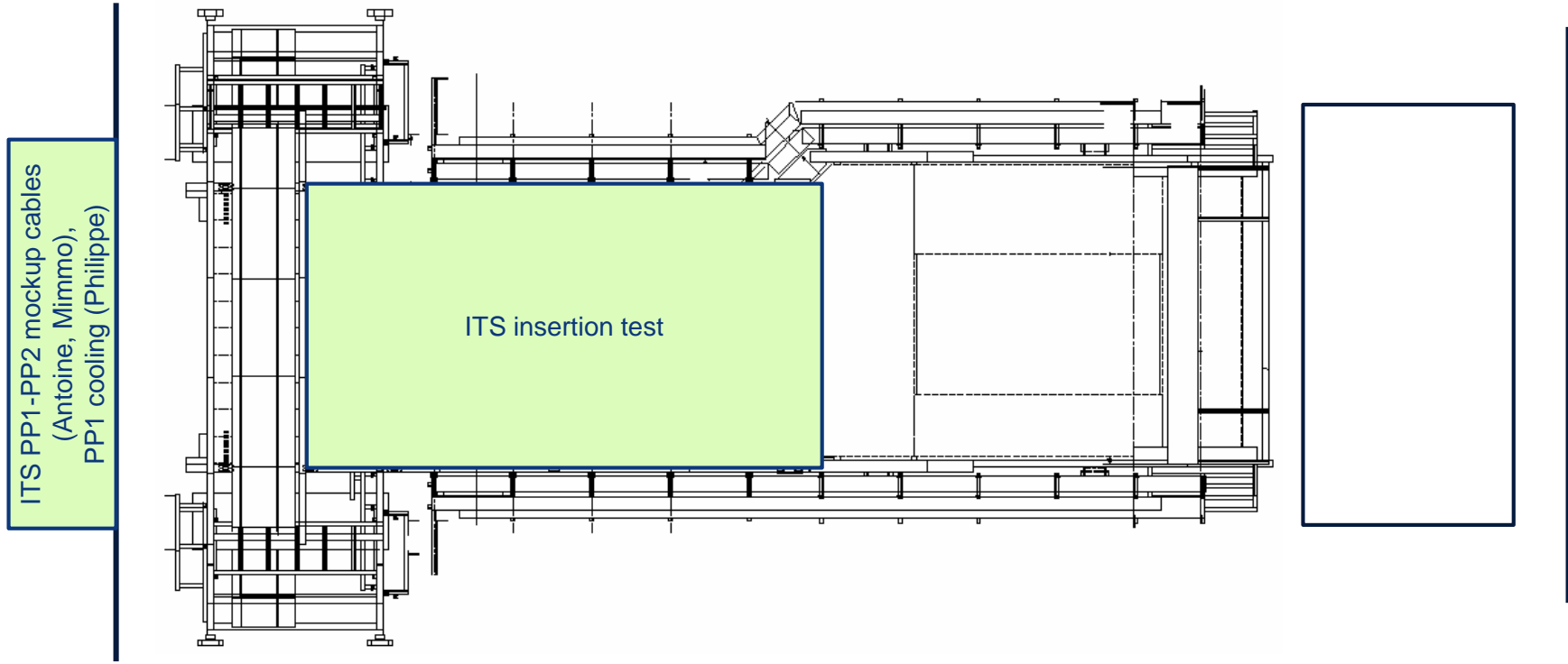
ITS PP1-PP2 mockup cables (Antoine, Mimmo), PP1 cooling (Philippe)



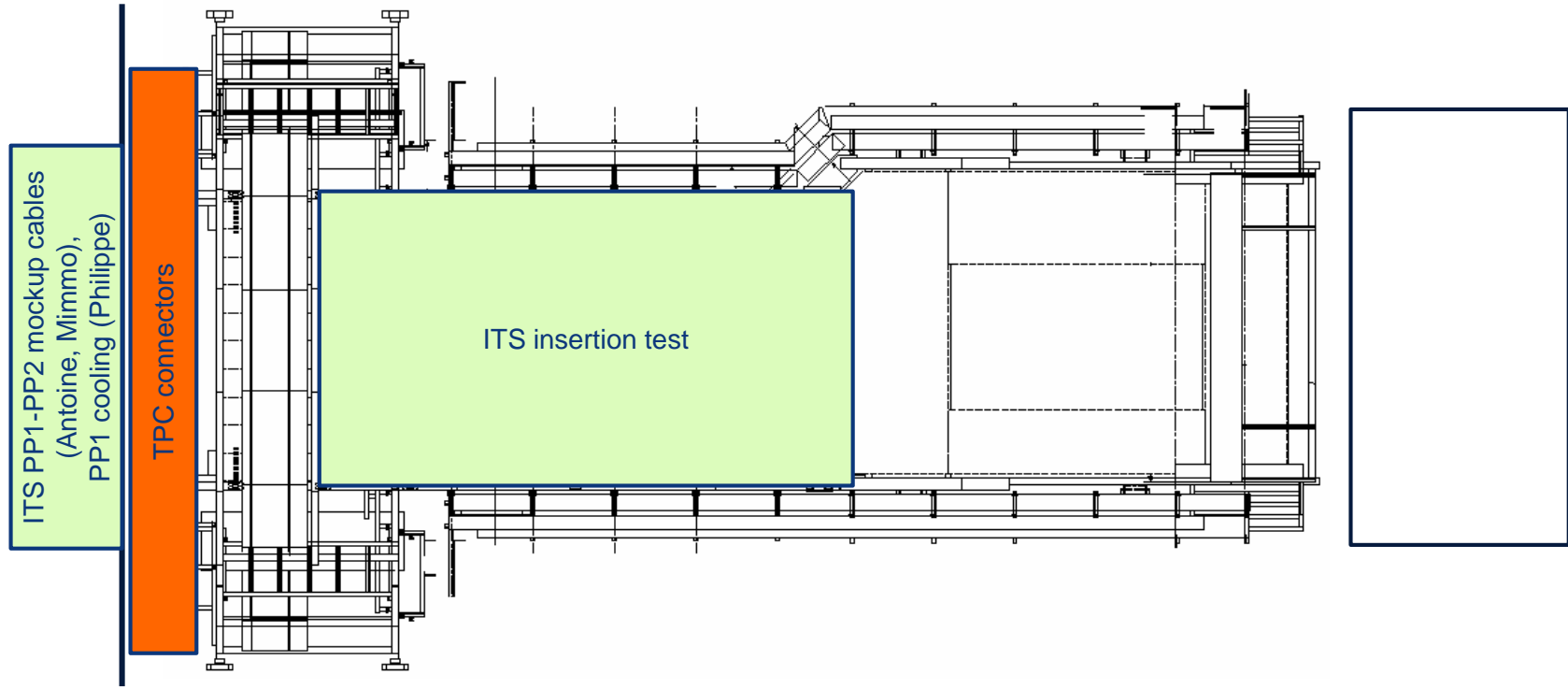
Miniframe activities w3 – Tue 14 Jan 2020



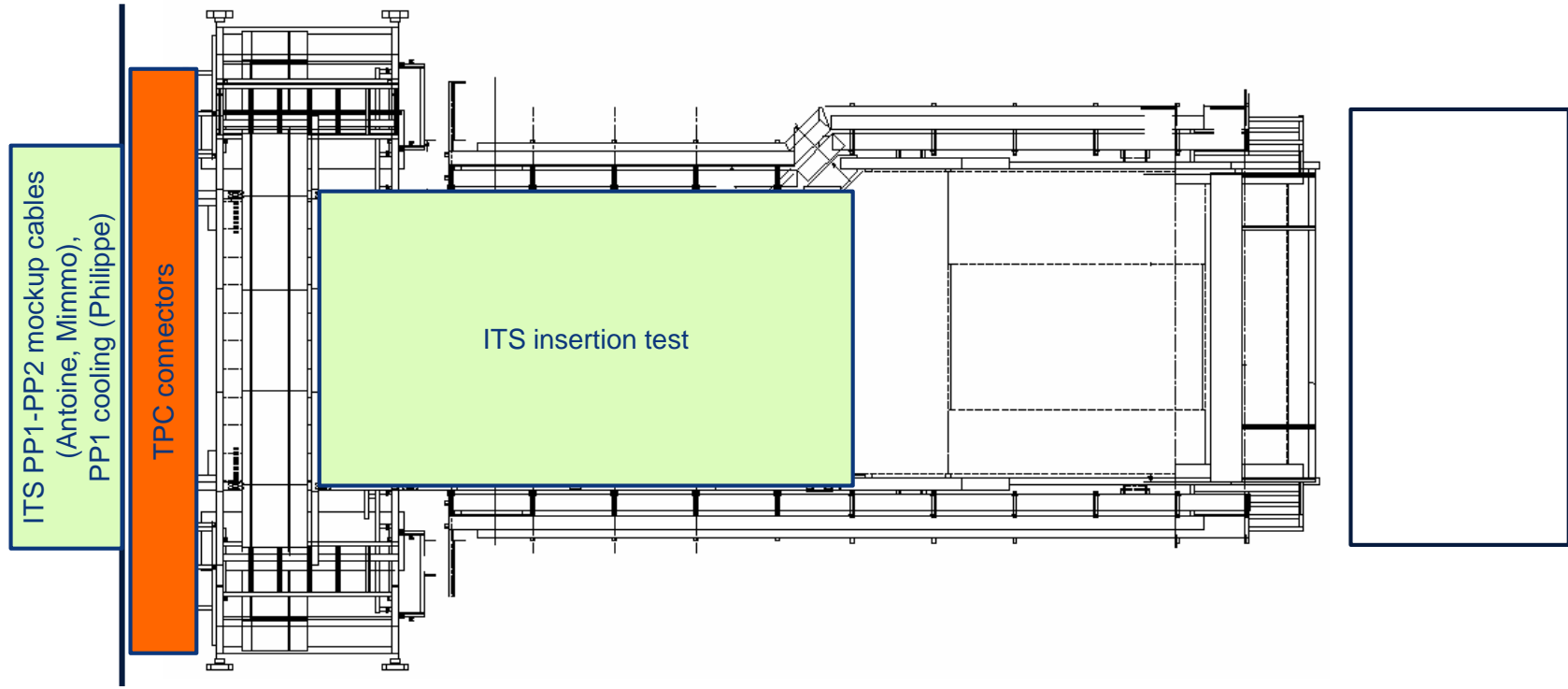
Miniframe activities w3 – Wed 15 Jan 2020



Miniframe activities w3 – Thu 16 Jan 2020



Miniframe activities w3 – Fri 17 Jan 2020



Day-by-day sequence w4

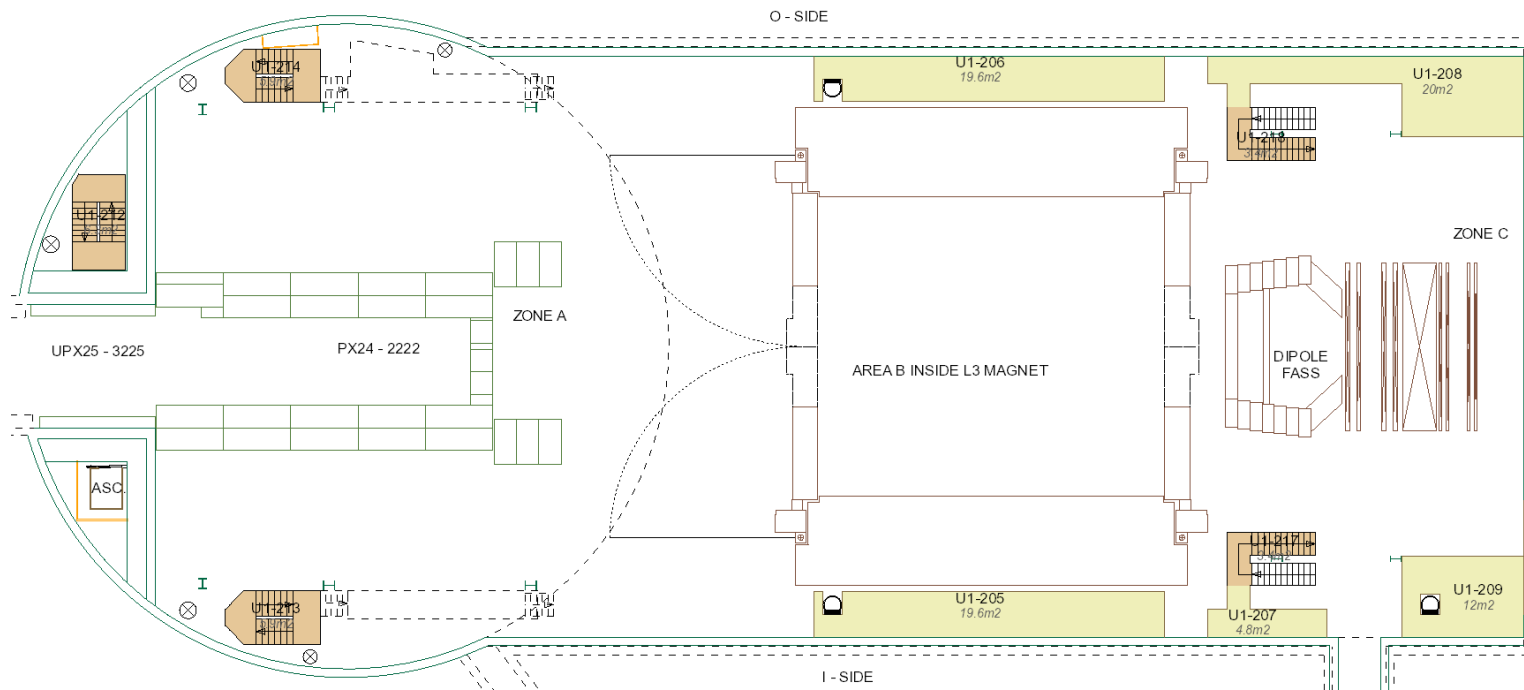


UX25 activities w4 – Mon 20 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2

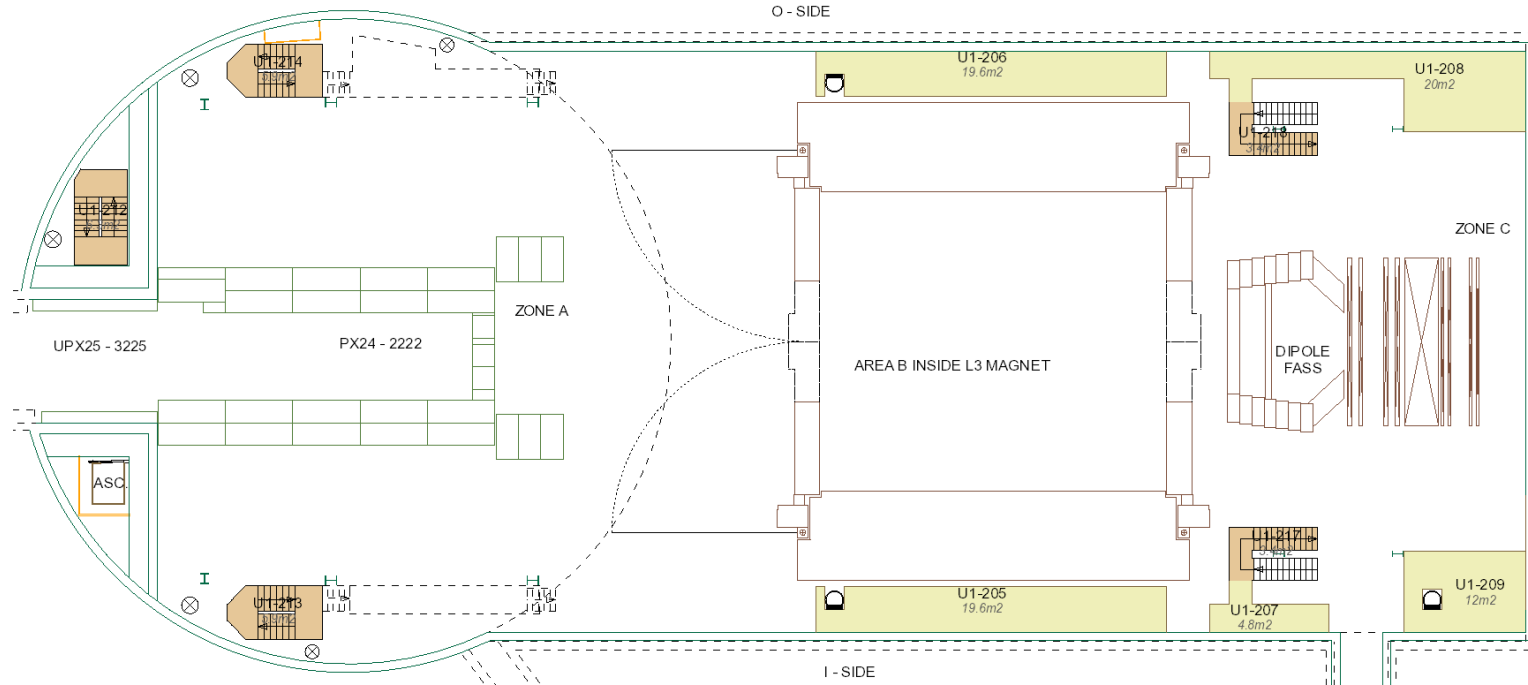
ALTEAD: open 1 block CR0

CR0: open 1 roxtec IT2 (Philippe)



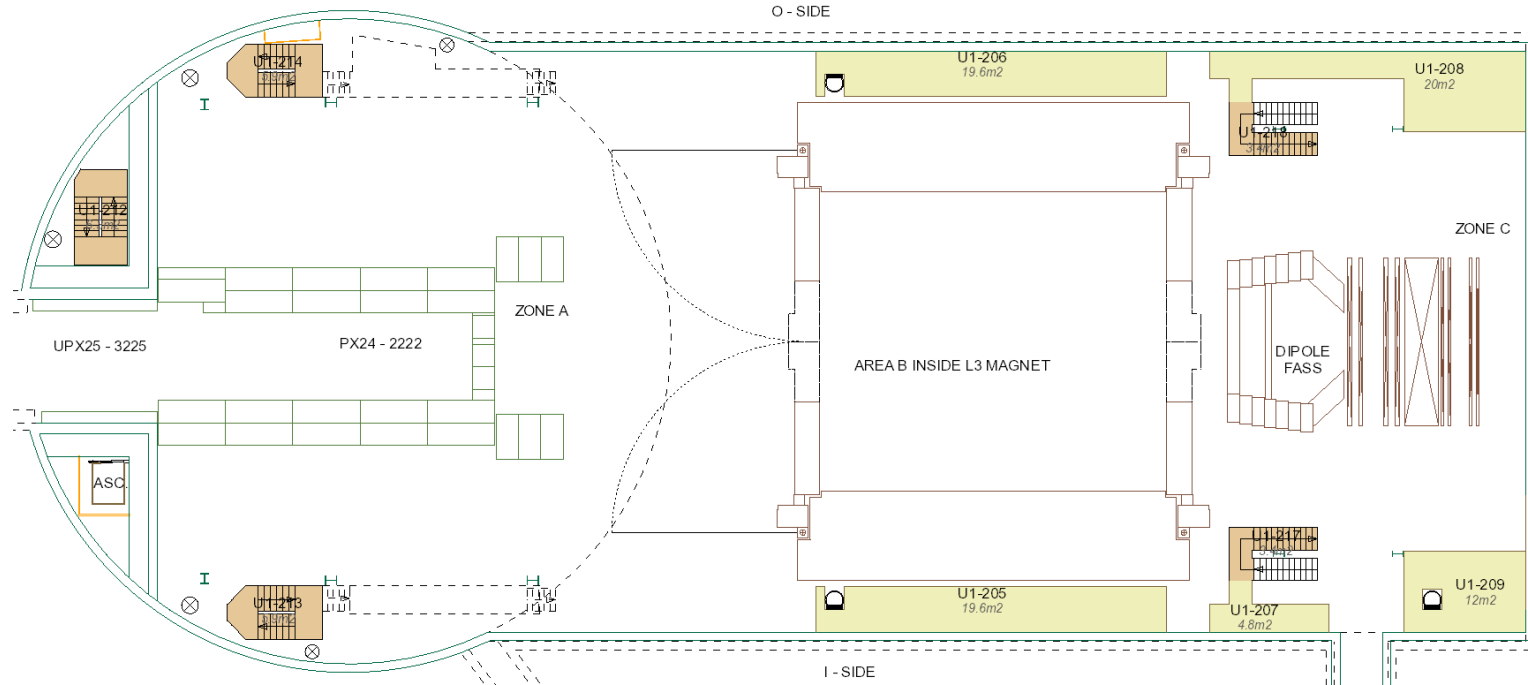
UX25 activities w4 – Tue 21 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



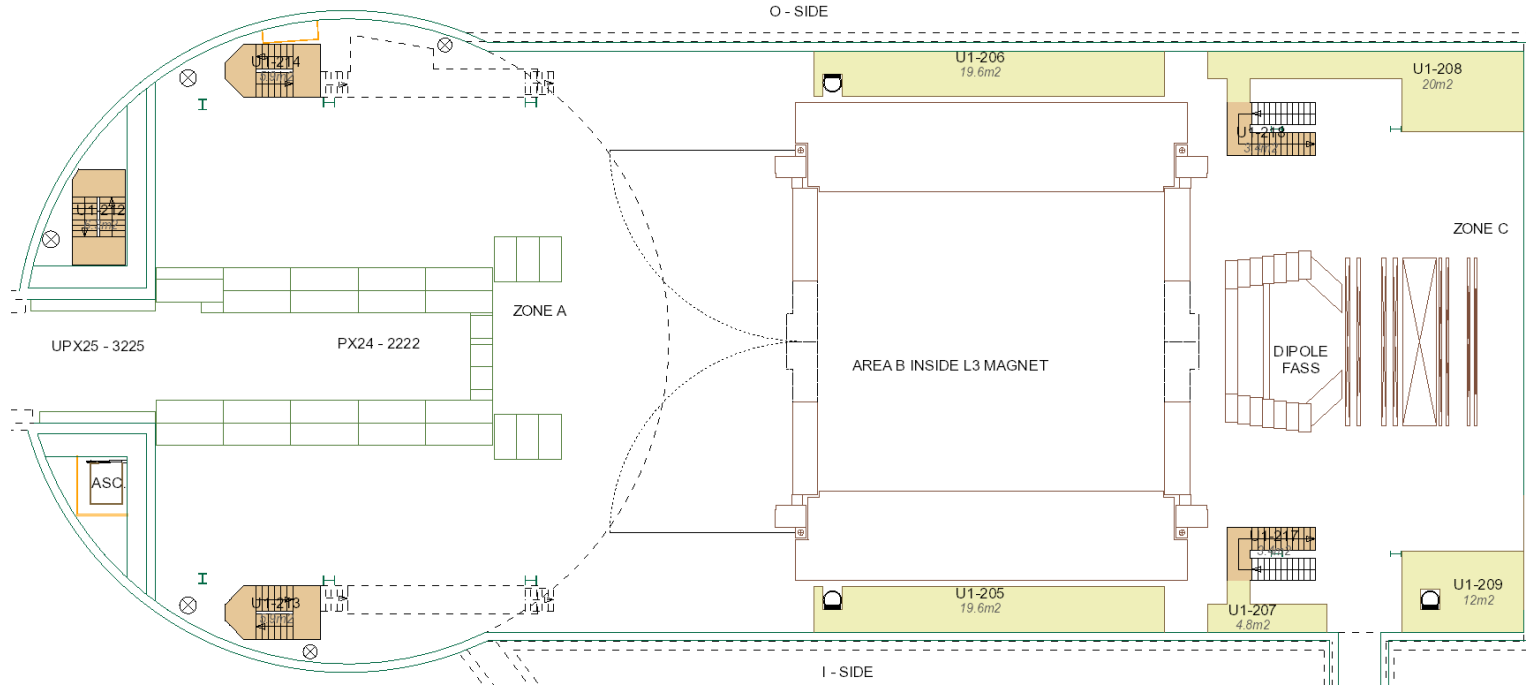
UX25 activities w4 – Wed 22 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



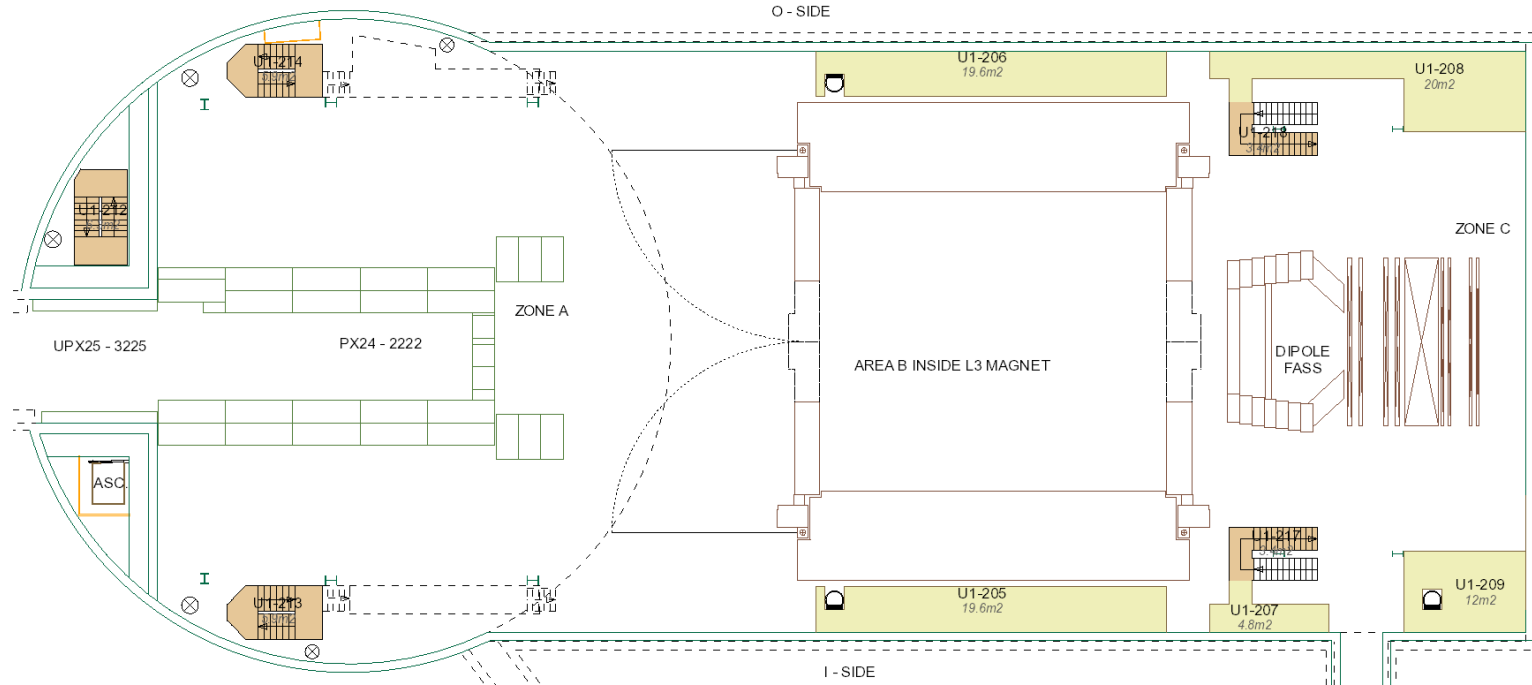
UX25 activities w4 – Thu 23 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



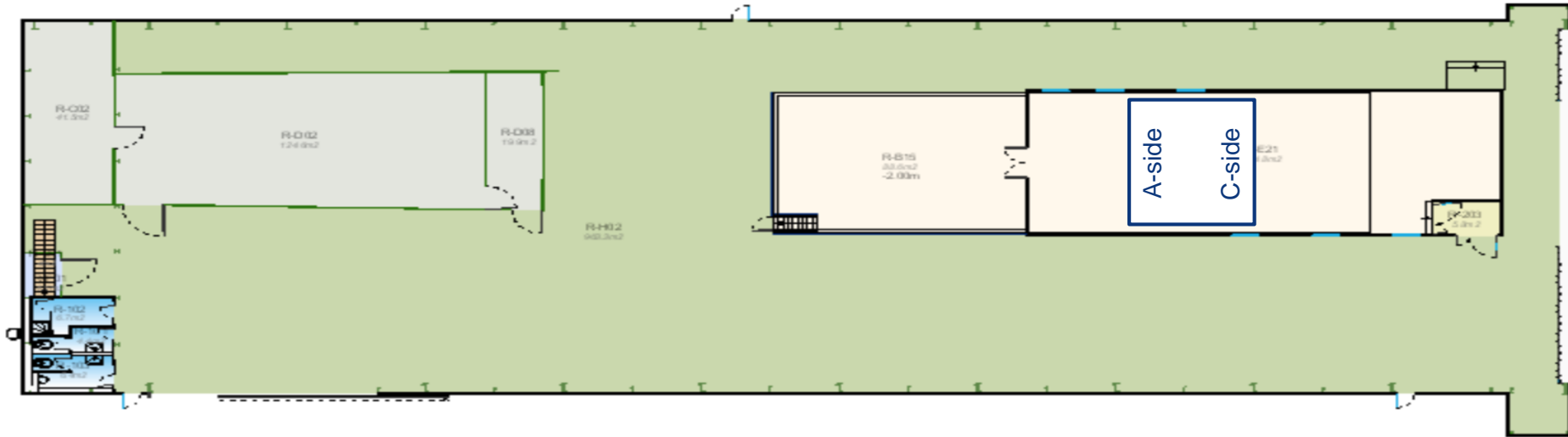
UX25 activities w4 – Fri 24 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



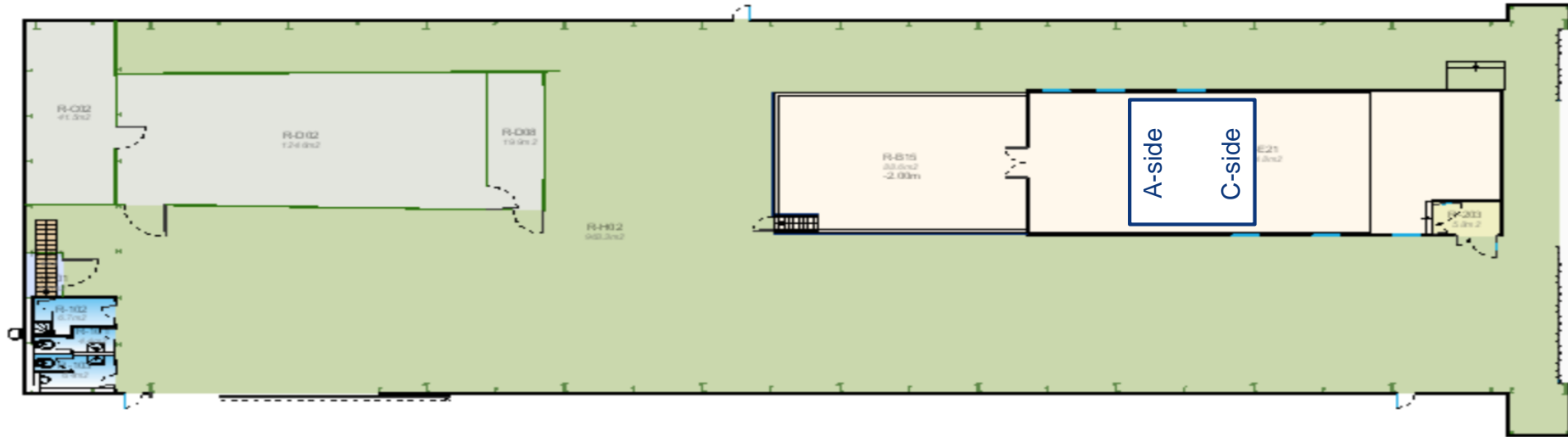
SXL2 activities w4 – Mon 20 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



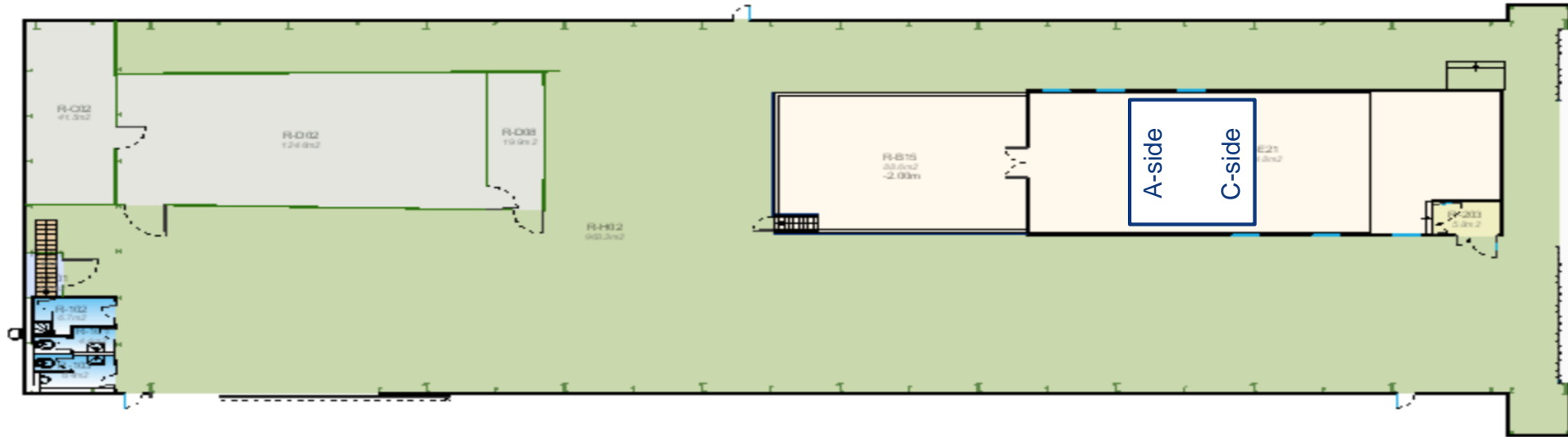
SXL2 activities w4 – Tue 21 Jan 2020

EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2

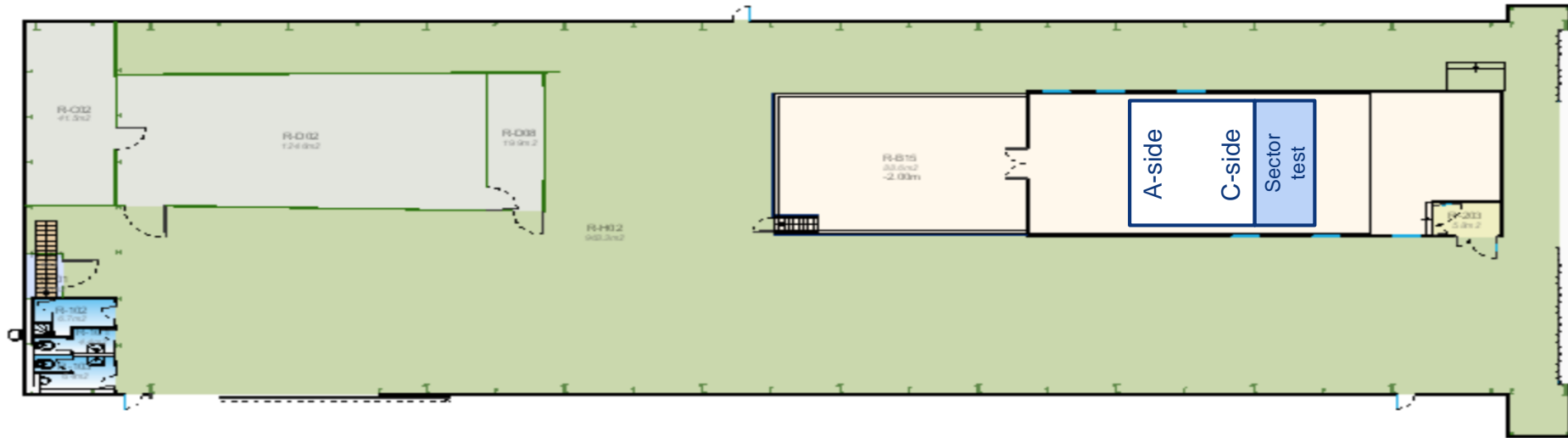


SXL2 activities w4 – Wed 22 Jan 2020

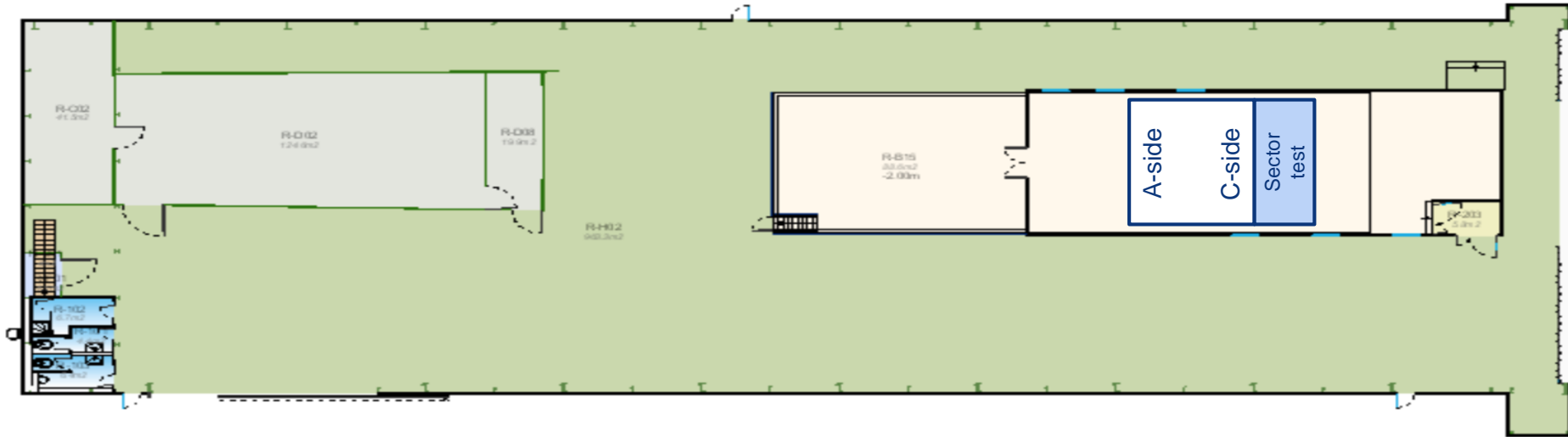
EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



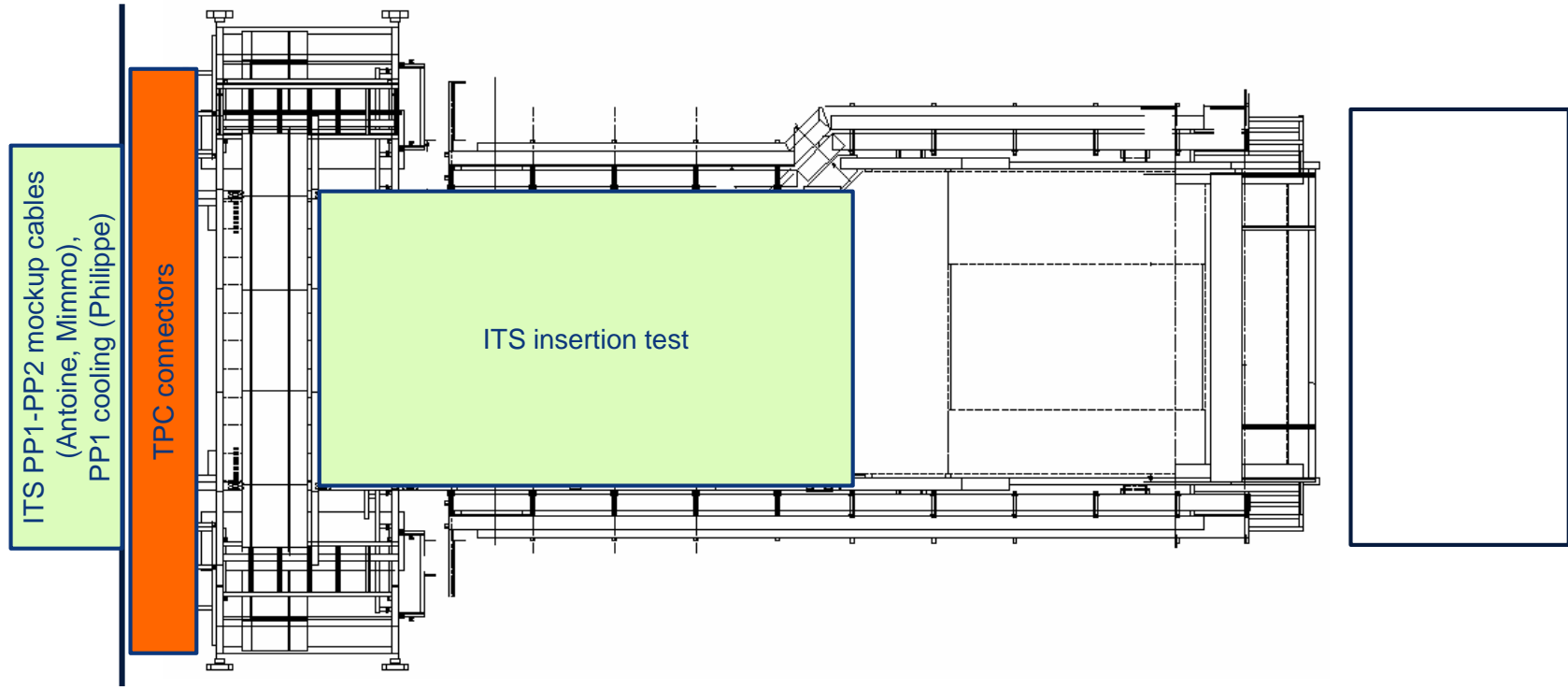
SXL2 activities w4 – Thu 23 Jan 2020



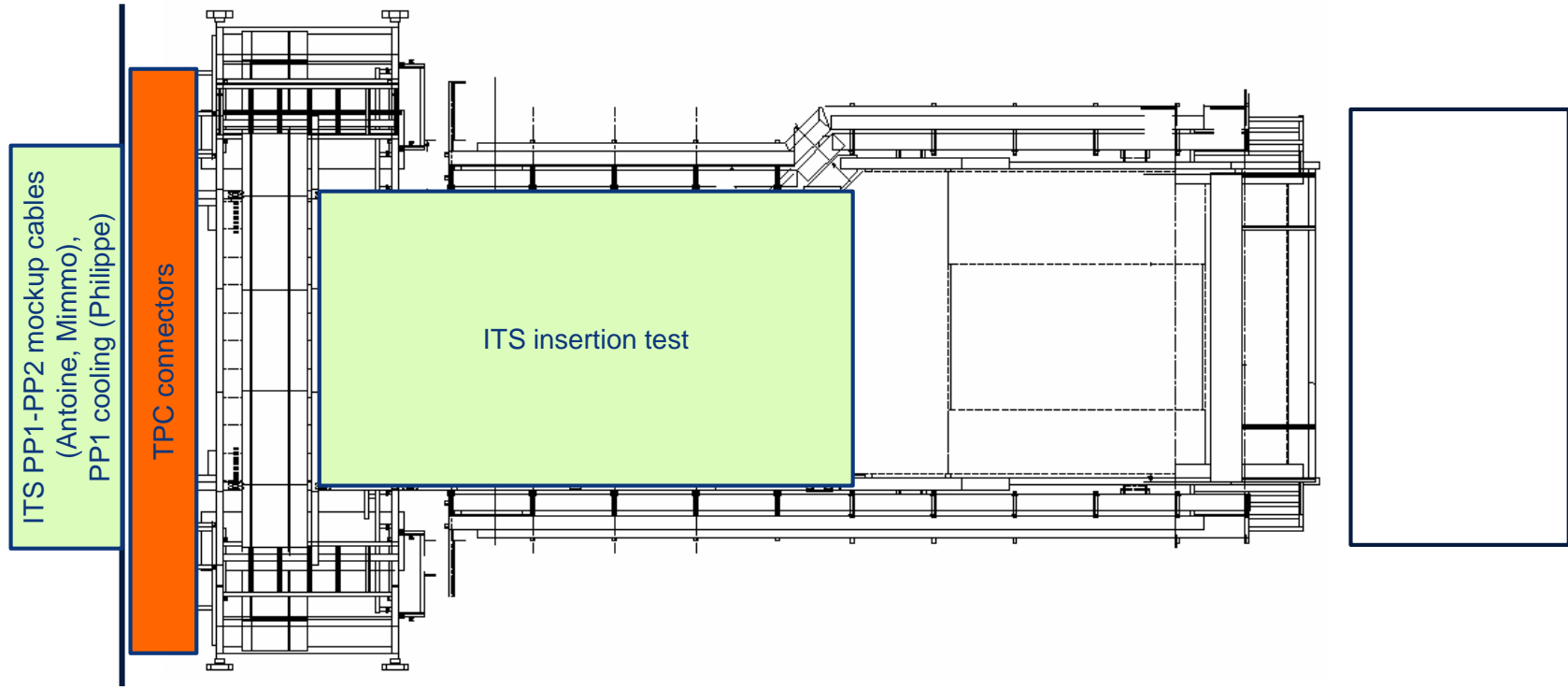
SXL2 activities w4 – Fri 24 Jan 2020



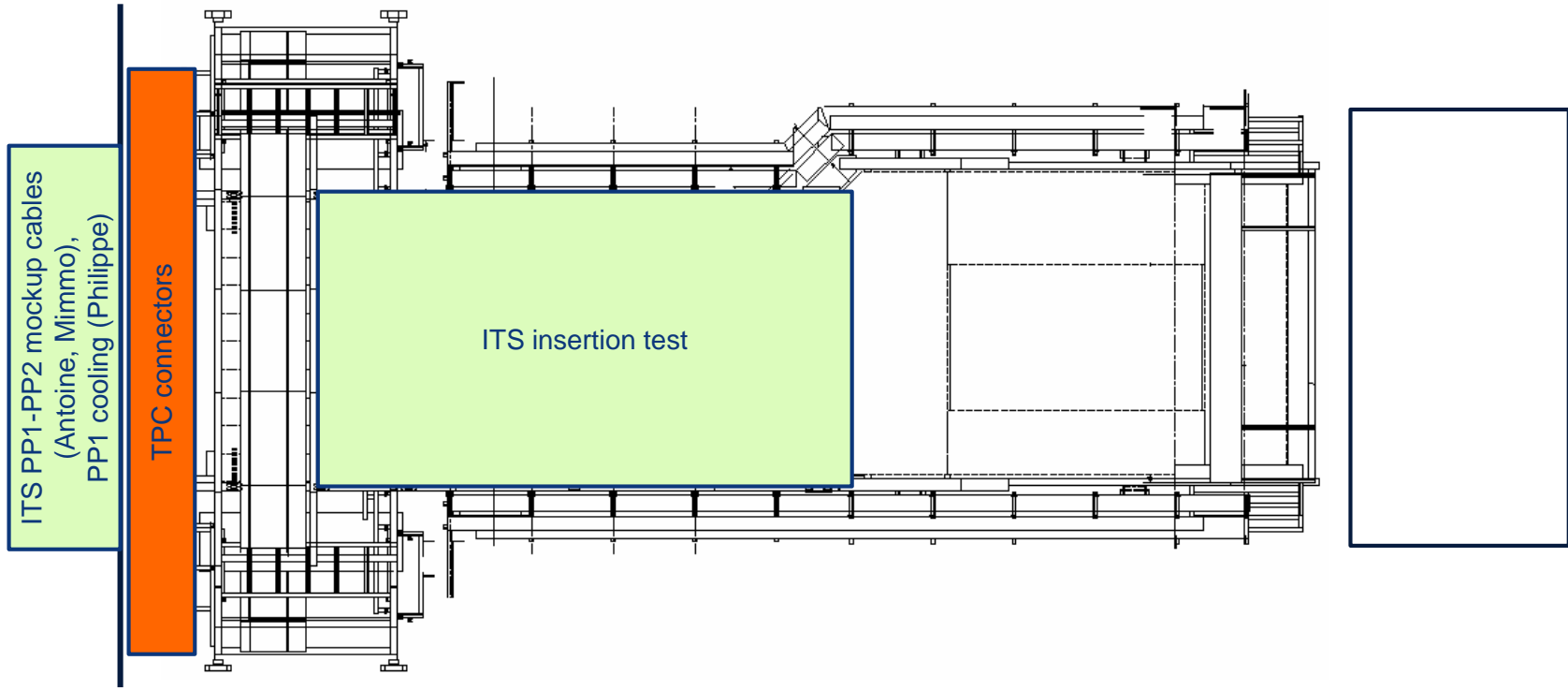
Miniframe activities w4 – Mon 20 Jan 2020



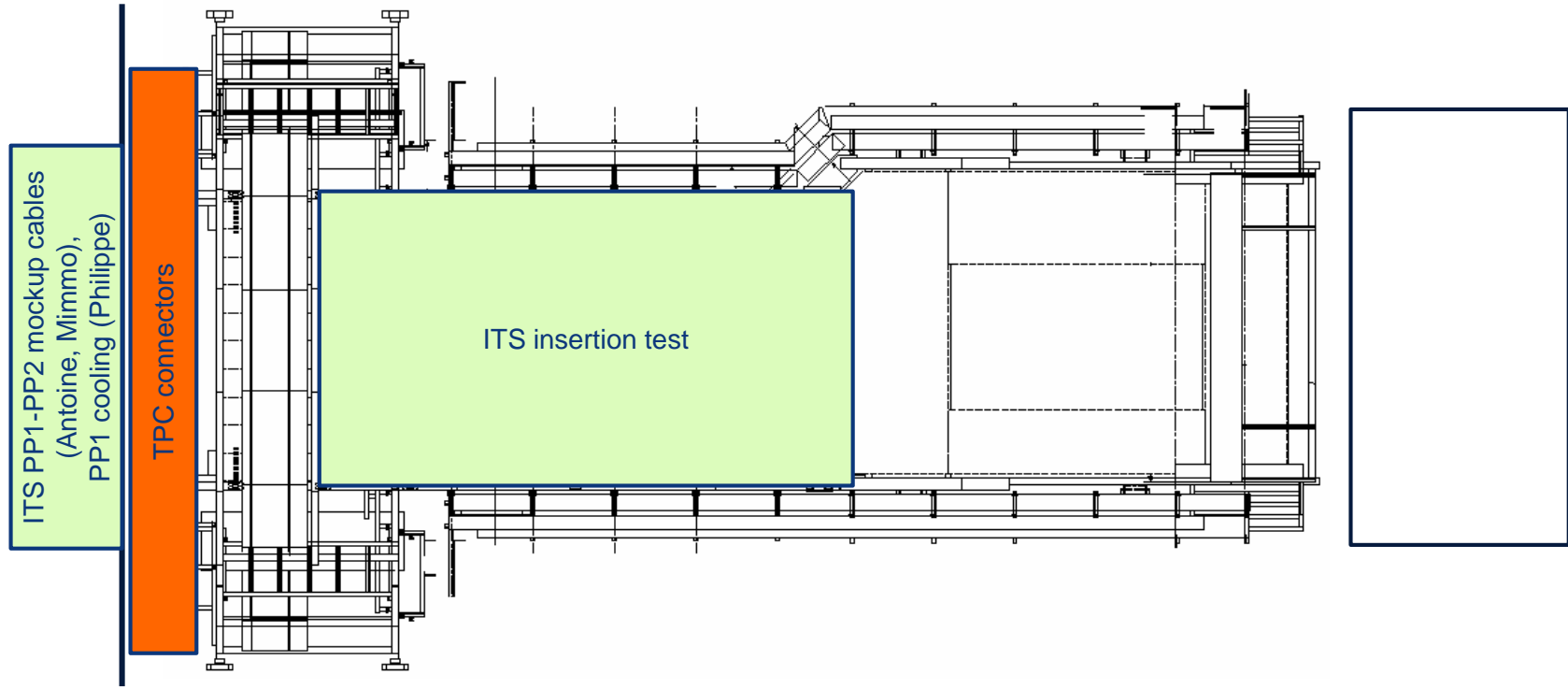
Miniframe activities w4 – Tue 21 Jan 2020



Miniframe activities w4 – Wed 22 Jan 2020



Miniframe activities w4 – Thu 23 Jan 2020



Miniframe activities w4 – Fri 24 Jan 2020

