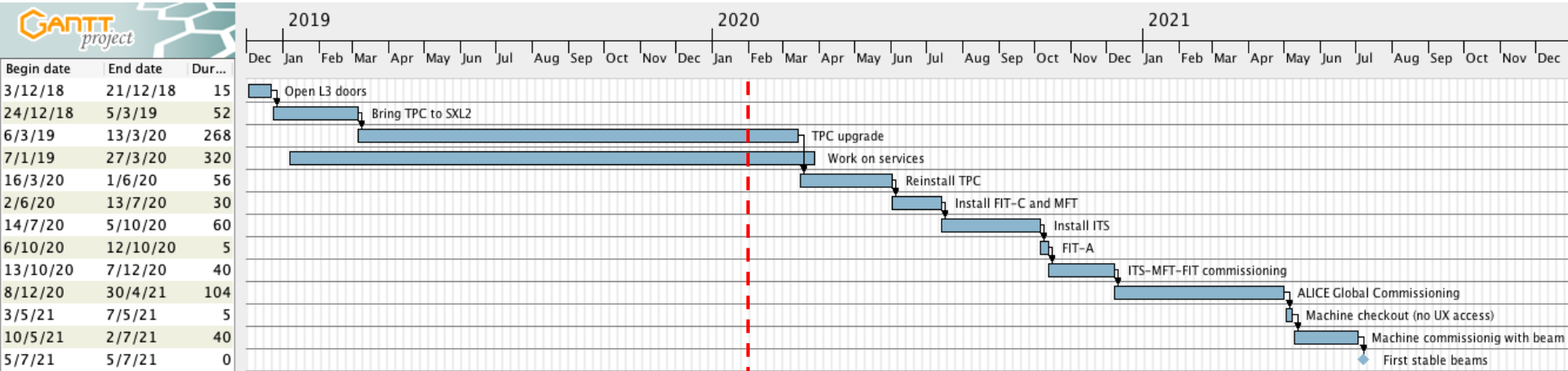


# LS2 planning meeting

A.Tauro



# LS2 master plan (v34)

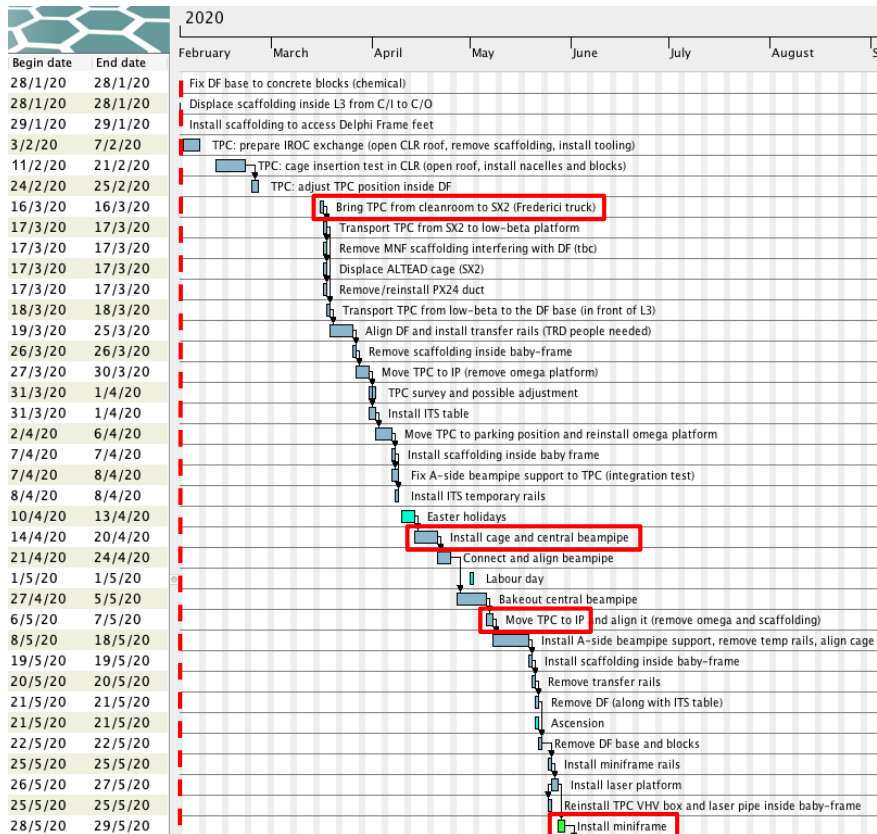


# Key dates

Activity	Date
Move TPC to SX2	16 Mar 2020
Install TPC (parking position)	17 Mar – 9 Apr
Install cage and central beampipe	14 Apr – 5 May
Move TPC to IP	6-7 May
Install Miniframe	28-29 May
FIT-C & MFT installation and checks	2 Jun – 13 Jul
ITS installation and checks	14 Jul – 5 Oct
FDD-C installation	First half Aug*
FDD-A installation	1-10 Sep
FIT-A installation	6-12 Oct
ITS & MFT commissioning time	8w
ALICE global commissioning time	21w
<b>End of LS2 – stop UX25 access</b>	<b>1 May 2021</b>
Start commissioning with beam – ALICE in super-safe	10 May 2021

\* we need to redo tightness UX-RB26 before w35 (start cool down S23)

# TPC & miniframe reinstallation sequence



Jan 5<sup>th</sup> - Mar 13<sup>th</sup> - complete TPC, cage insertion test in SXL2 cleanroom, prepare for TPC transportation, TOF and HMPID activities in the cavern

Mar 16<sup>th</sup> - transportation TPC to SX2

Mar 16<sup>th</sup> - Apr 9<sup>th</sup> - reinstall TPC

TPC moved to IP, adjusted and put back to parking position

Apr 14<sup>th</sup> - May 5<sup>th</sup> - install cage and central beampipe

May 6<sup>th</sup> - 7<sup>th</sup> - move TPC to IP - start connection TPC to services

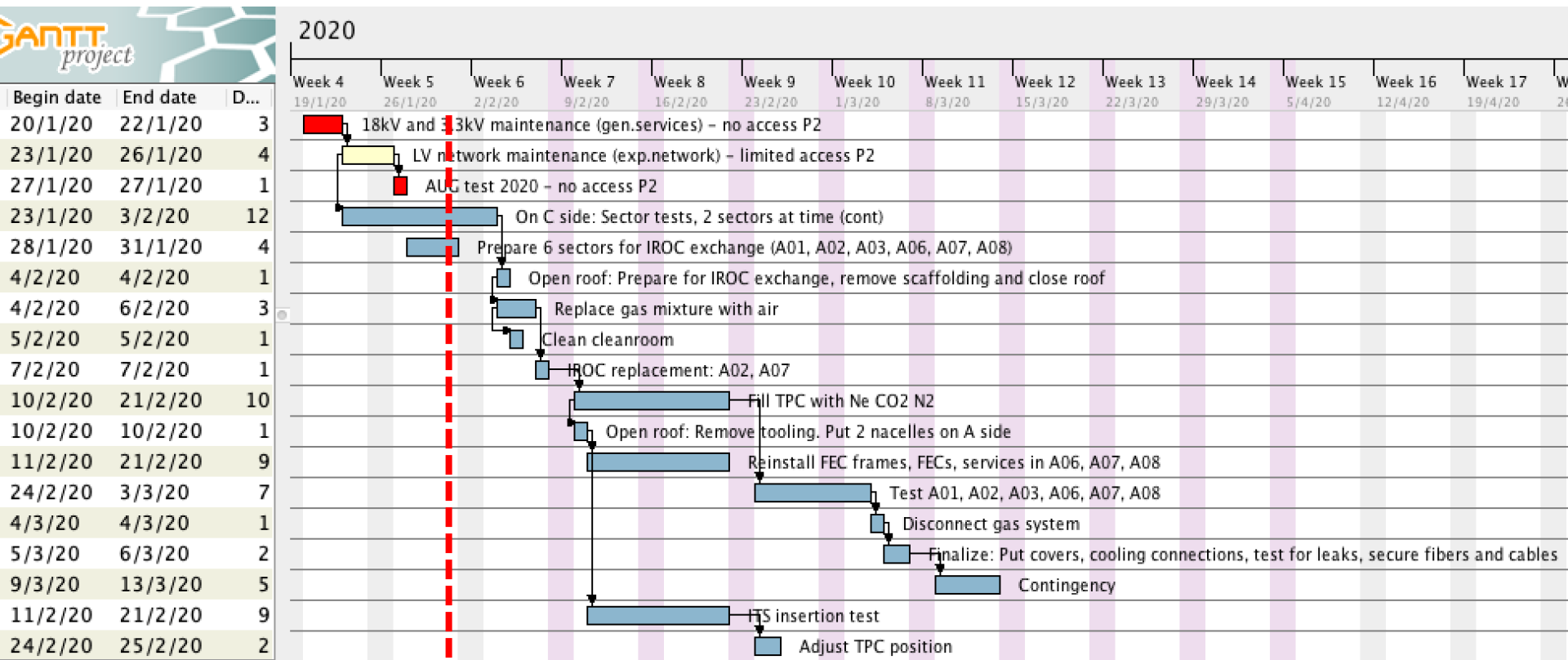
May 8<sup>th</sup> - May 27<sup>th</sup> - prepare miniframe installation

May 28<sup>th</sup> - 29<sup>th</sup> - reinstall miniframe



# TPC upgrade sequence

TPC schedule v41



# TPC upgrade sequence



Done

Remove Services and FEE  
(outside cleanroom)



Done

Uninstall MWPC ROC



Done

Install GEM ROC



Done

Install new FEC + test



Ready for transportation to  
SX2

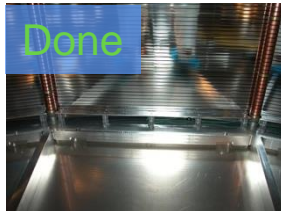


Done

TPC in cleanroom.  
Cleaning & irradiation tests

7 Mar

11 Apr



Done

FC HV infrastructure  
modification

25 Apr (A)  
5 Aug (C)

13 May (A)  
16 Aug (C)



Done

Survey, shimming,  
sealing

14 Jun (A)  
25 Aug (C)

5 Jul (A)  
16 Sep (C)



Ongoing

Pre-commissioning with  
cosmic, Laser, pulser, Xray

14 Oct (A)  
31 Oct (C)

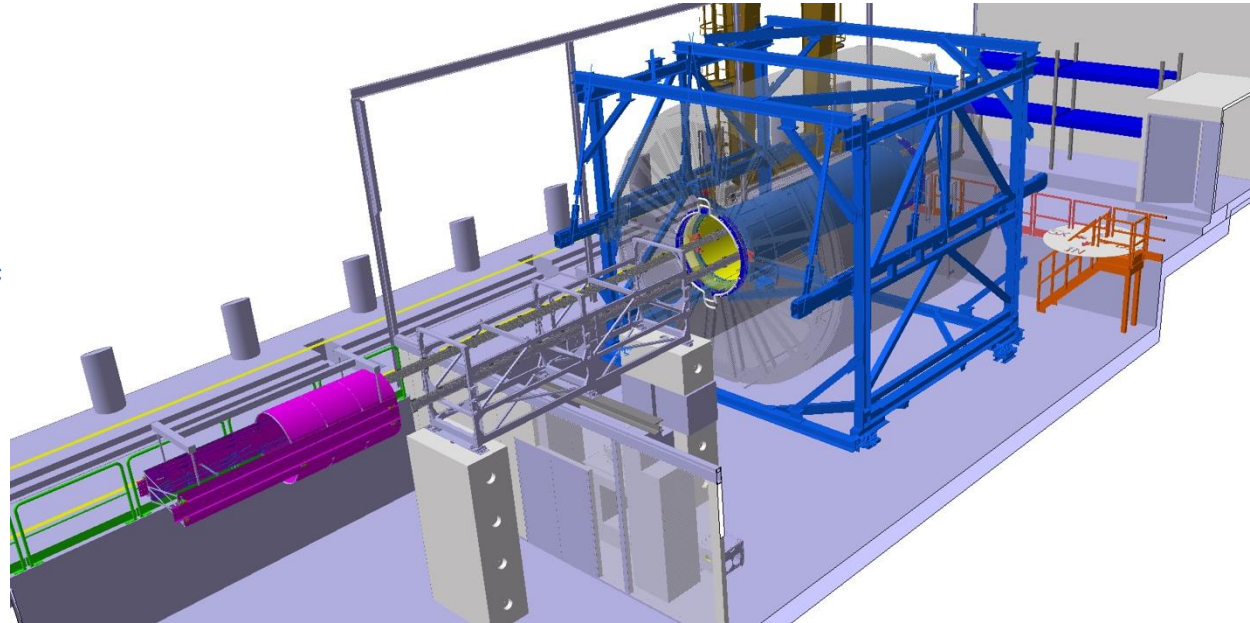
25 Nov (A)  
3 Feb (C)

13 Mar 2020

TPC schedule v41

# Cage insertion test

- **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 7-8, after TPC ROC exchange**

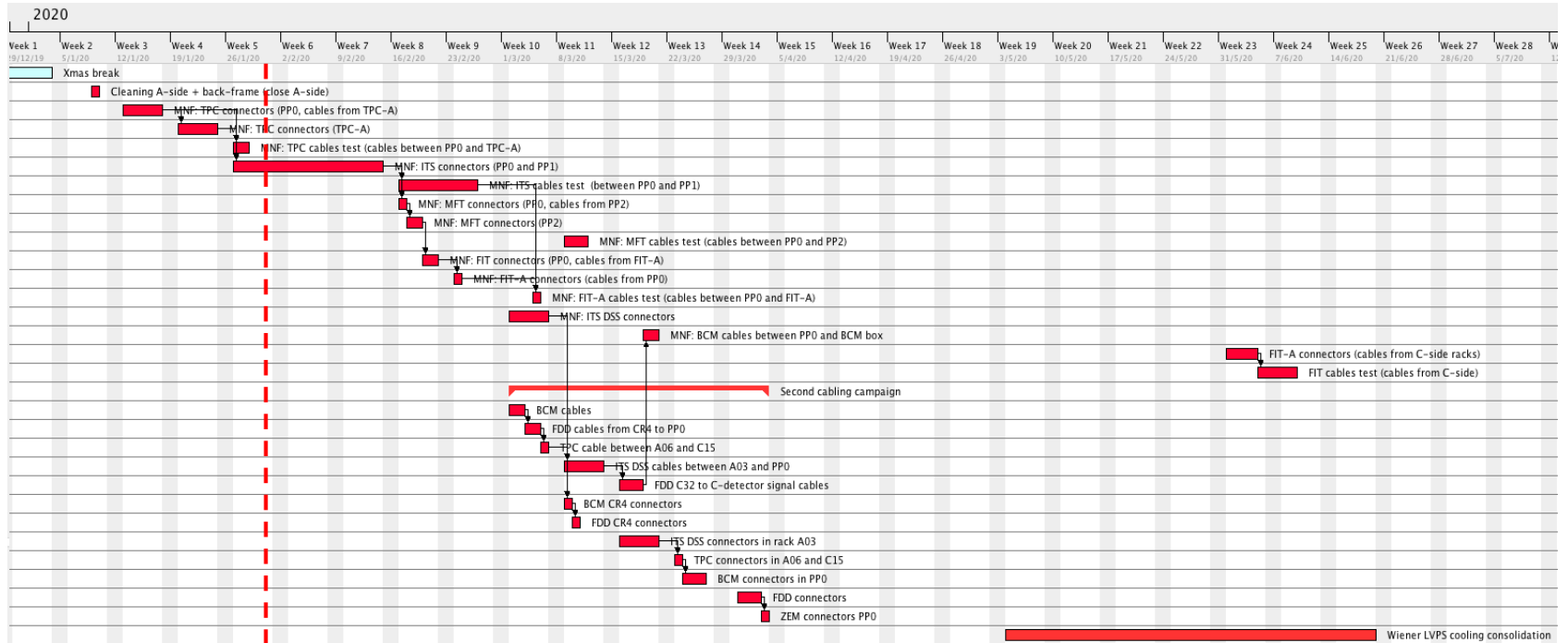


# ITS and MFT barrels insertion test (MNF)



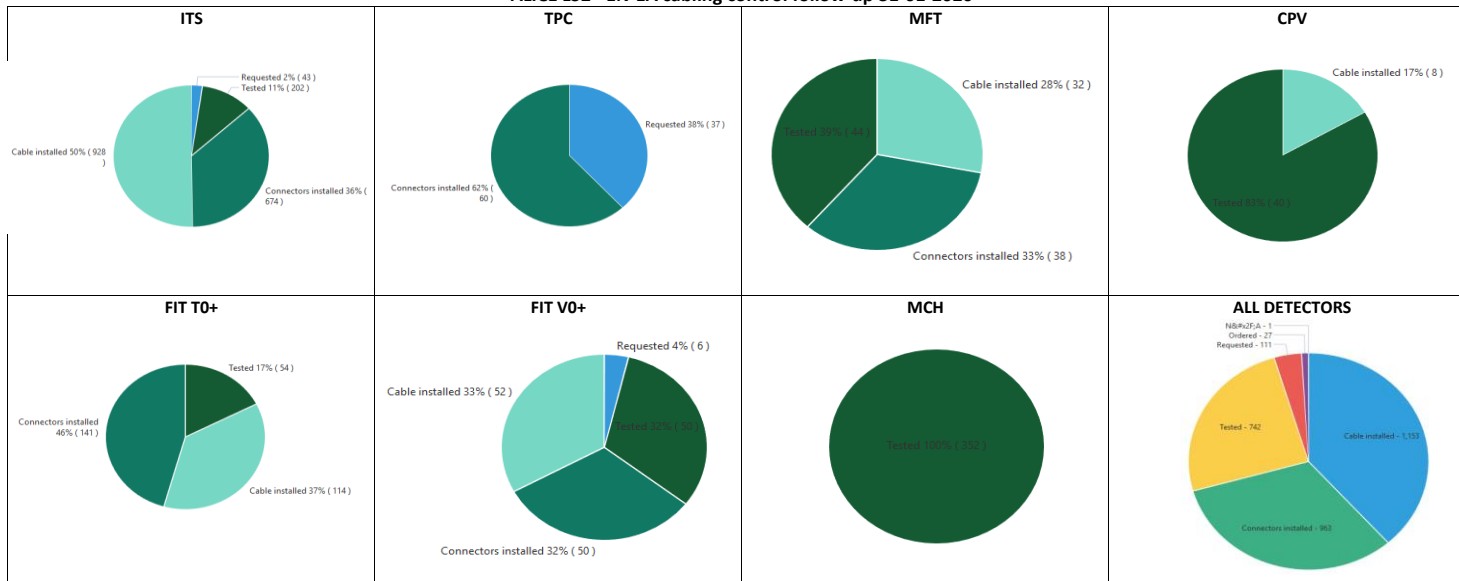


# Copper cables (EN-EA)



# Copper cables (EN-EA)

ALICE LS2 - EN-EA cabling control follow-up 31-01-2020

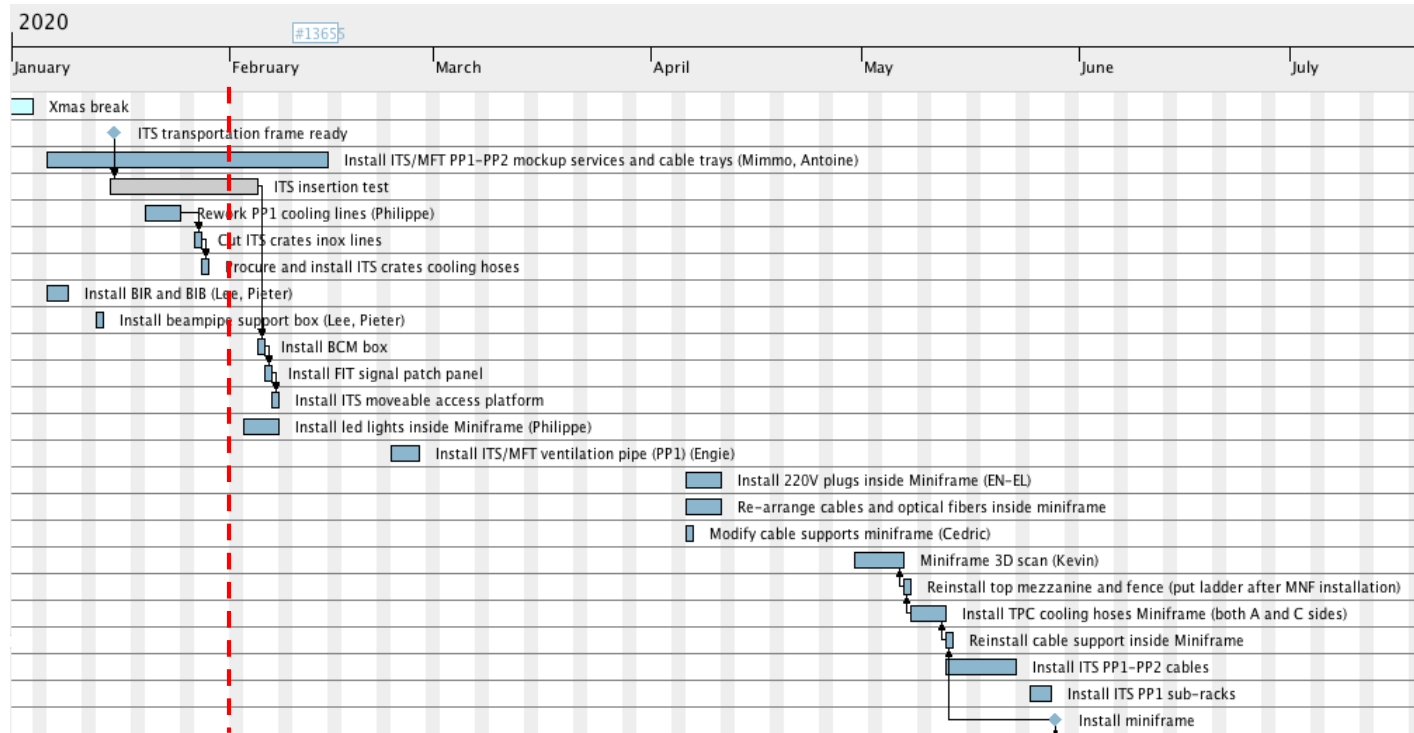


Progress pulling: 95%  
 Progress connectors: 57%  
 Progress test: 25%

# Optical fibers (EN-EL)

Description		December												January 2020												February											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
		S50	S51	S5: S01	S02	S03	S04	S05	S06	S07	S08	S09																									
TPC-C & TOF trunk (FASS O-Side) (10.70)	POSE																																				
	TERMINATION																																				
	MATERIEL																																				
60 TRUNK 144 OF 27m (SURFACE)	POSE																																				
	TERMINATION																																				
	MATERIEL																																				
MFT trunk (FASS O-Side) (50)	POSE																																				
	TERMINATION																																				
	MATERIEL																																				
INSTALLATION D'UN DUCT ET SOUFLAGE D'UN CÂBLE	POSE																																				
	TERMINATION																																				
	MATERIEL																																				

# Miniframe schedule



# EN-EL interventions

- 18kV, 3.3kV and LV network maintenance: 20-24 Jan 2020 – Done
- AUG on Monday 27 January 2020 – Done
- Auto transfer test: 27-29 Apr 2020
- Test secours (10 min at 6:00 AM): 26 May 2020

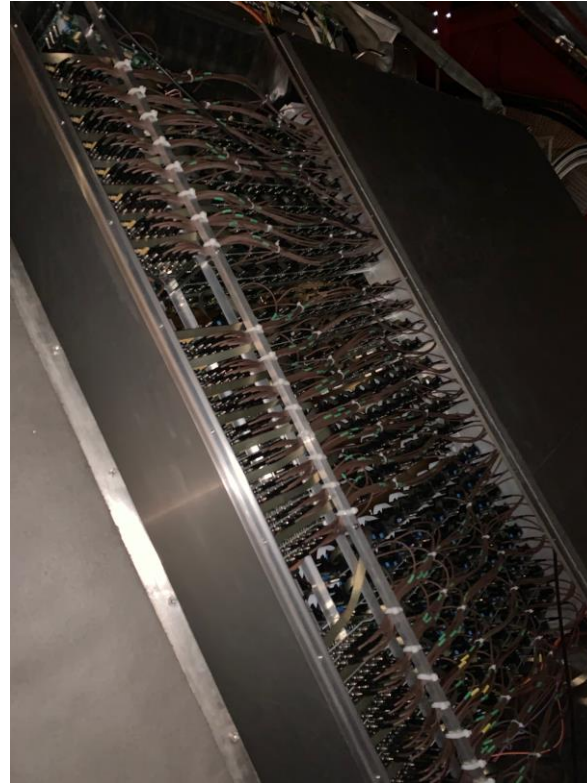
# Racks status

- 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, I03, I04, I05, I30, I31, I32
  - TRD: O26, O27, O28, O29, C16-18, I08, O08, C19, C29
  - DCal: A14

# EN-CV interventions

- **Big maintenance:**
  - SF: from Nov 2019 to mid Jan 2020. NO impact on ALICE as both magnets will be OFF – done
  - 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 → transparent but need to reduce mixed-water consumption
- **Stop demineralized water from 17 to 20 December 2019**
- **Ventilation:**
  - ~~SG2 (2019): w7/2019~~
  - SG2 (2020): Tue-Wed - w3/2020 – DONE
  - ~~Gas extraction: w8/2019~~
  - ~~UX25 cavern: w2/2020~~
  - MCH and MTG: Mon-Thu - w3/2020 – DONE
  - 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.

# HMPID M3 opening



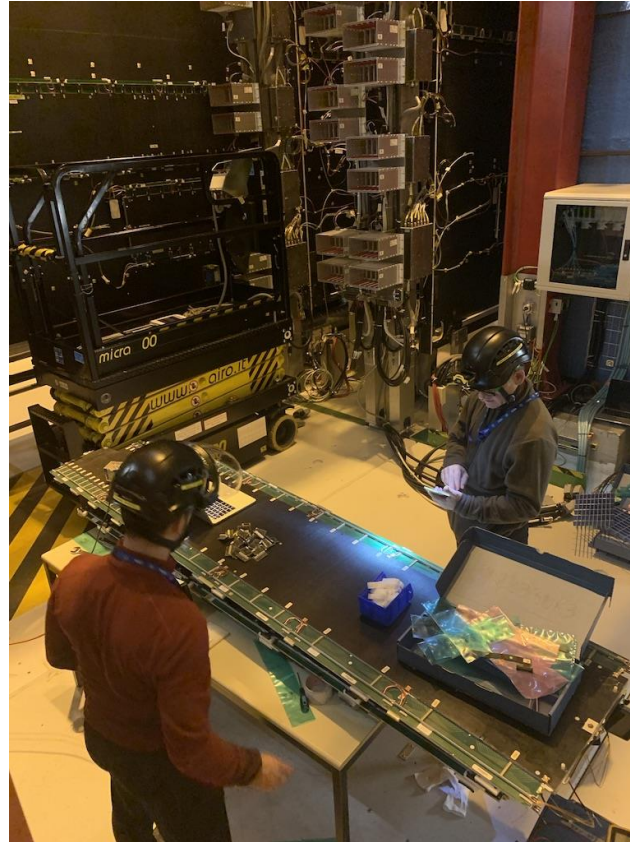
M3 cover shifted  
right wards 40cm

Intervention on  
electronics next  
Monday

M4 opening next  
week



# Muon work



# Other tests foreseen in 2020-21

## 2020:

- LASS functional test: no access to UX25 on Monday 3 Aug 2020 whole day (weekend 8-9 Aug as contingency)
- LASS global verification of entire LHC: 1 day no access to UX25 (date tbc)
- BIW test: no access underground on 5 and 6 Oct 2020 from 18:00 to 00:00

## 2021:

- DSO test: no access to UX25 on 8 and 9 Mar 2021 (tbc)
- LHC sector test (beam through ALICE): no access to UX25 from 26 to 29 March 2021

# Day-by-day sequence w4

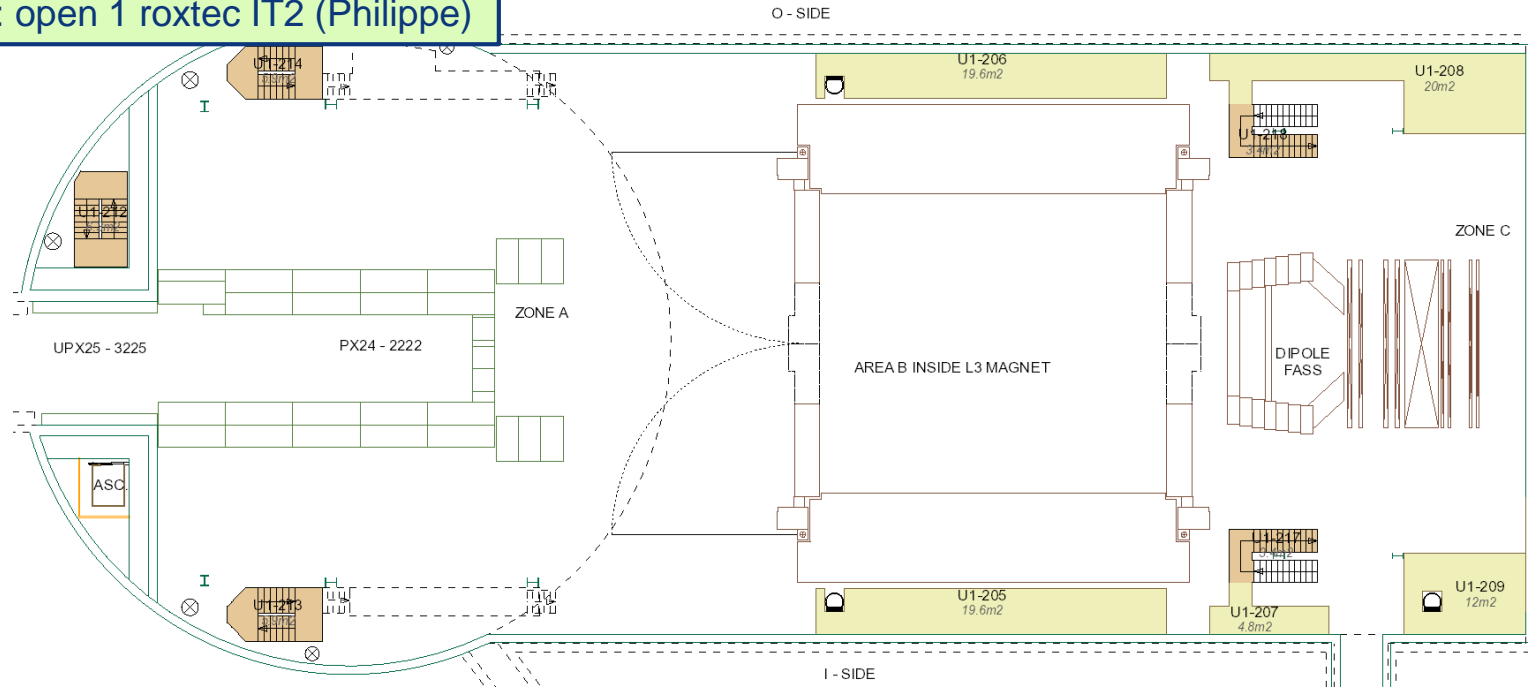


# UX25 activities w4 – Mon 20 Jan 2020

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

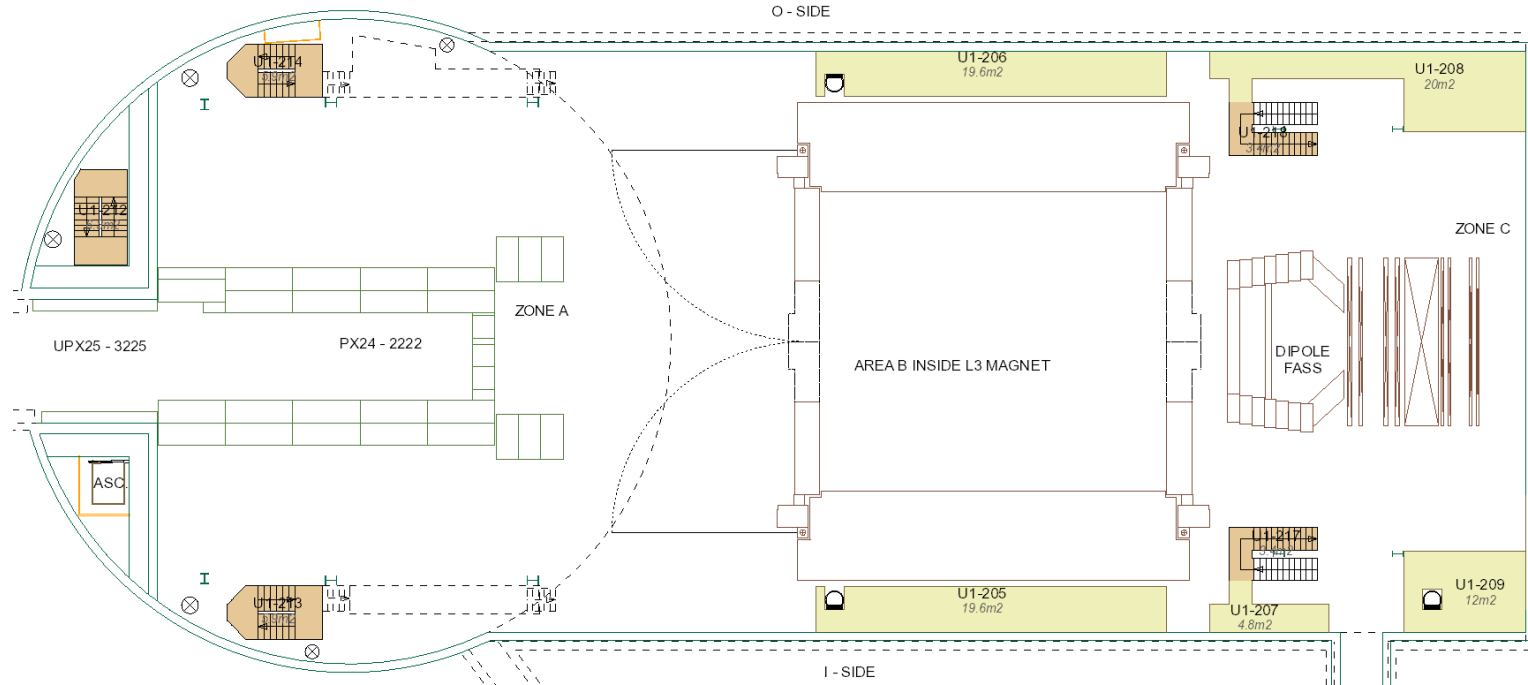
CR3: install TA valves, redo flexible hoses distribution (Philippe + Bruno) – whole week

CR0: open 1 roxtec IT2 (Philippe)



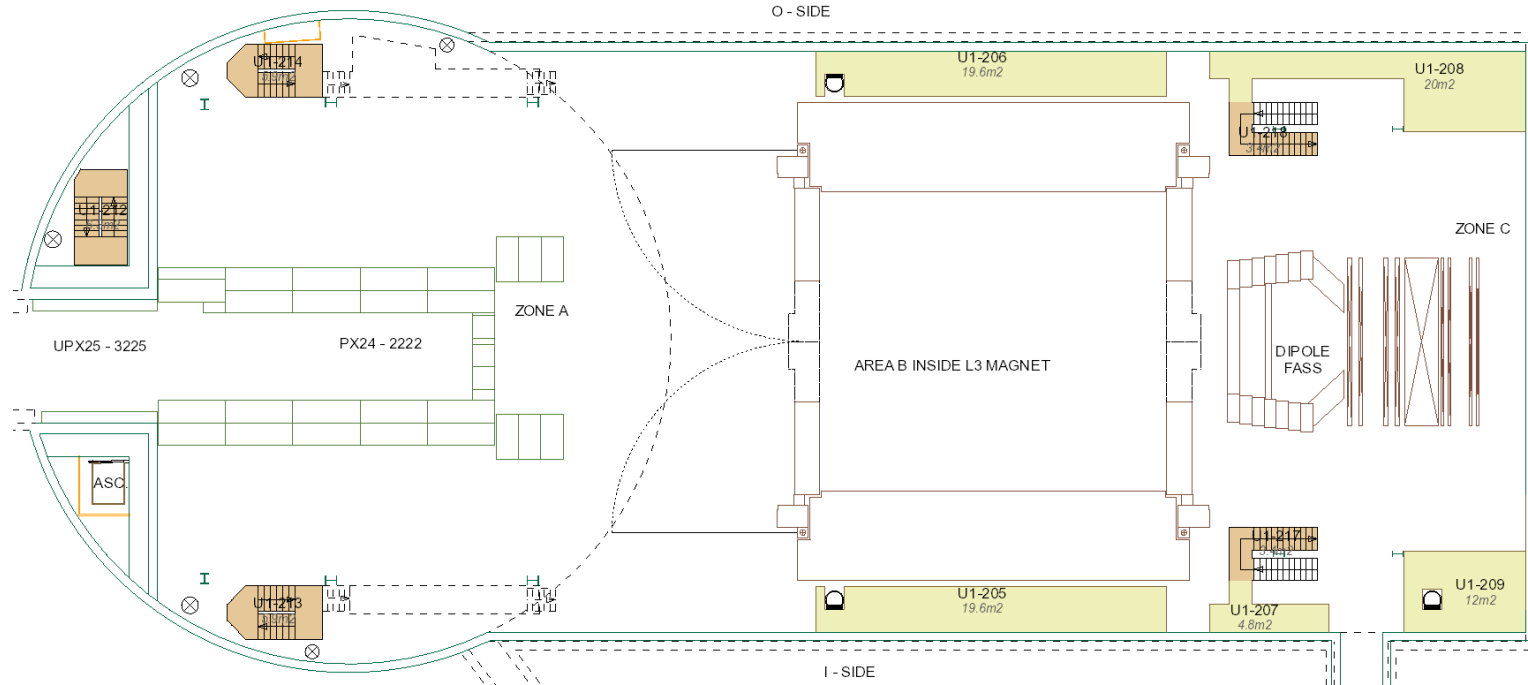
# UX25 activities w4 – Tue 21 Jan 2020

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



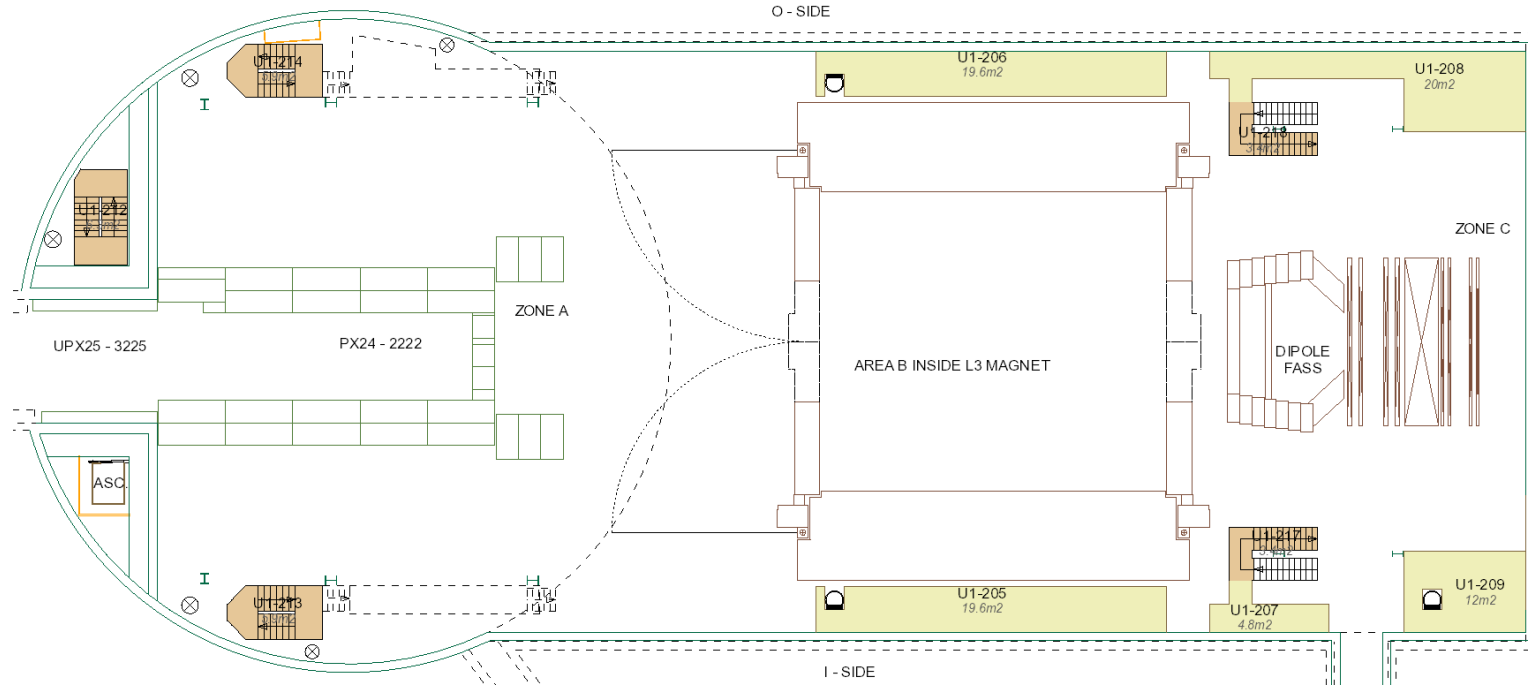
# UX25 activities w4 – Wed 22 Jan 2020

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



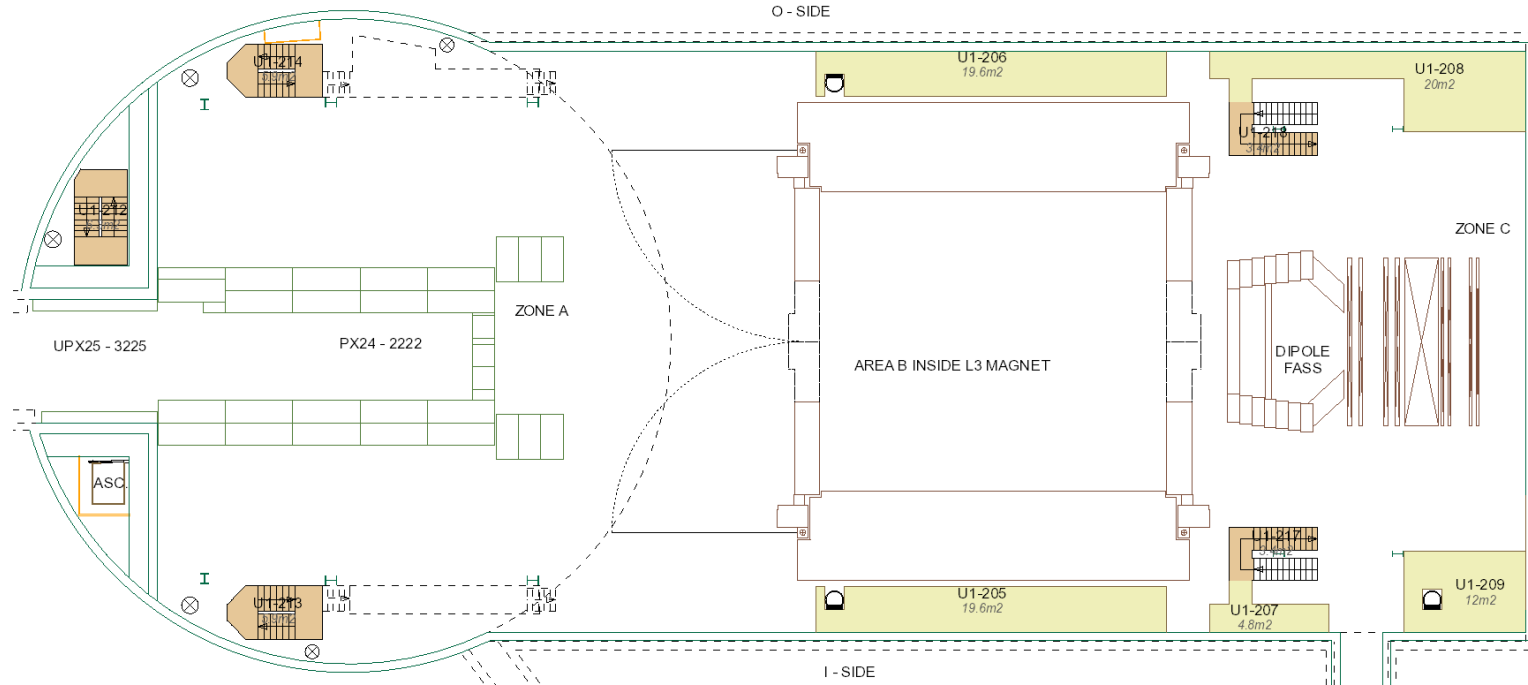
# UX25 activities w4 – Thu 23 Jan 2020

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



# UX25 activities w4 – Fri 24 Jan 2020

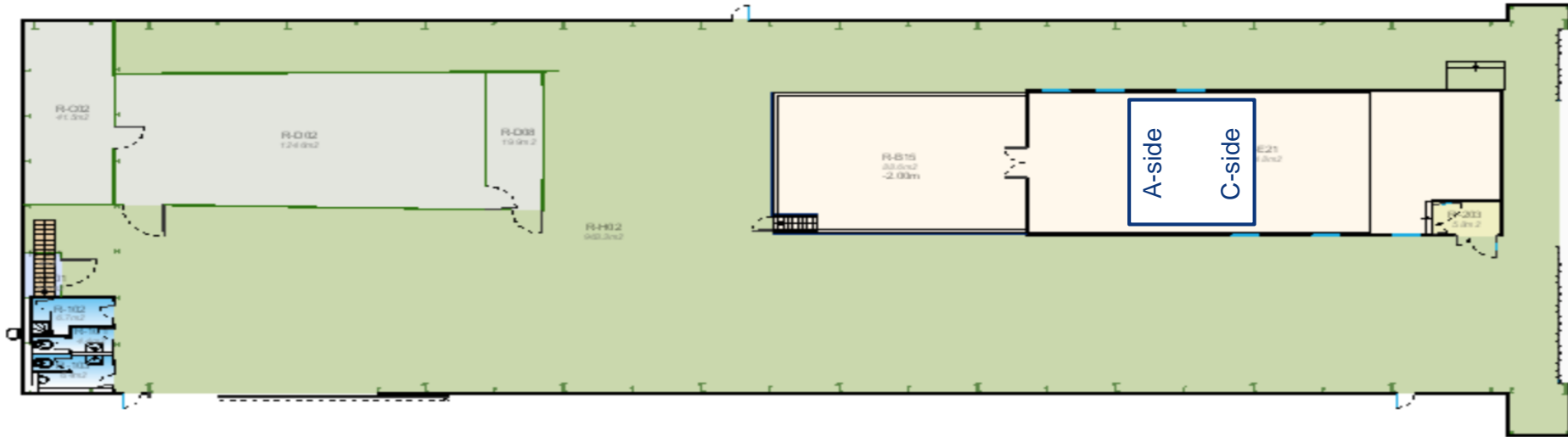
EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2





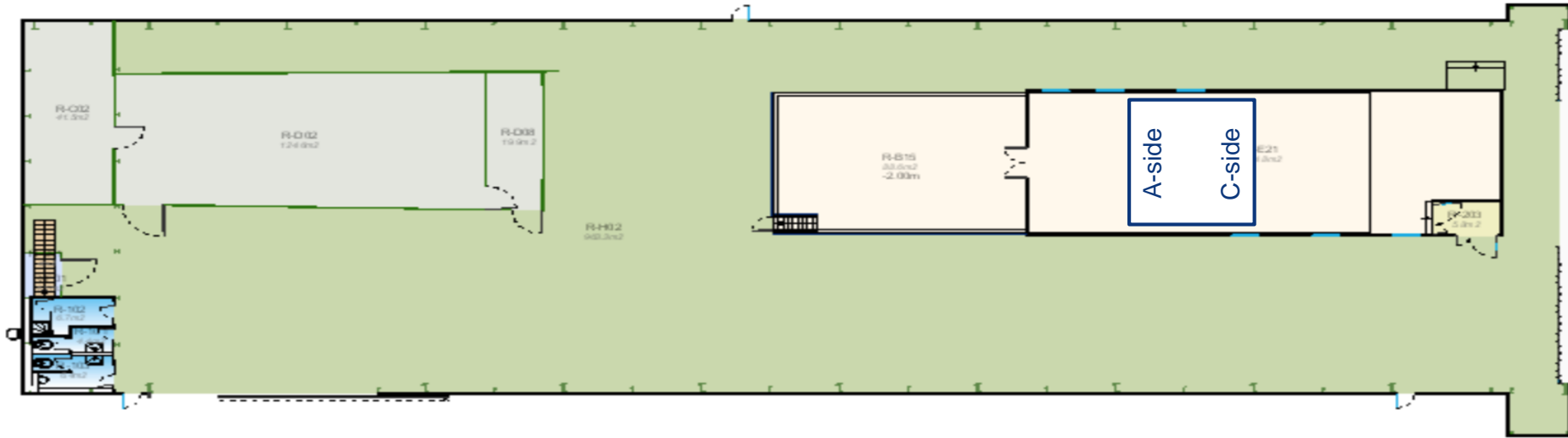
# SXL2 activities w4 – Mon 20 Jan 2020

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



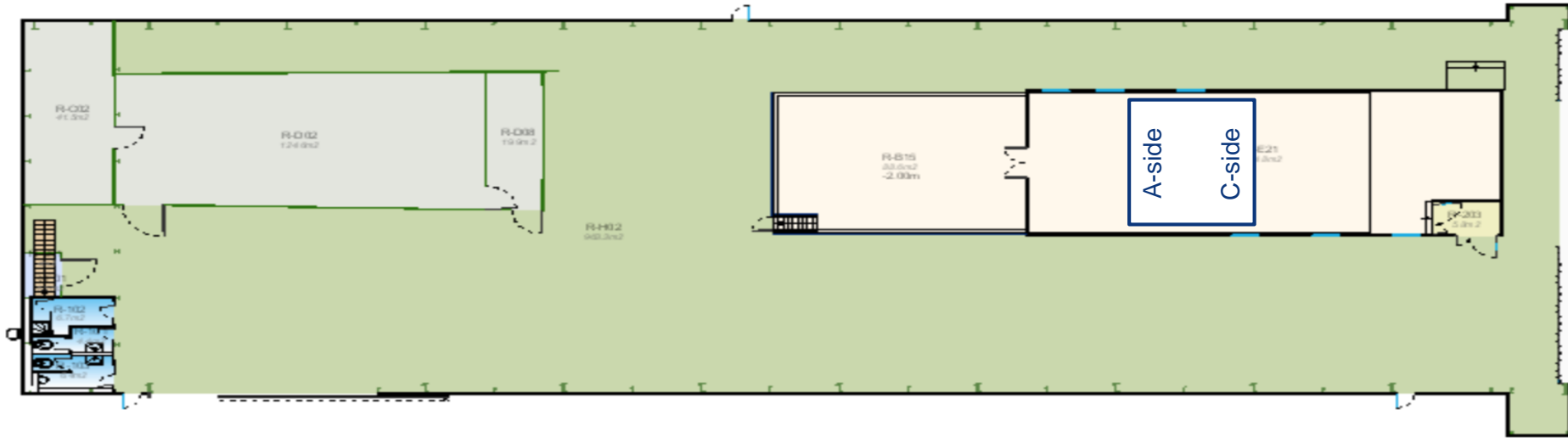
# SXL2 activities w4 – Tue 21 Jan 2020

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

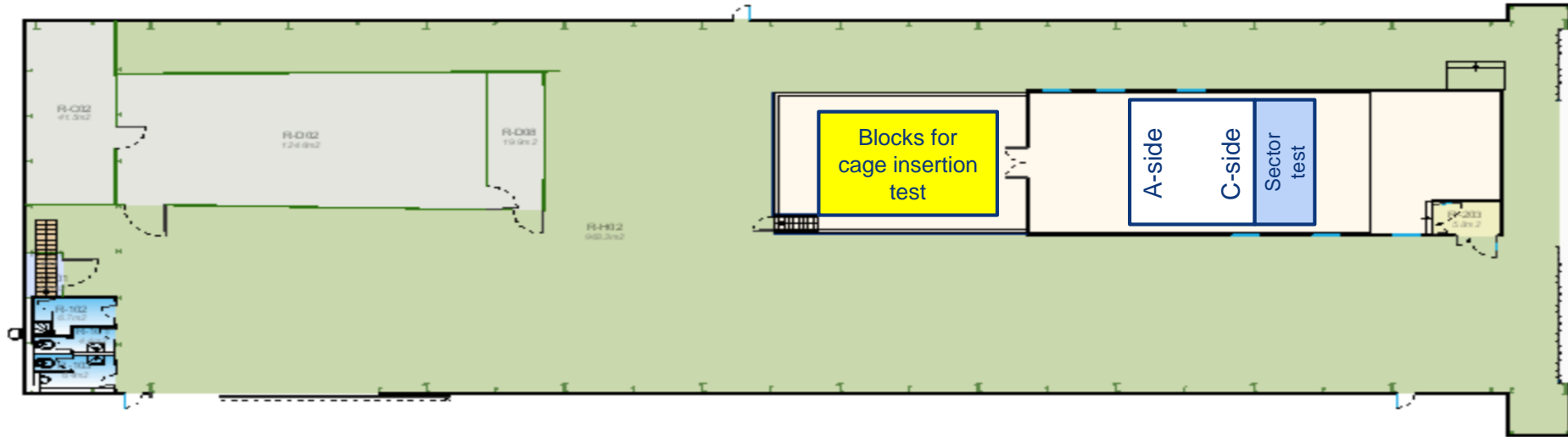


# SXL2 activities w4 – Wed 22 Jan 2020

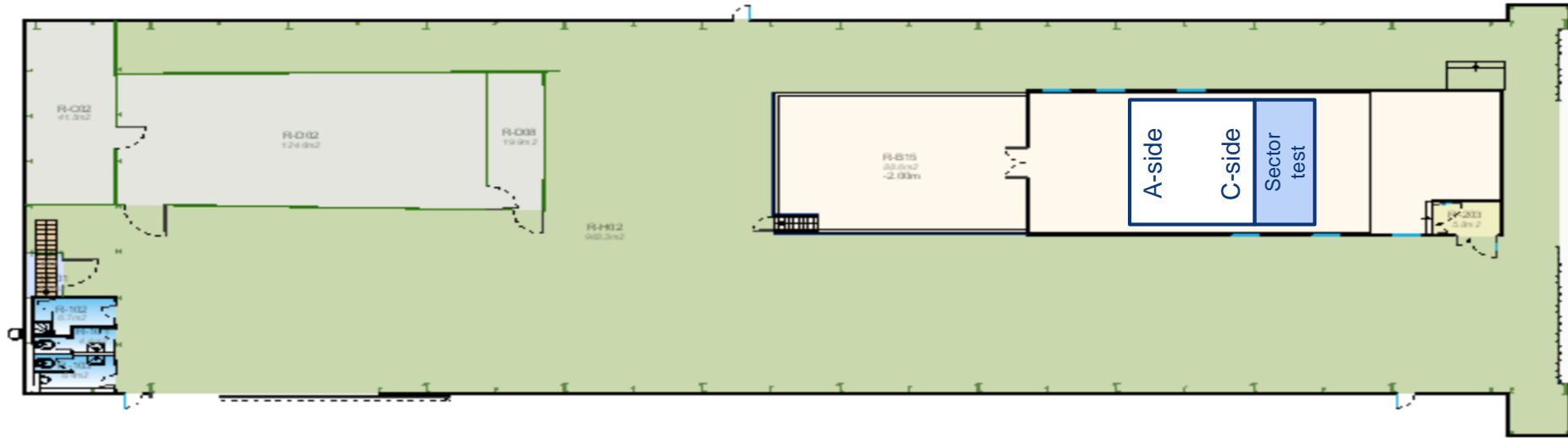
EN-EL: 18kV, 3.3kV and LV network maintenance → NO access to P2



# SXL2 activities w4 – Thu 23 Jan 2020



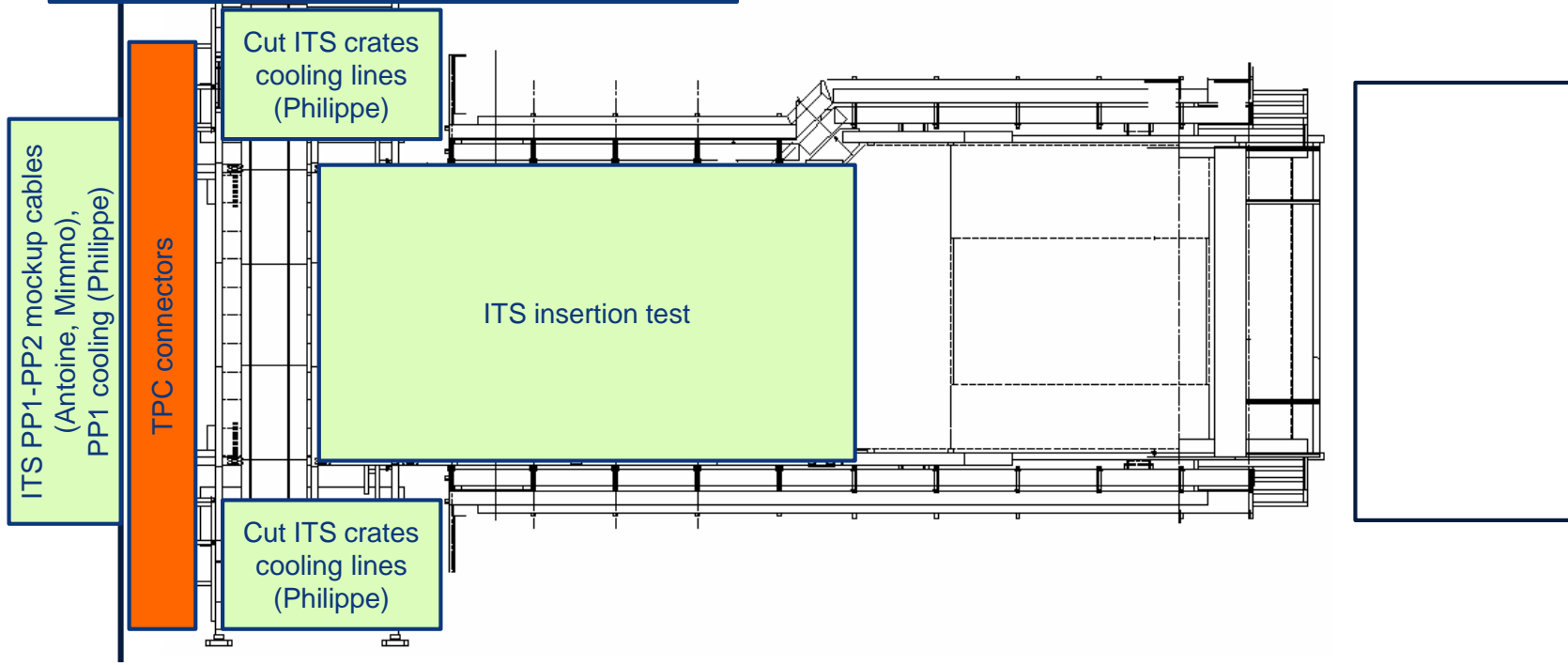
# SXL2 activities w4 – Fri 24 Jan 2020



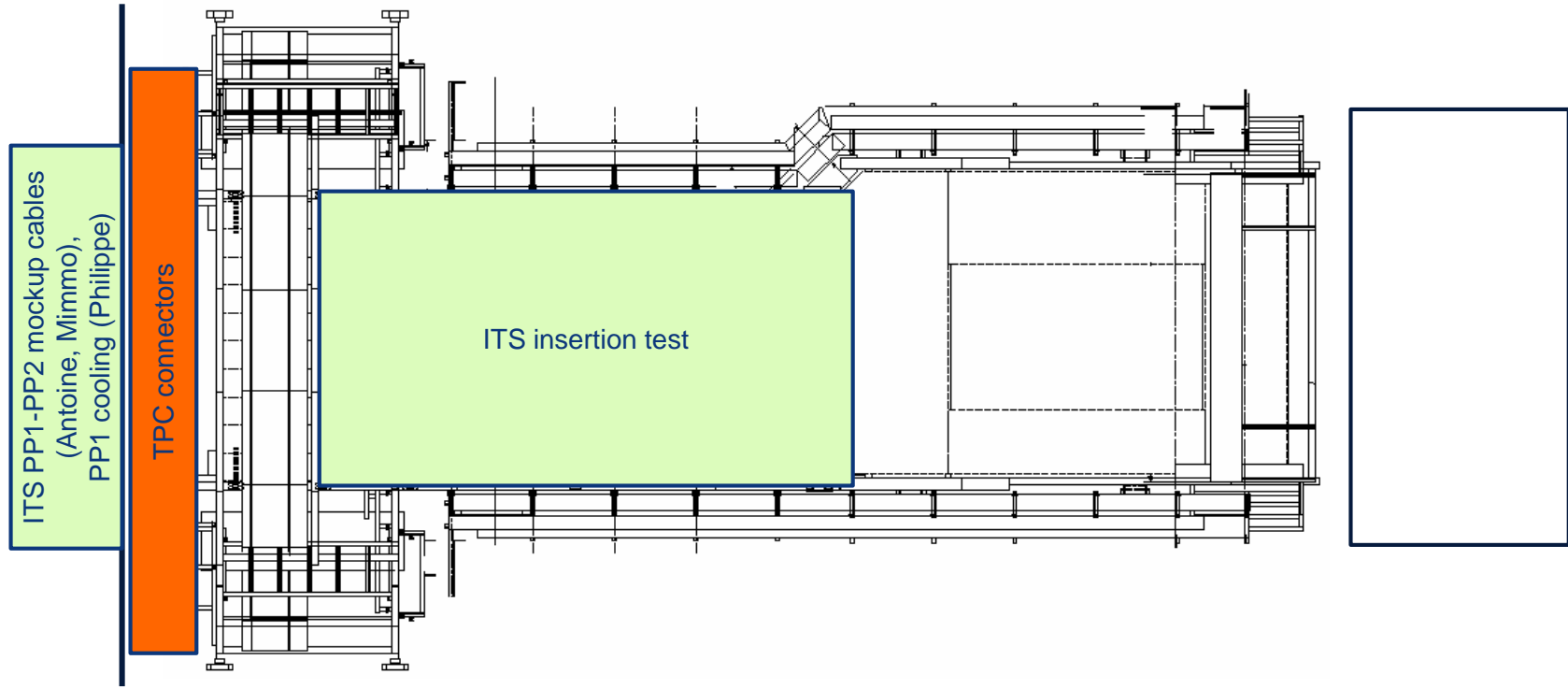
# Miniframe activities w4 – Mon 20 Jan 2020

Produce and install steps to protect FO boxes; finish ITS rack supports; build ITS rack trap (Cedric)

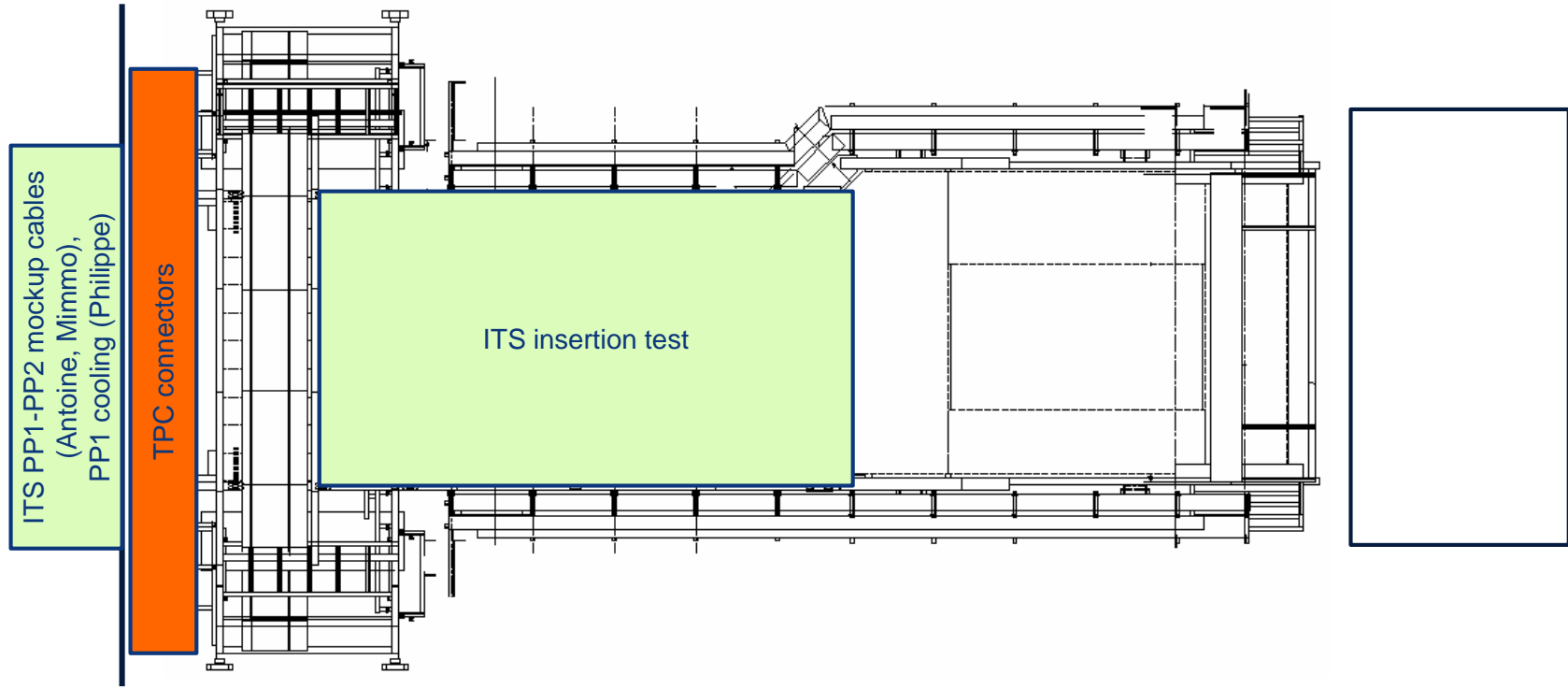
Test ITS cooling hoses in b.167 (Philippe)



# Miniframe activities w4 – Tue 21 Jan 2020

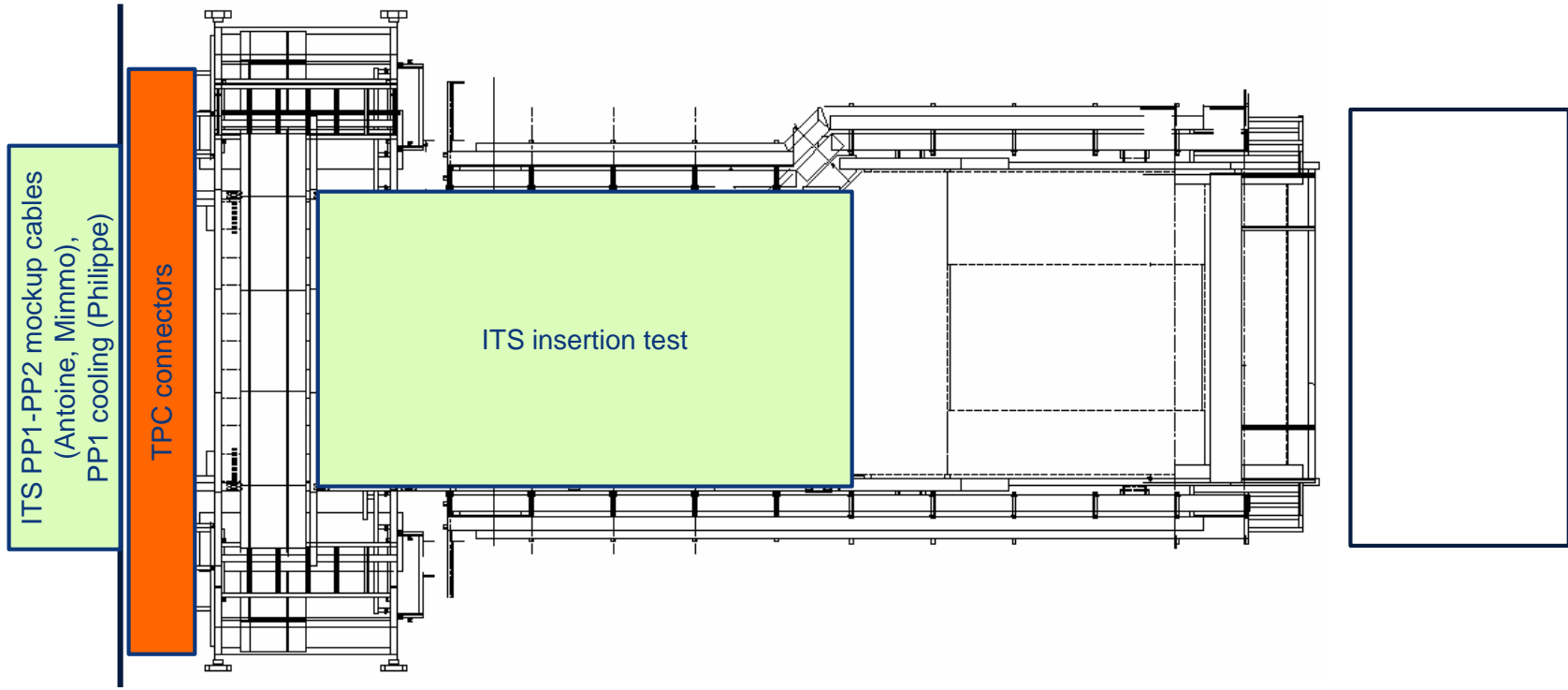


# Miniframe activities w4 – Wed 22 Jan 2020

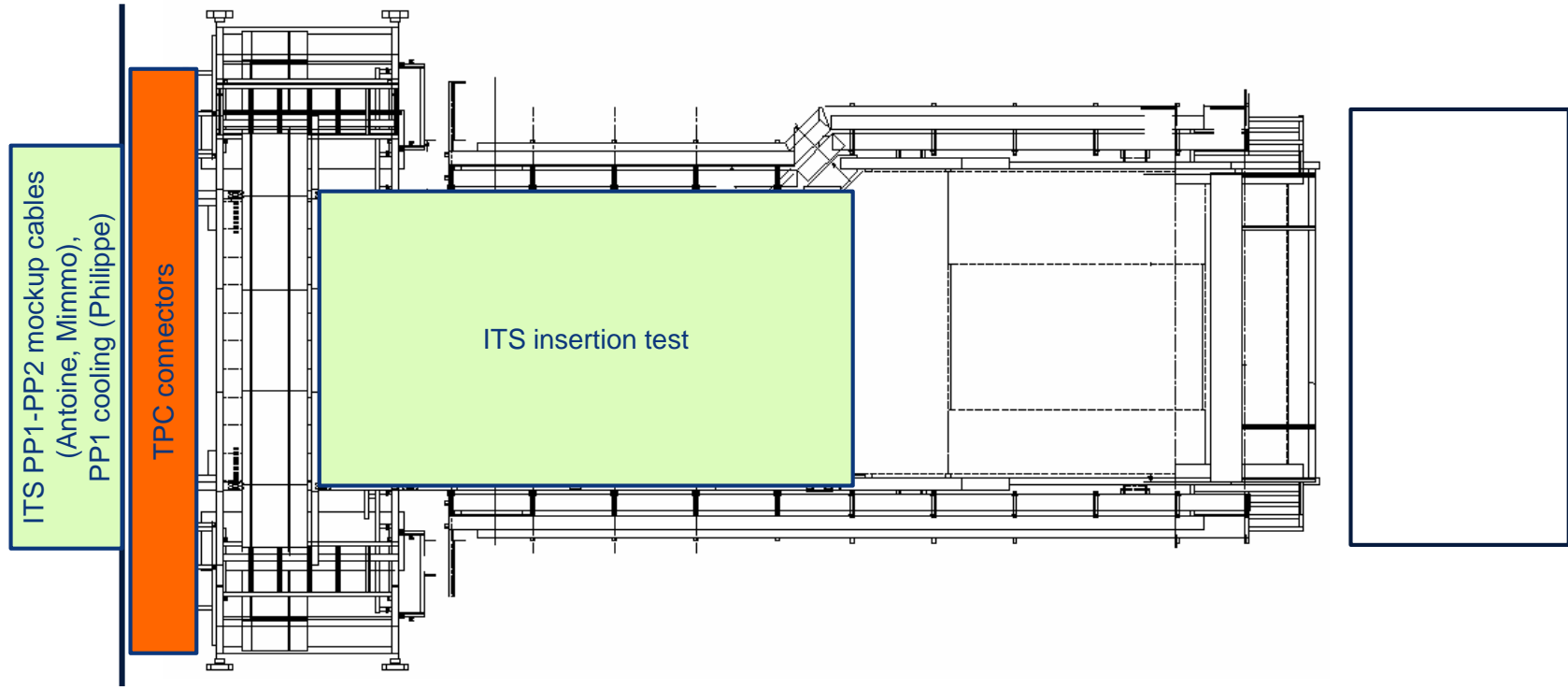




# Miniframe activities w4 – Thu 23 Jan 2020



# Miniframe activities w4 – Fri 24 Jan 2020



# Day-by-day sequence w5

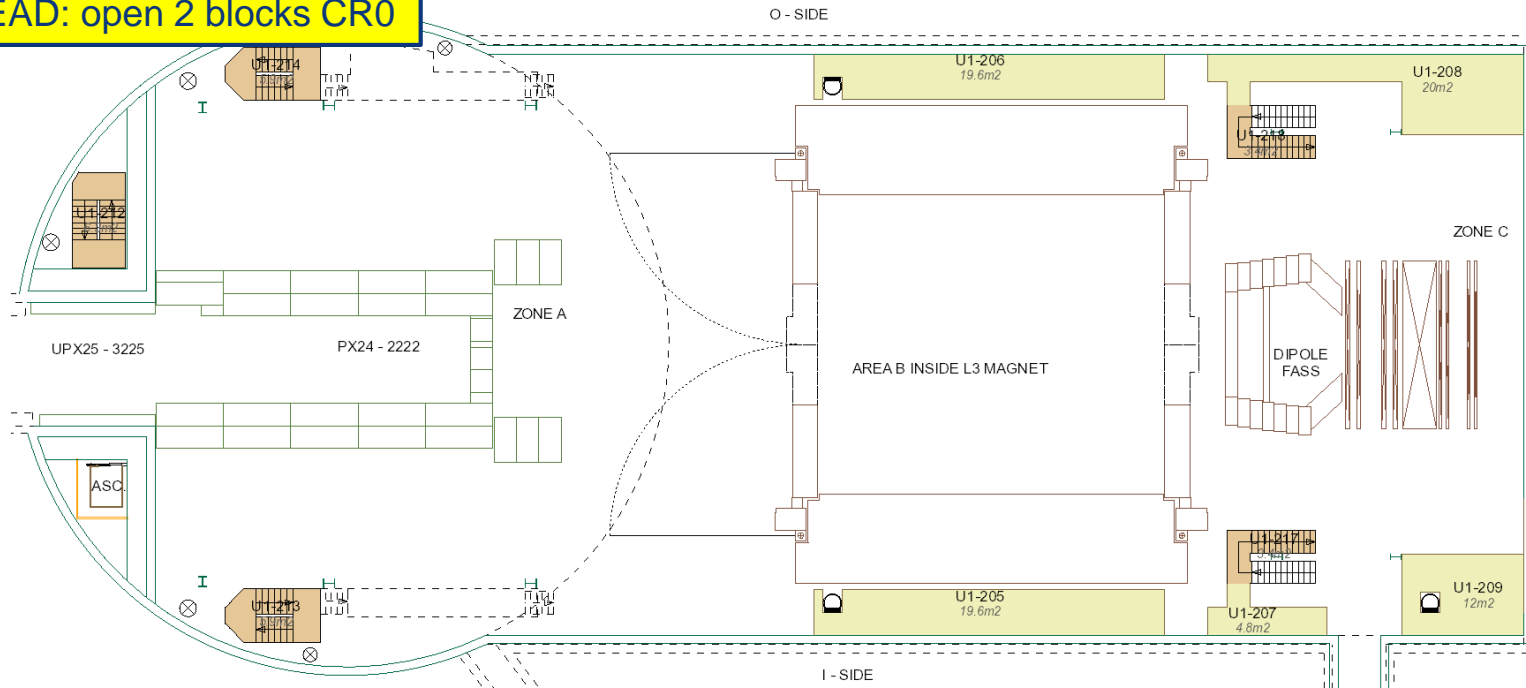


# UX25 activities w5 – Mon 27 Jan 2020

EN-EL: AUG test → NO access to P2

ALTEAD: bring its inox pipes to SX2

ALTEAD: open 2 blocks CR0



# UX25 activities w5 – Tue 28 Jan 2020

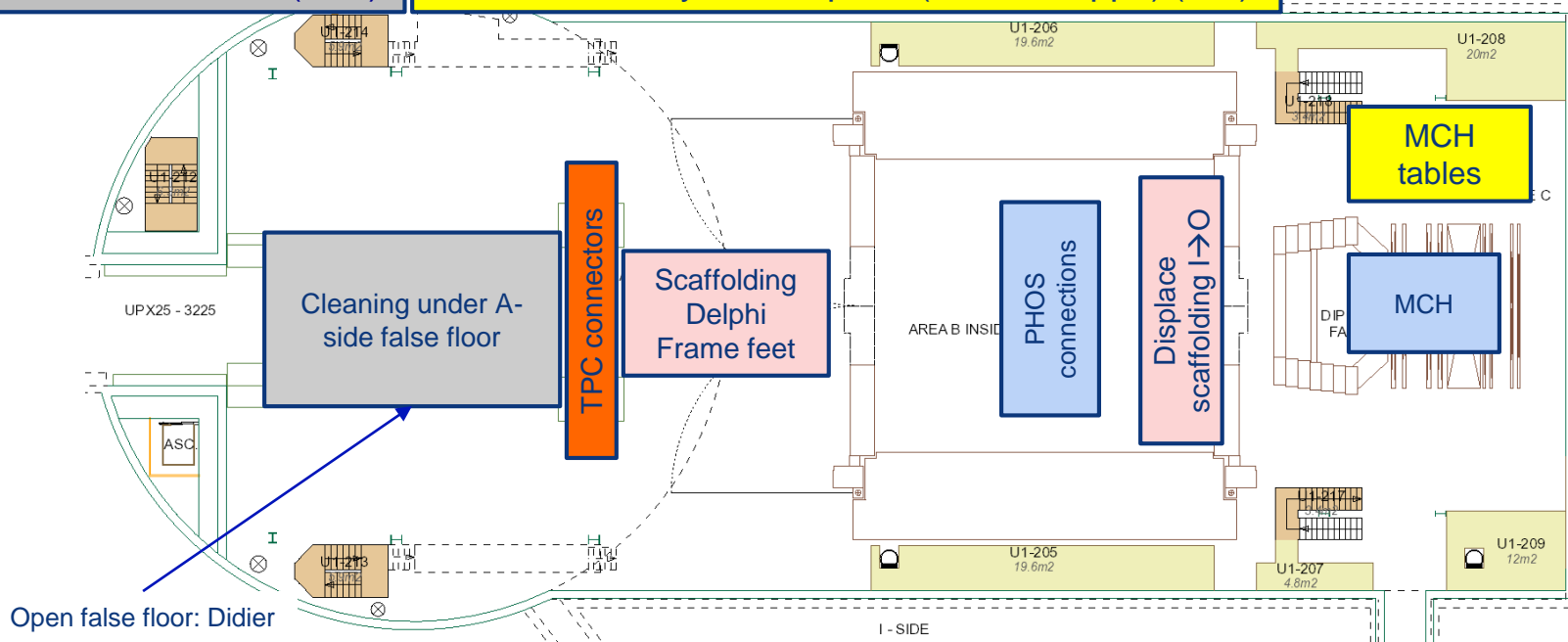
Cleaning cavern (Topnet): 13:00 to 15:00

EN-CV: restart TRD cooling plant

Annual maintenance 2020 fire detection and gas detection (until February 11<sup>th</sup>)

Restart isobutane (MID)

ALTEAD: modify crane speed (Manu+Filippo) (PM)

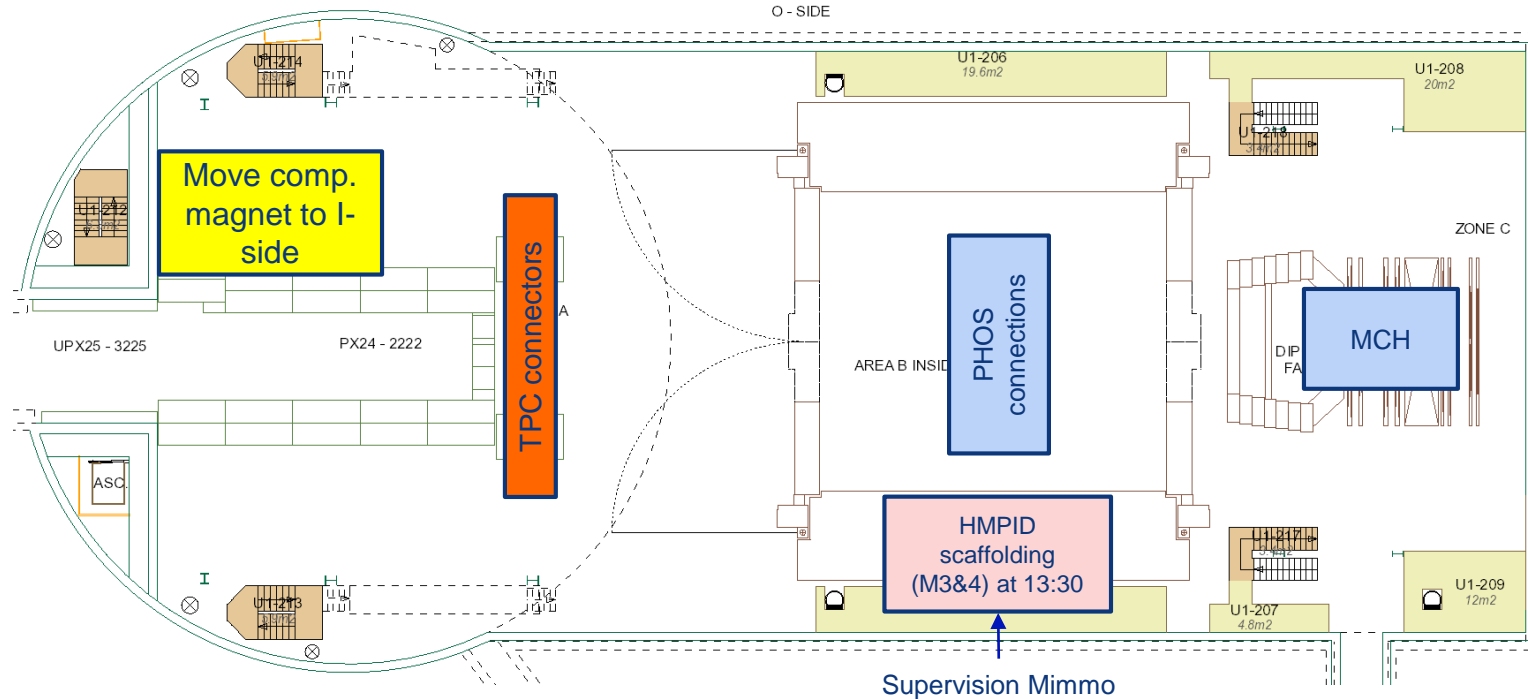


# UX25 activities w5 – Wed 29 Jan 2020

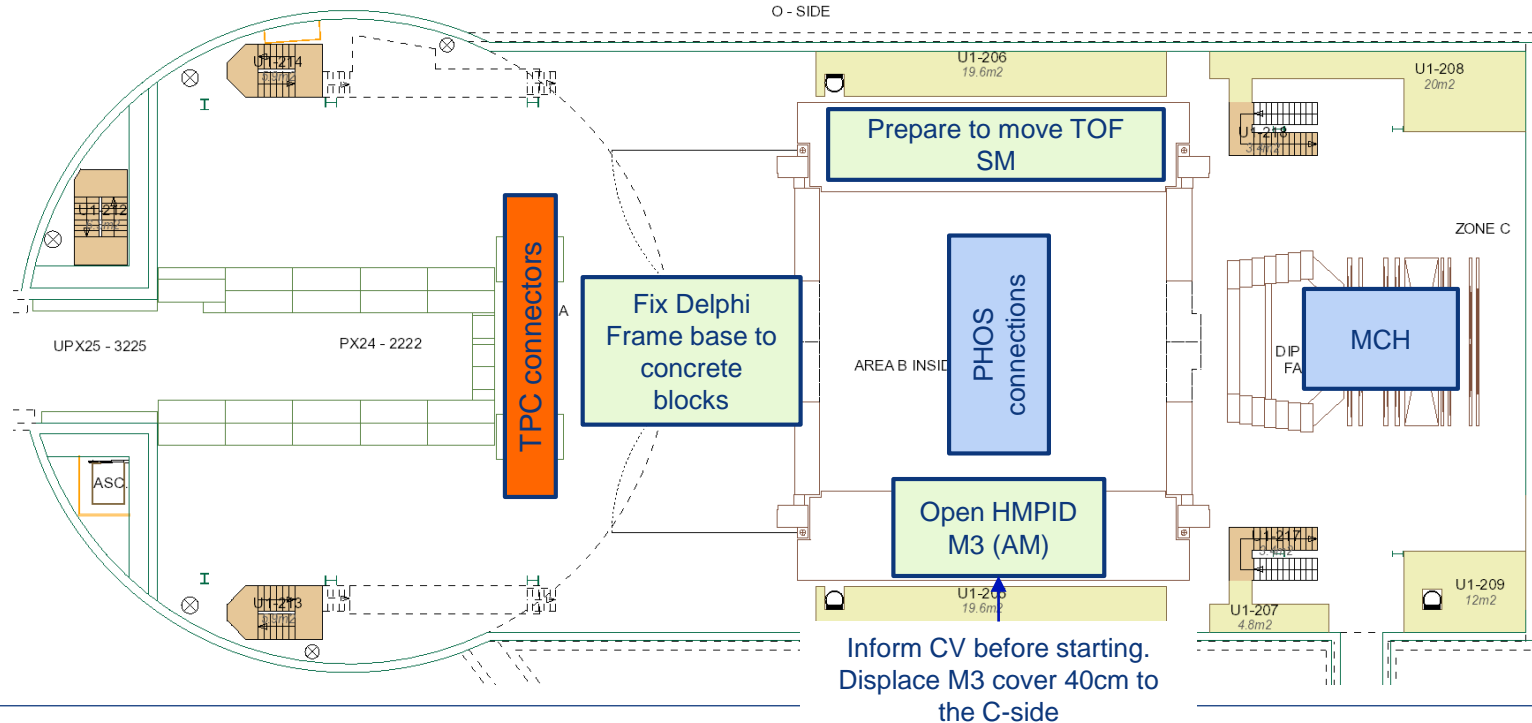
CR0: close 2 blocks (ALTEAD)

CR0: close 1 roxtec IT2 (Philippe)

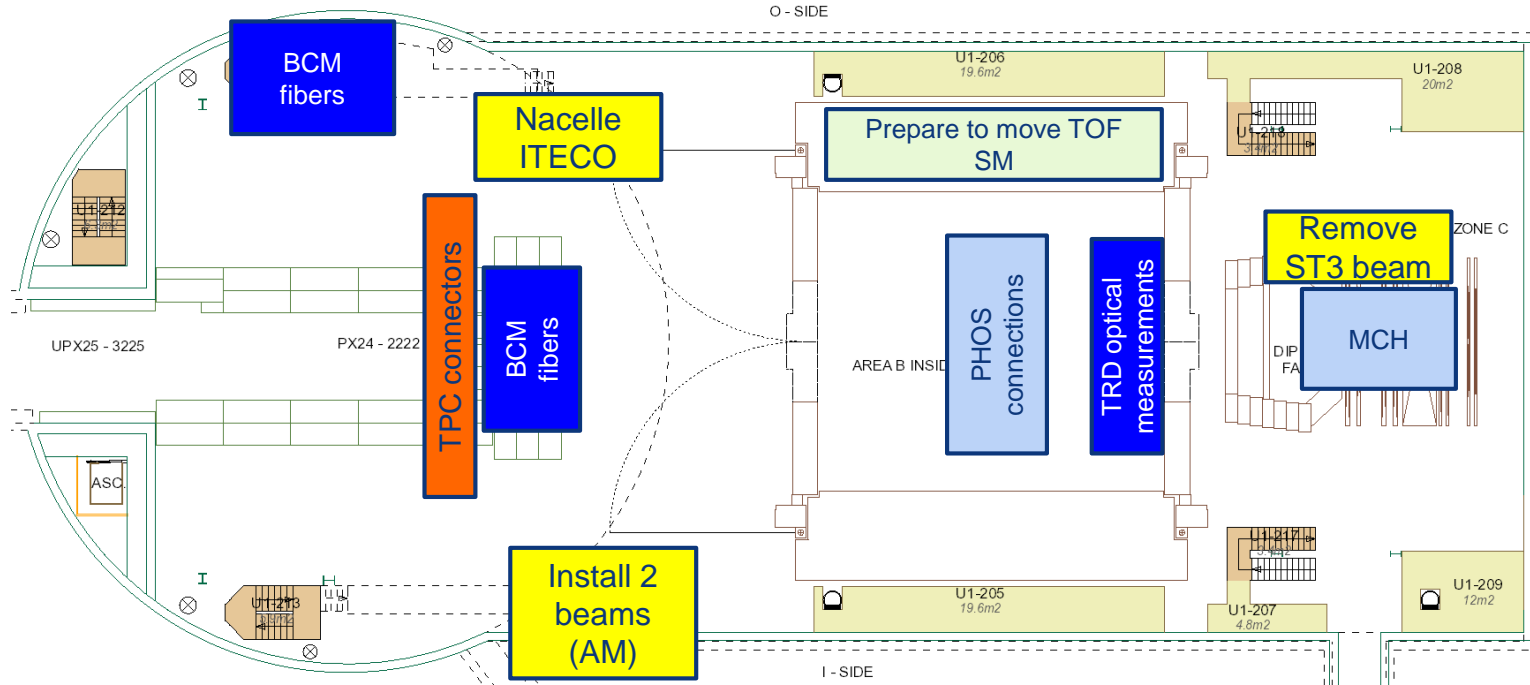
BE-ICS: update SNIFFER security patches and password (ARC)



# UX25 activities w5 – Thu 30 Jan 2020



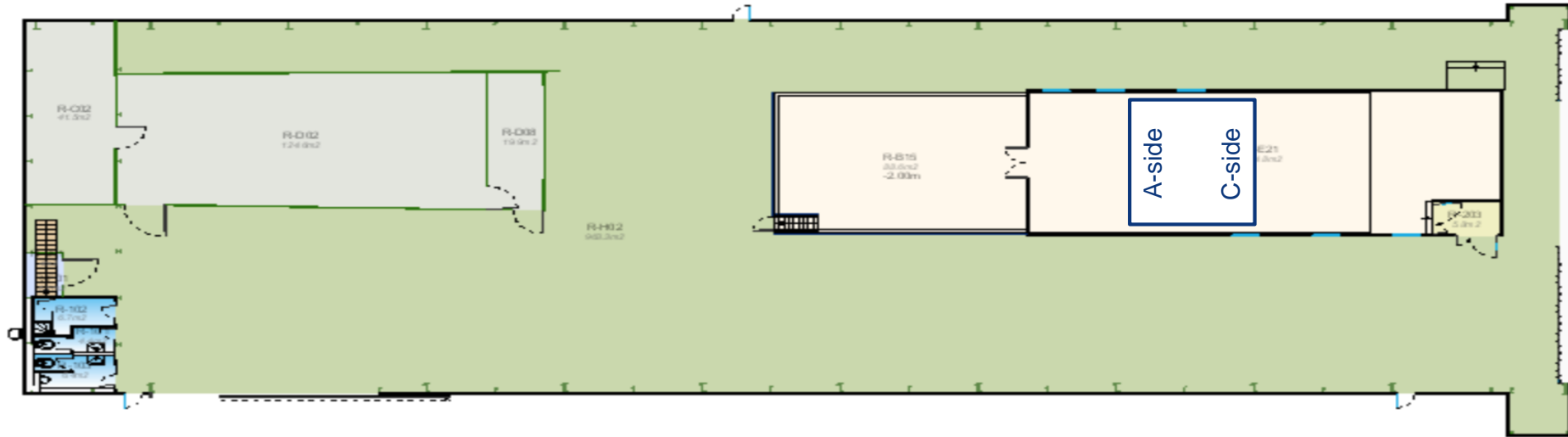
# UX25 activities w5 – Fri 31 Jan 2020





# SXL2 activities w5 – Mon 27 Jan 2020

EN-EL: AUG test → NO access to P2

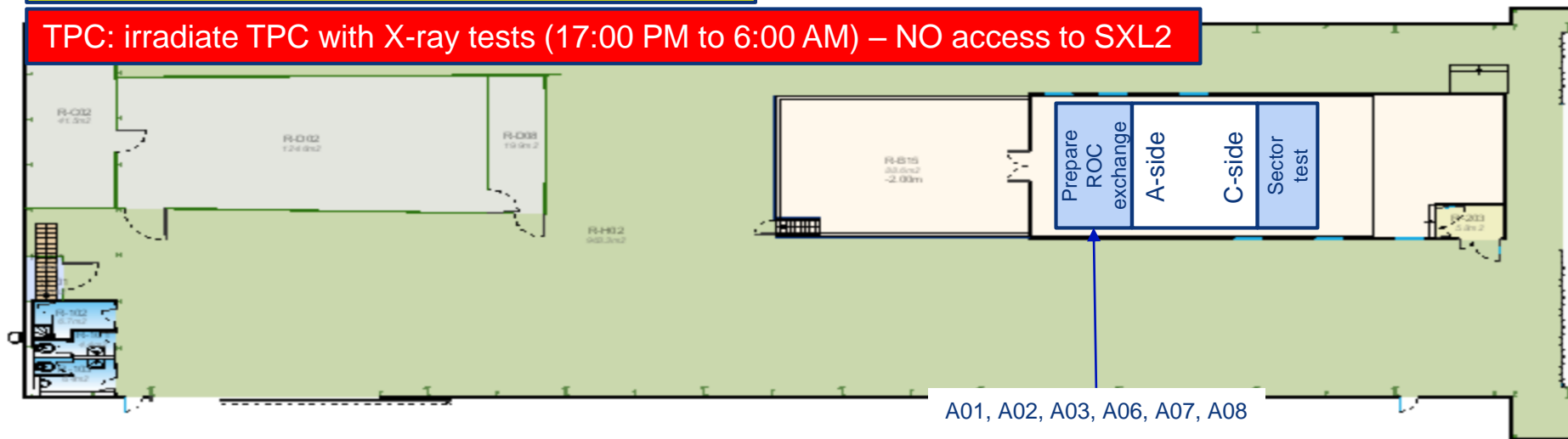


# SXL2 activities w5 – Tue 28 Jan 2020

Preparation TPC tool for the ROC exchange (prepare fences, Evgeny, Samuel and Yannick)

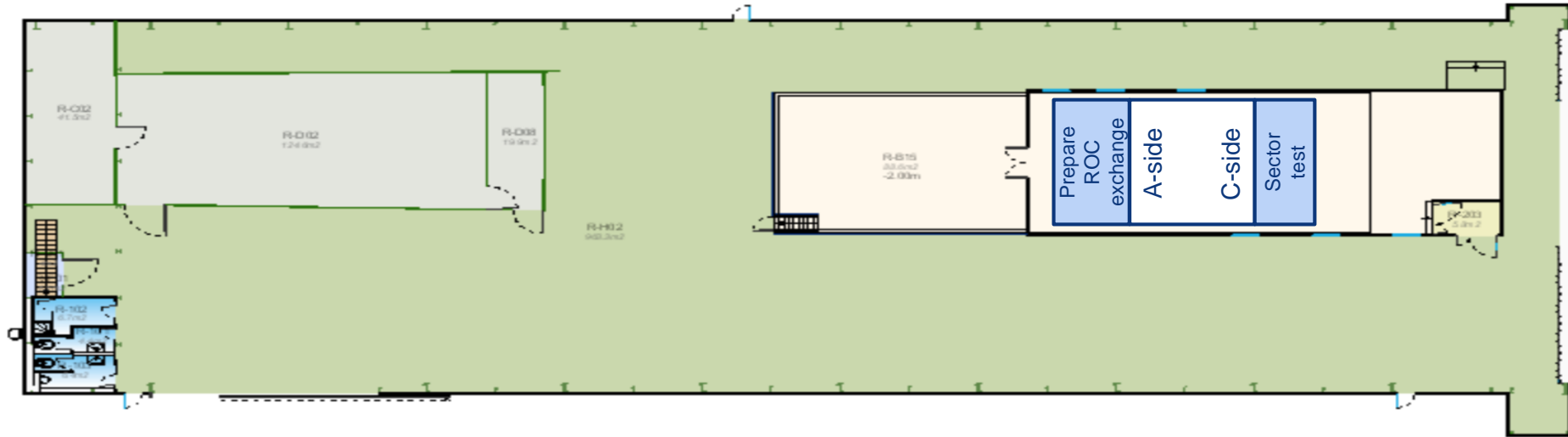
ALTEAD+TPC: dry installation TPC infrastructure

TPC: irradiate TPC with X-ray tests (17:00 PM to 6:00 AM) – NO access to SXL2

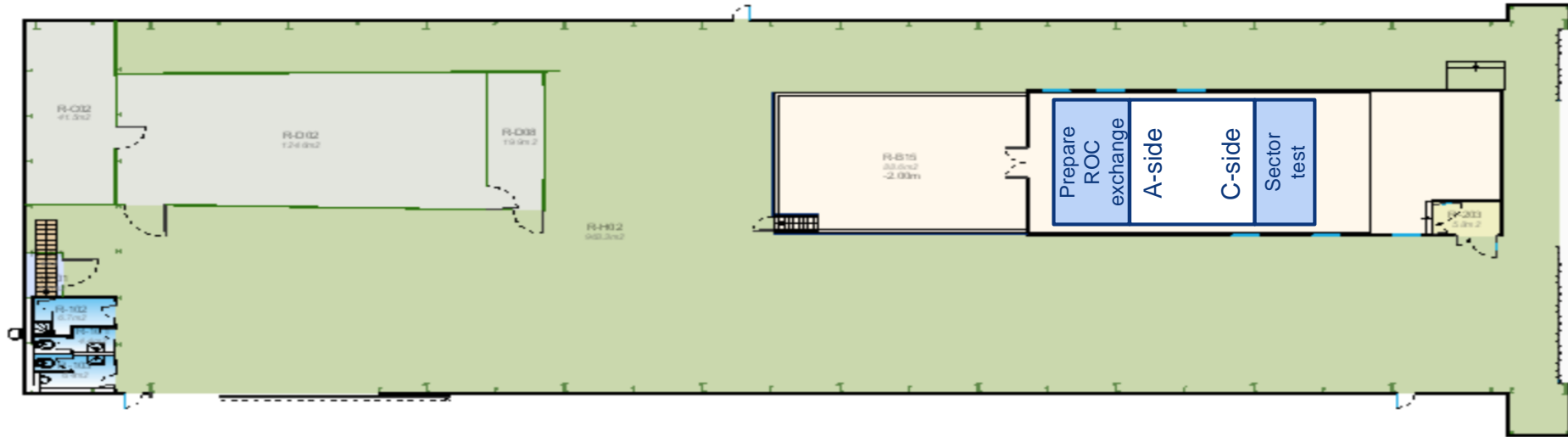


# SXL2 activities w5 – Wed 29 Jan 2020

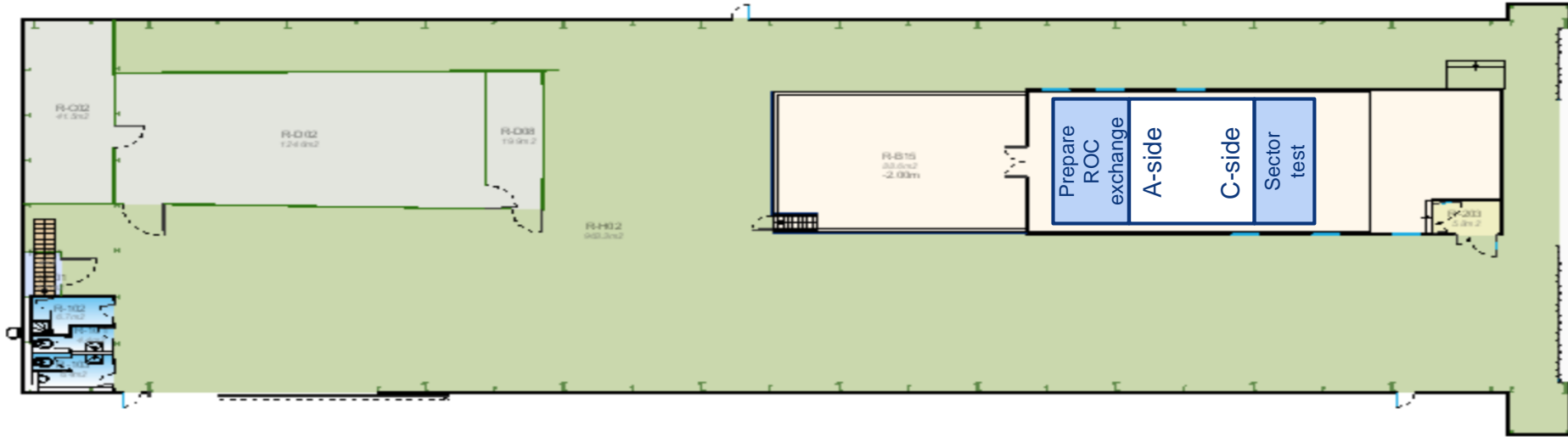
ALTEAD+TPC: dry installation TPC infrastructure



# SXL2 activities w5 – Thu 30 Jan 2020

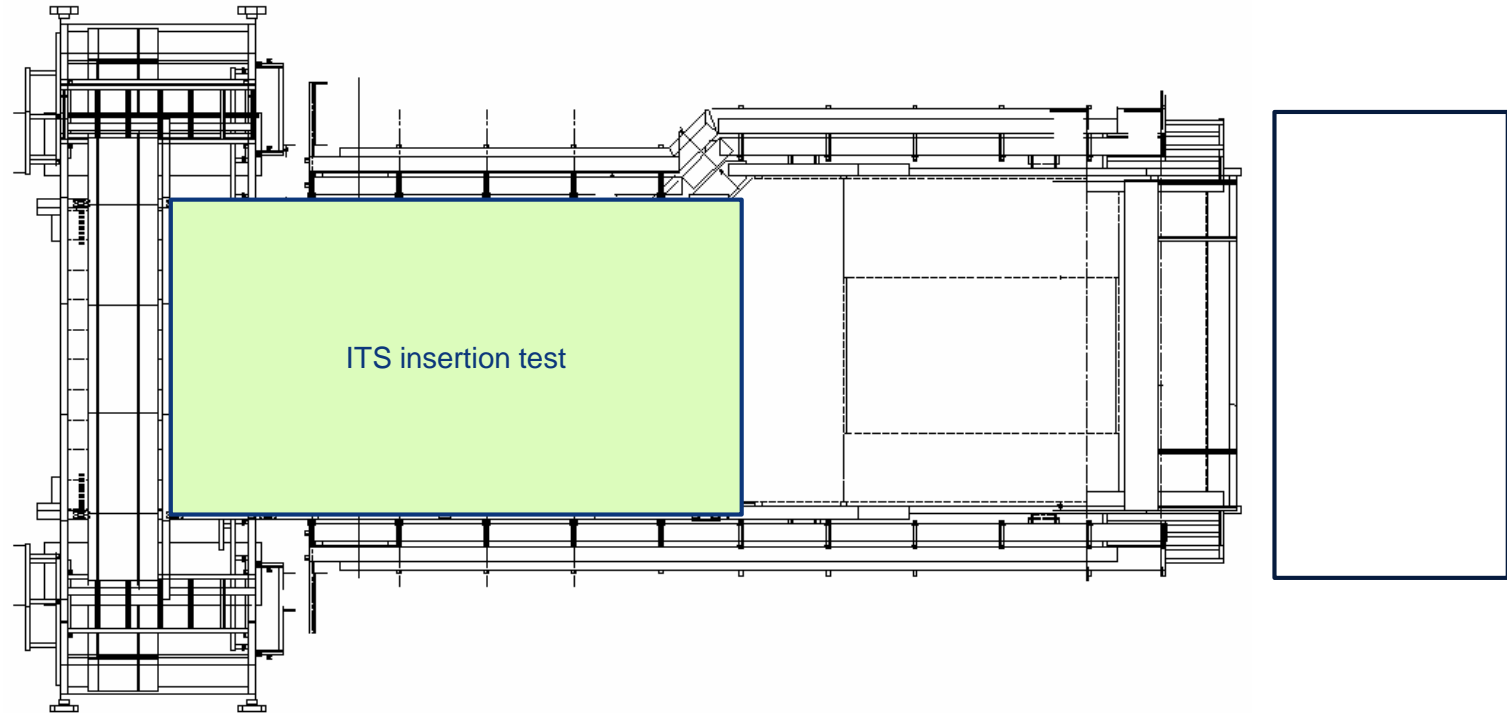


# SXL2 activities w5 – Fri 31 Jan 2020



# Miniframe activities w5 – Mon 27 Jan 2020

EN-EL: AUG test → NO access to P2



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

# Miniframe activities w5 – Tue 28 Jan 2020

Produce and install steps to protect FO boxes; finish ITS rack supports; build ITS rack trap (Cedric)

Produce and install ITS crates cooling hoses (Philippe)

Weld ITS-PP2 cable trays (Cedric)

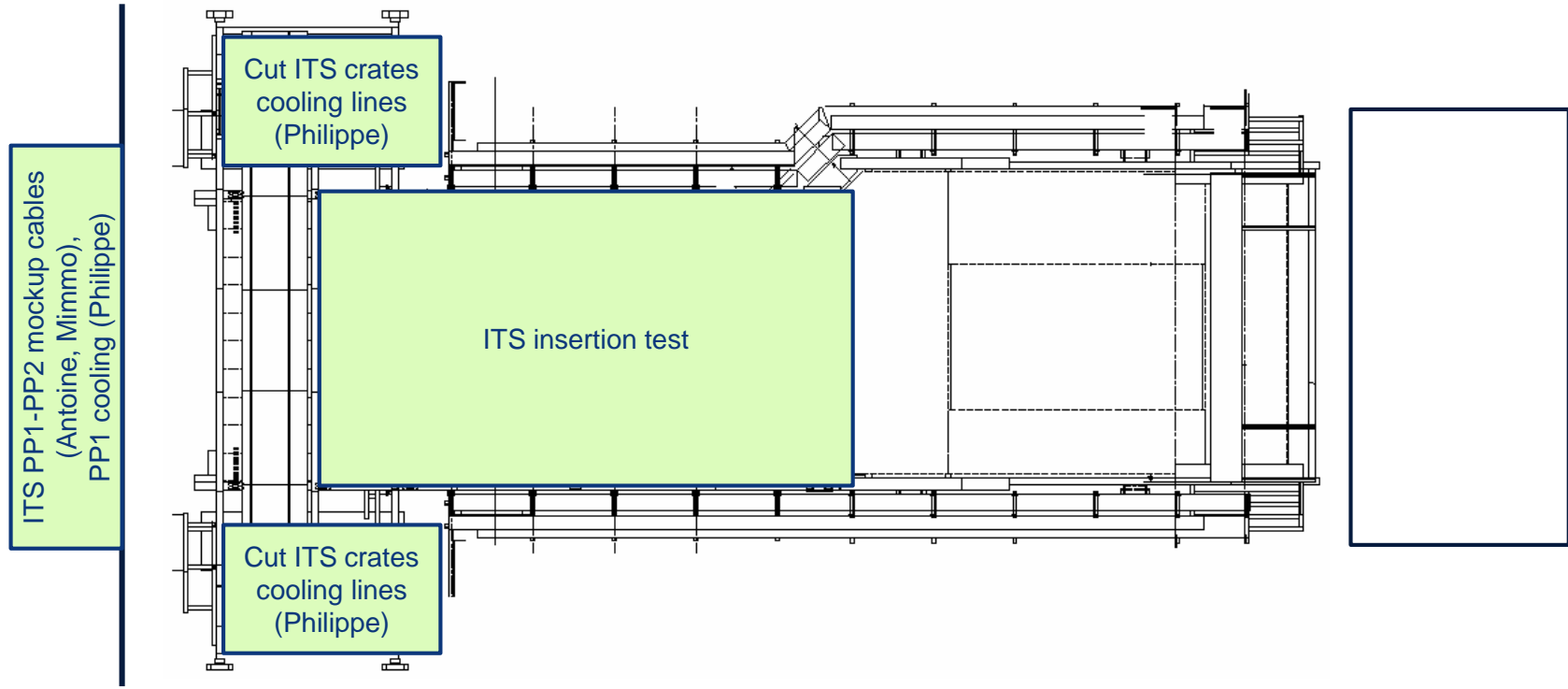
Cut ITS crates cooling lines (Philippe)

ITS insertion test

Cut ITS crates cooling lines (Philippe)

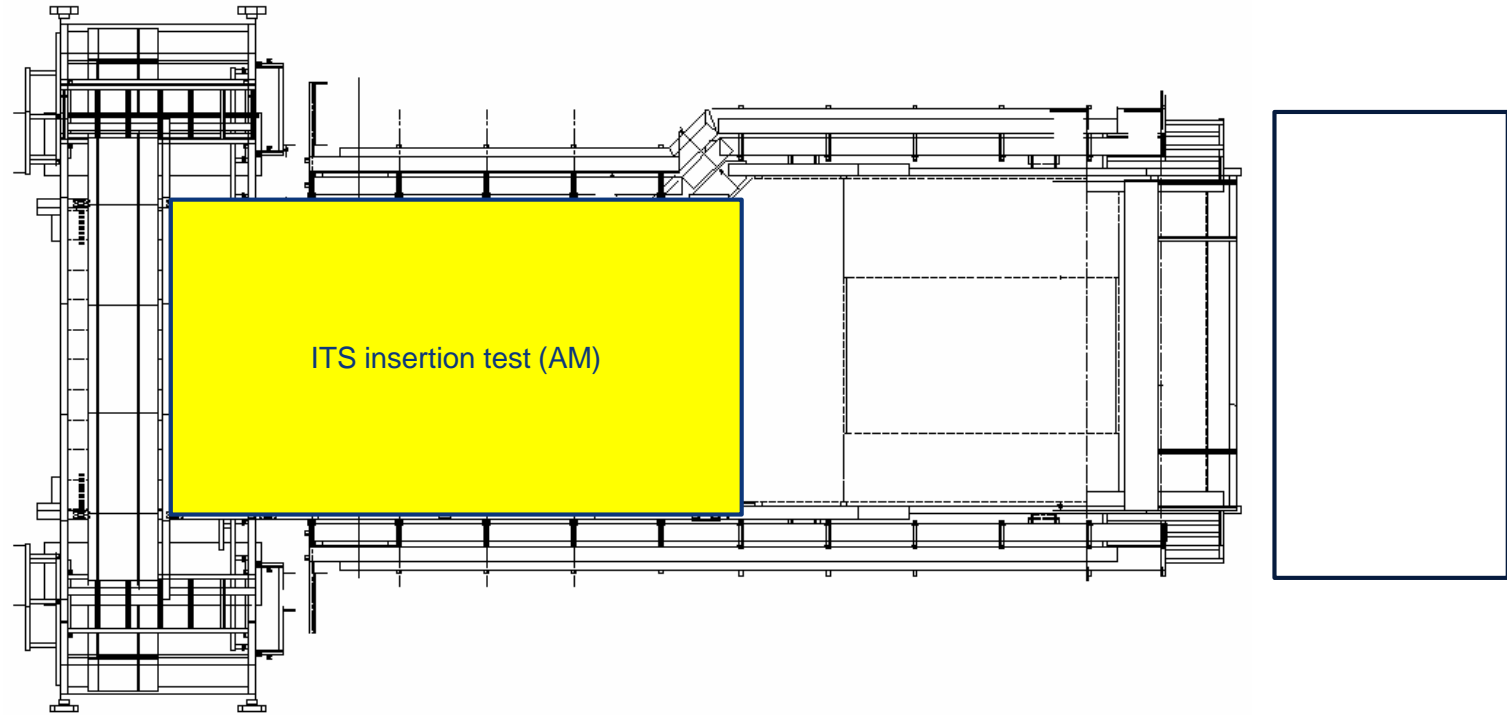
ITS PP1-PP2 mockup cables (Antoine, Mimmo), PP1 cooling (Philippe)

# Miniframe activities w5 – Wed 29 Jan 2020



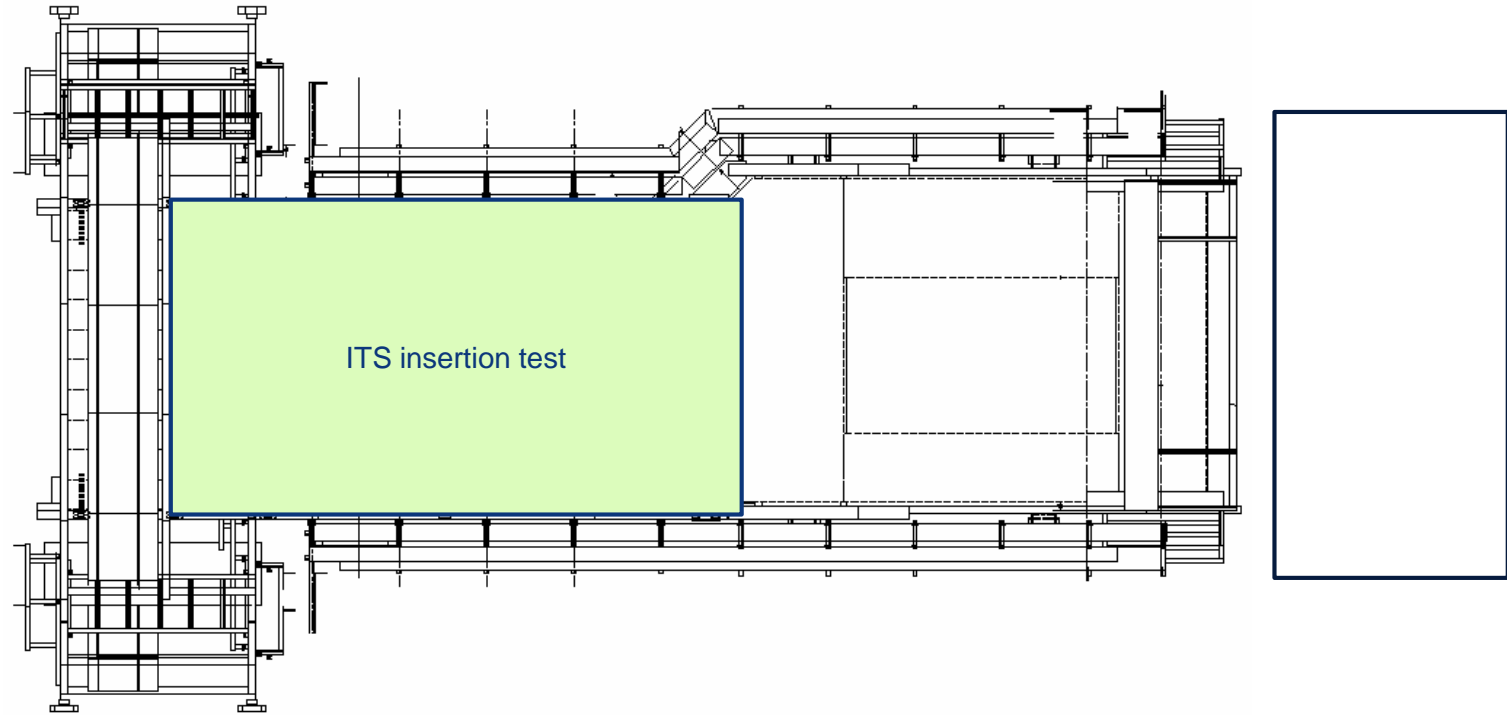


# Miniframe activities w5 – Thu 30 Jan 2020



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

# Miniframe activities w5 – Fri 31 Jan 2020



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

ITS insertion test

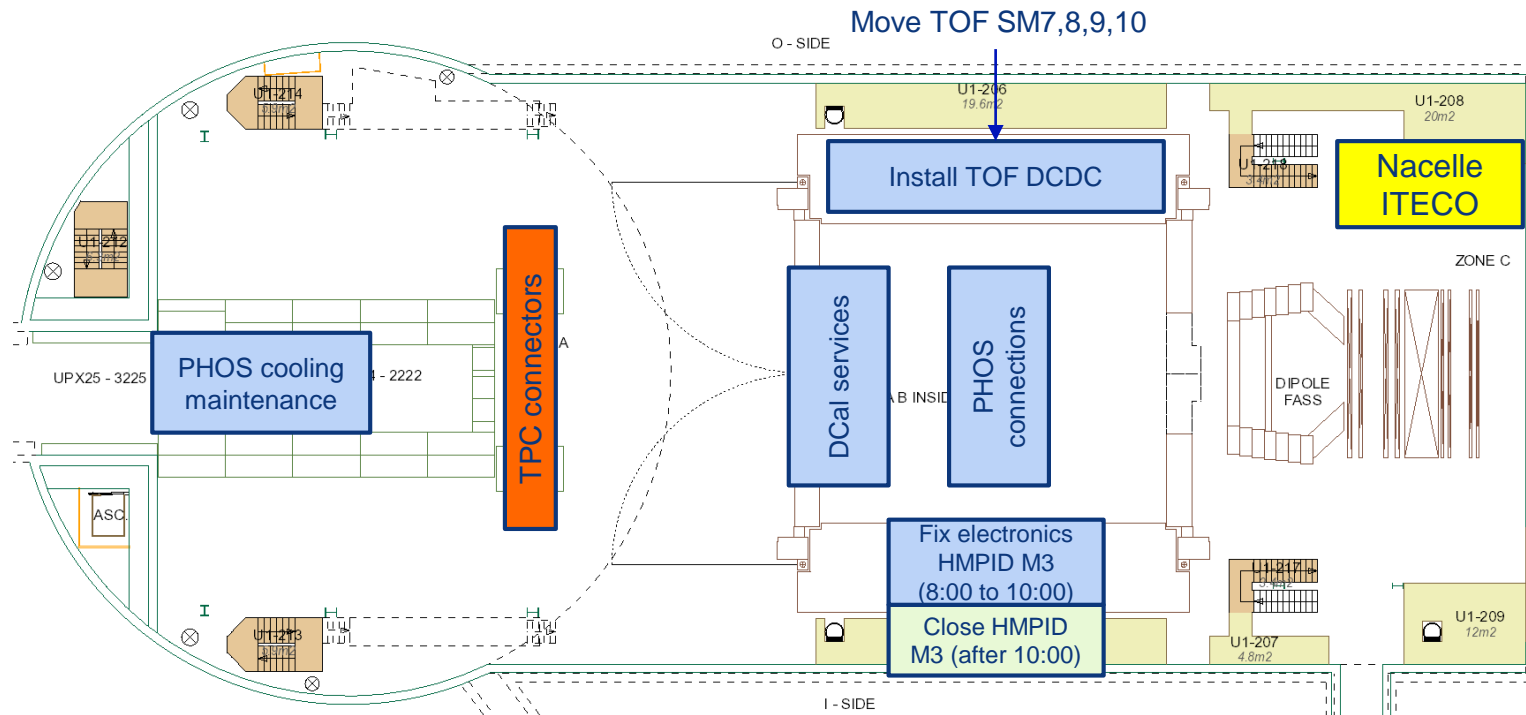
# Day-by-day sequence w6



# UX25 activities w6 – Mon 3 Feb 2020

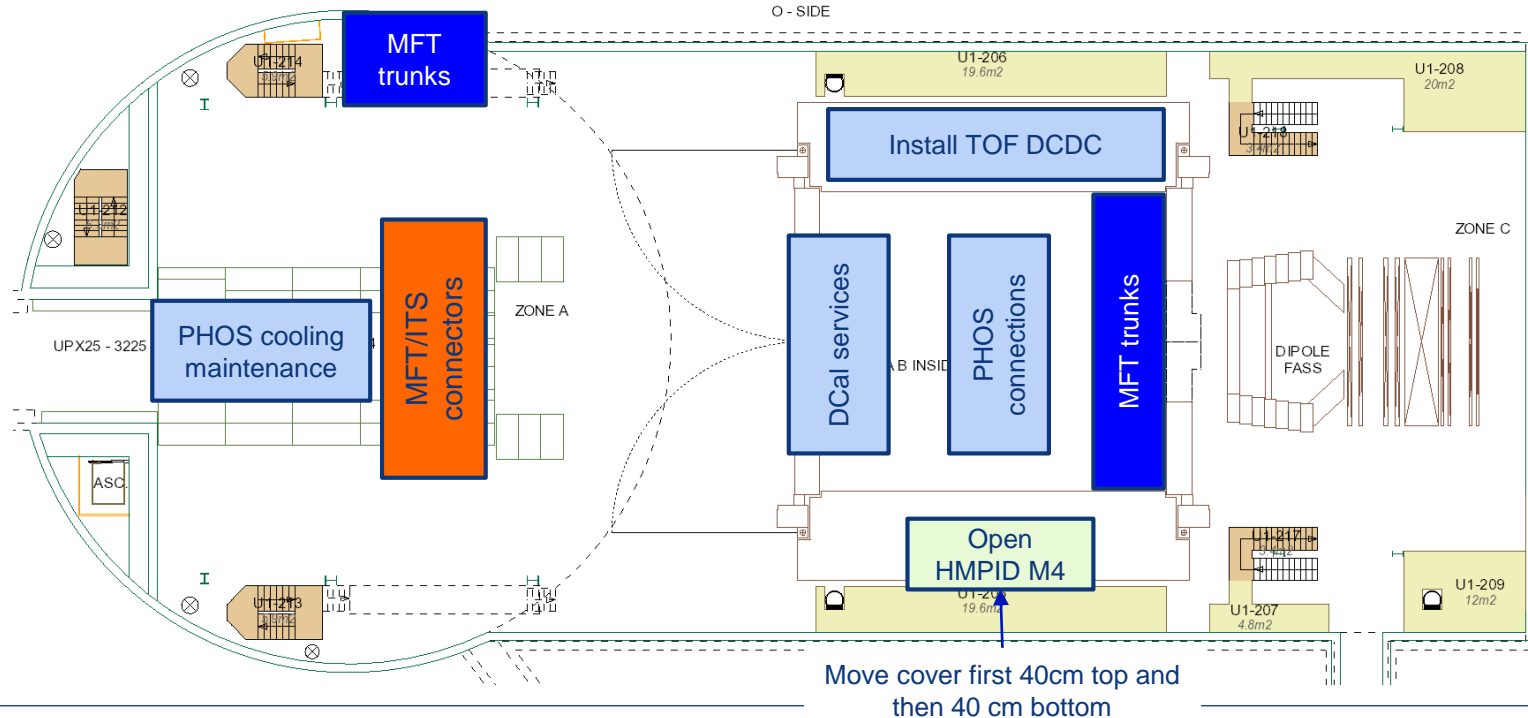
Annual maintenance 2020 fire detection and gas detection (until February 11<sup>th</sup>)

SMB: open trench in front of SXL2 (inspection evacuation network)



# UX25 activities w6 – Tue 4 Feb 2020

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

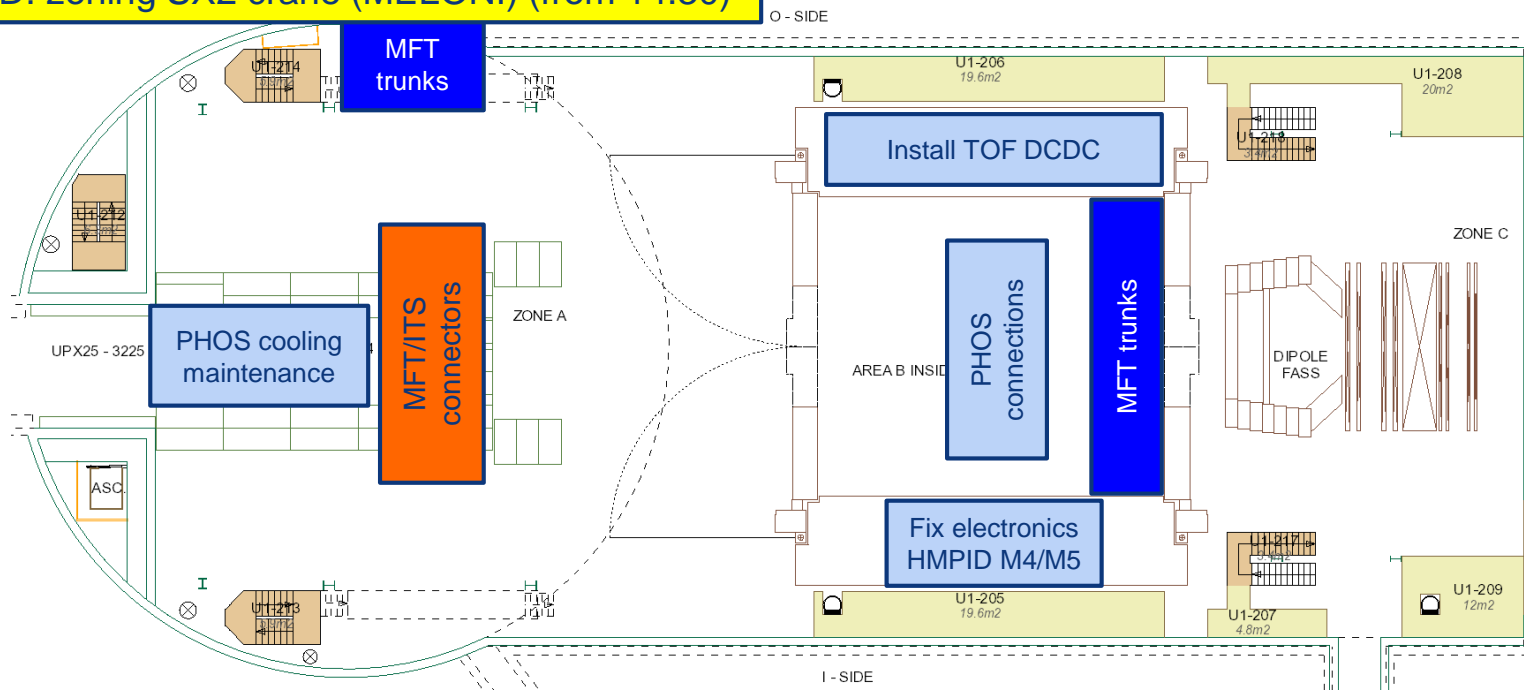


# UX25 activities w6 – Wed 5 Feb 2020

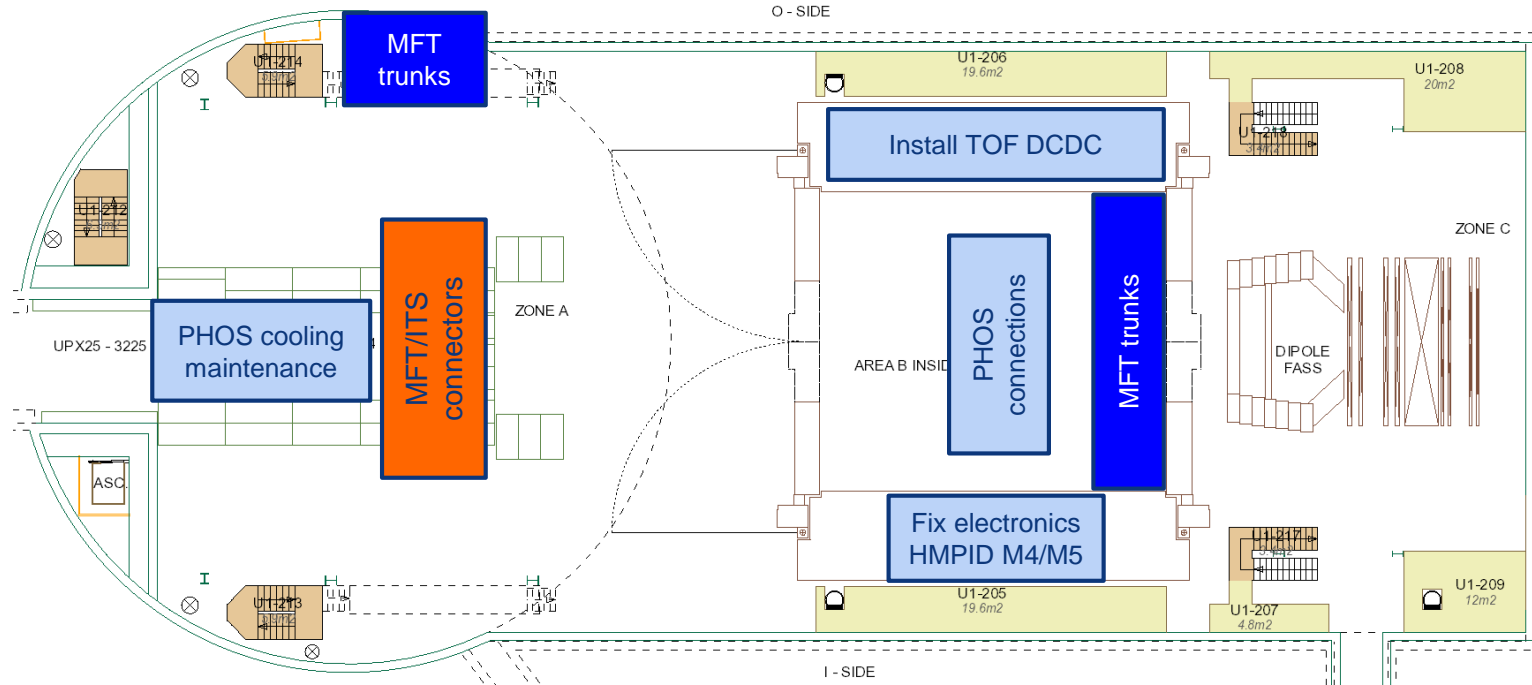
Cavern lift maintenance: no access to UX25 from 6:00 AM to 8:00 AM

IT: intervention on TN network of point 2, will generate a network cut of few minutes between 8:30 and 12:00

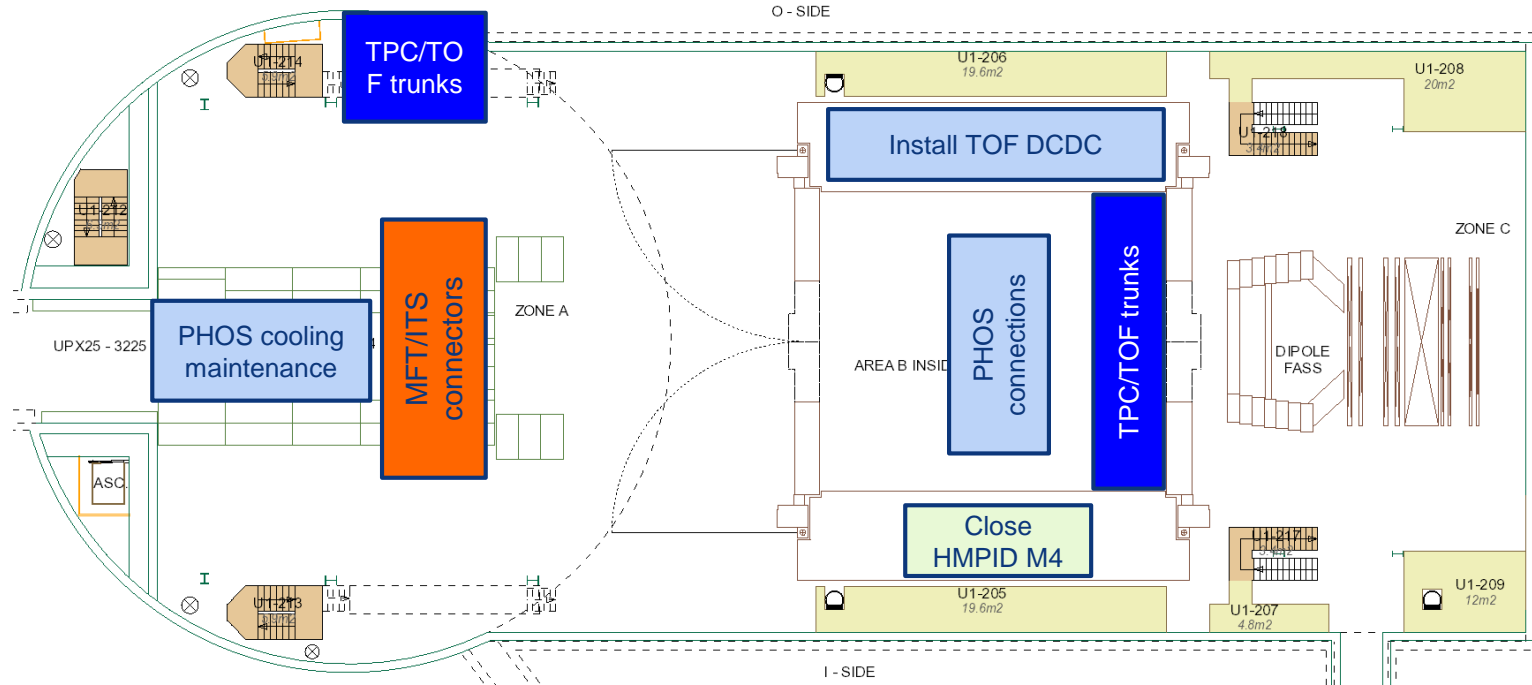
ALTEAD: zoning SX2 crane (MELONI) (from 14:30)



# UX25 activities w6 – Thu 6 Feb 2020



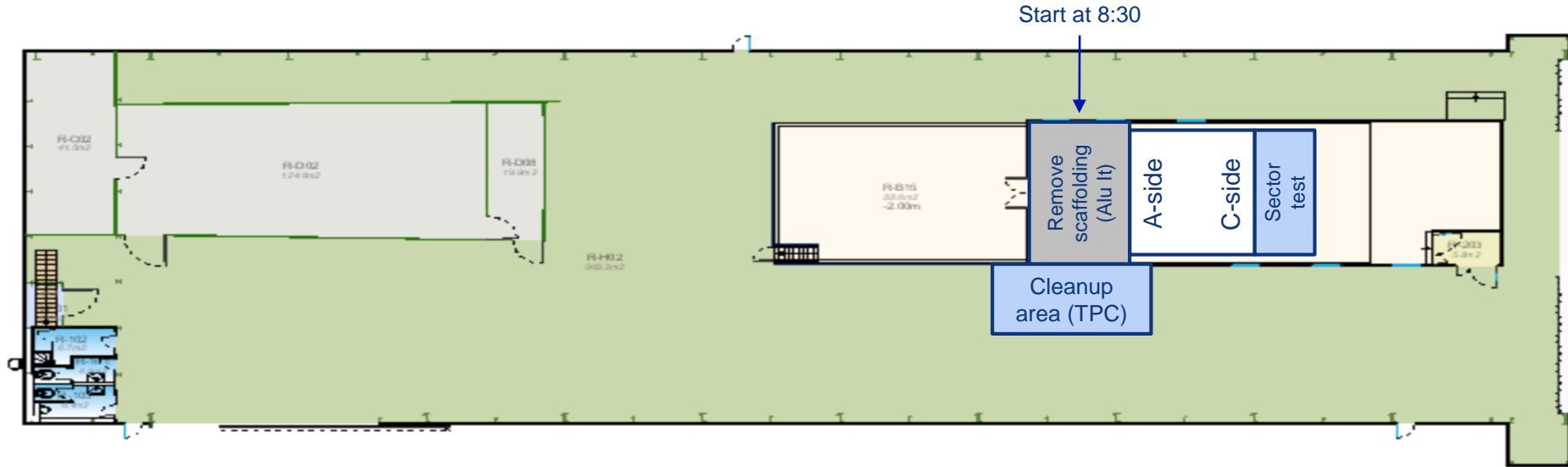
# UX25 activities w6 – Fri 7 Feb 2020



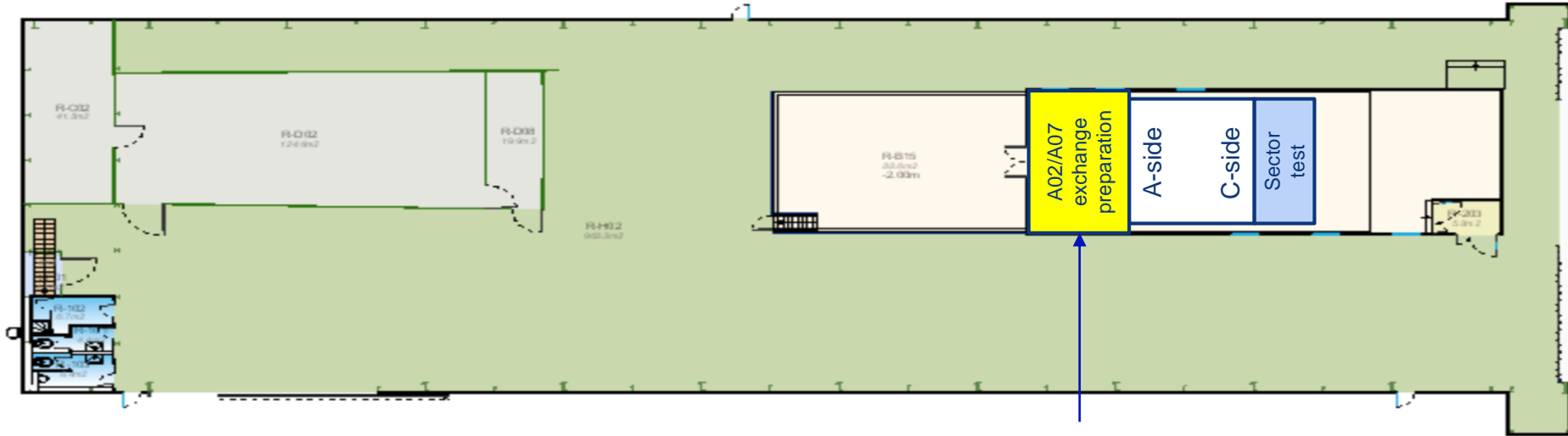


# SXL2 activities w6 – Mon 3 Feb 2020

TPC: switch off cleanroom ventilation (PM)



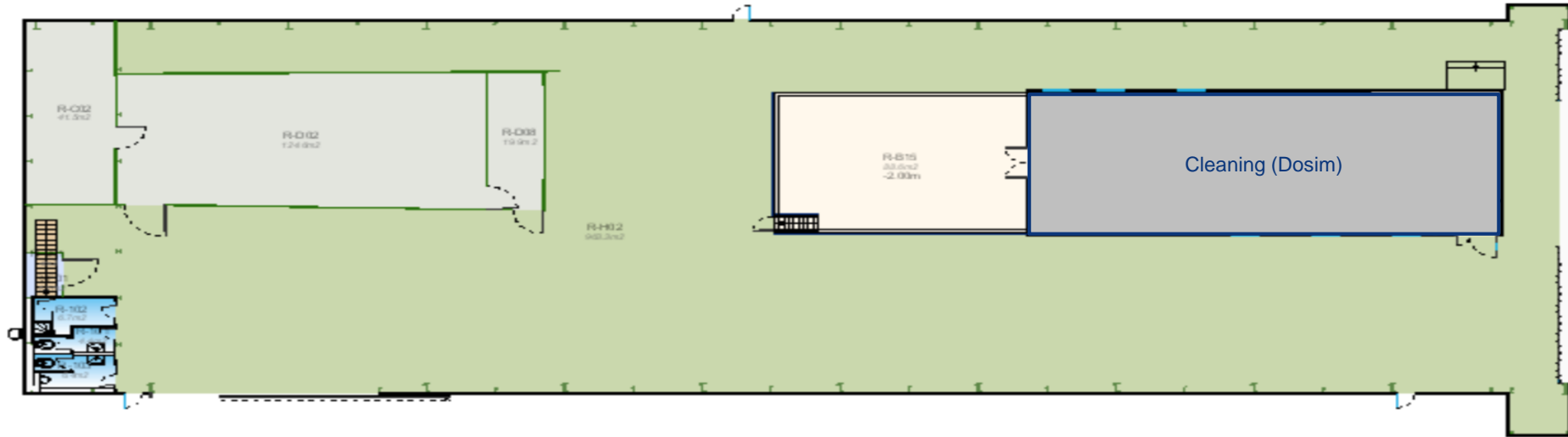
# SXL2 activities w6 – Tue 4 Feb 2020



TPC, ALTEAD: open roof, install tooling to replace A02 and A07, put access staircase and fences, close roof

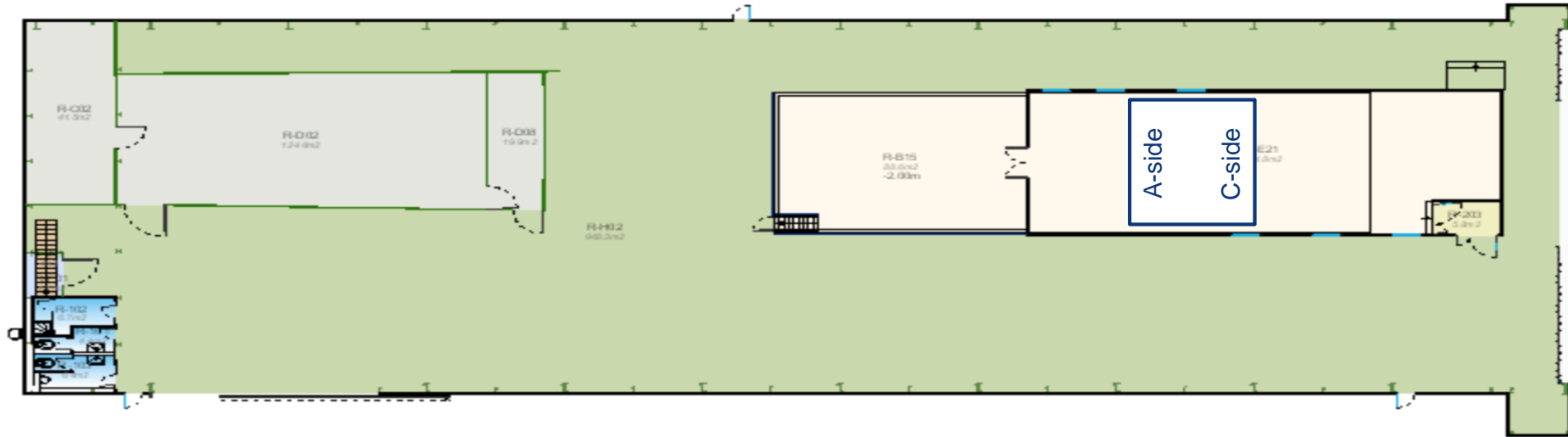
# SXL2 activities w6 – Wed 5 Feb 2020

TPC: replace gas mixture with air



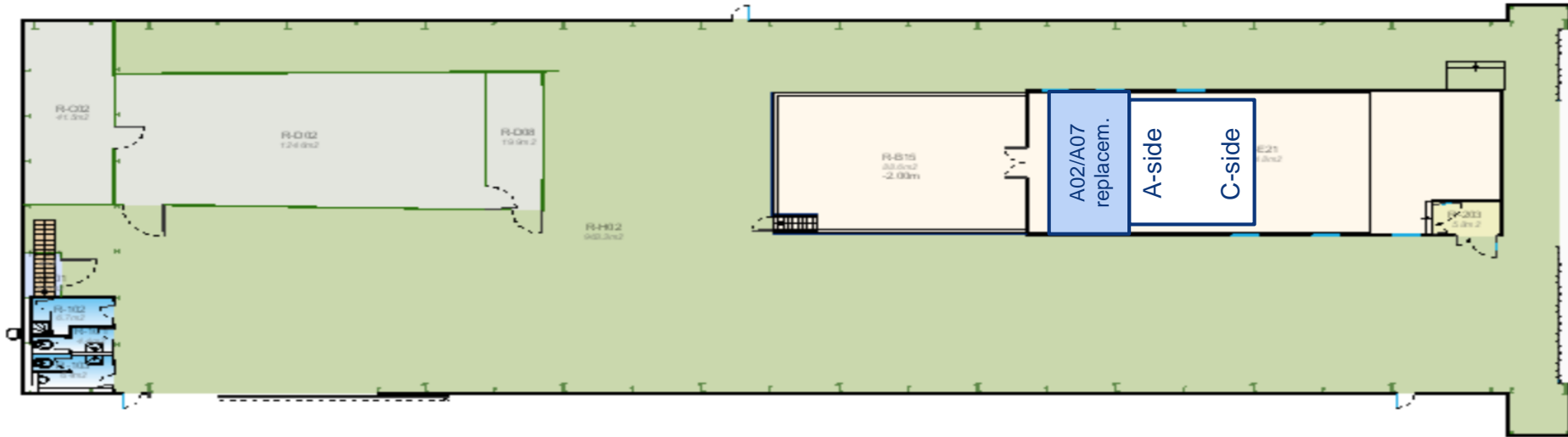
# SXL2 activities w6 – Thu 6 Feb 2020

TPC: replace gas mixture with air



# SXL2 activities w6 – Fri 7 Feb 2020

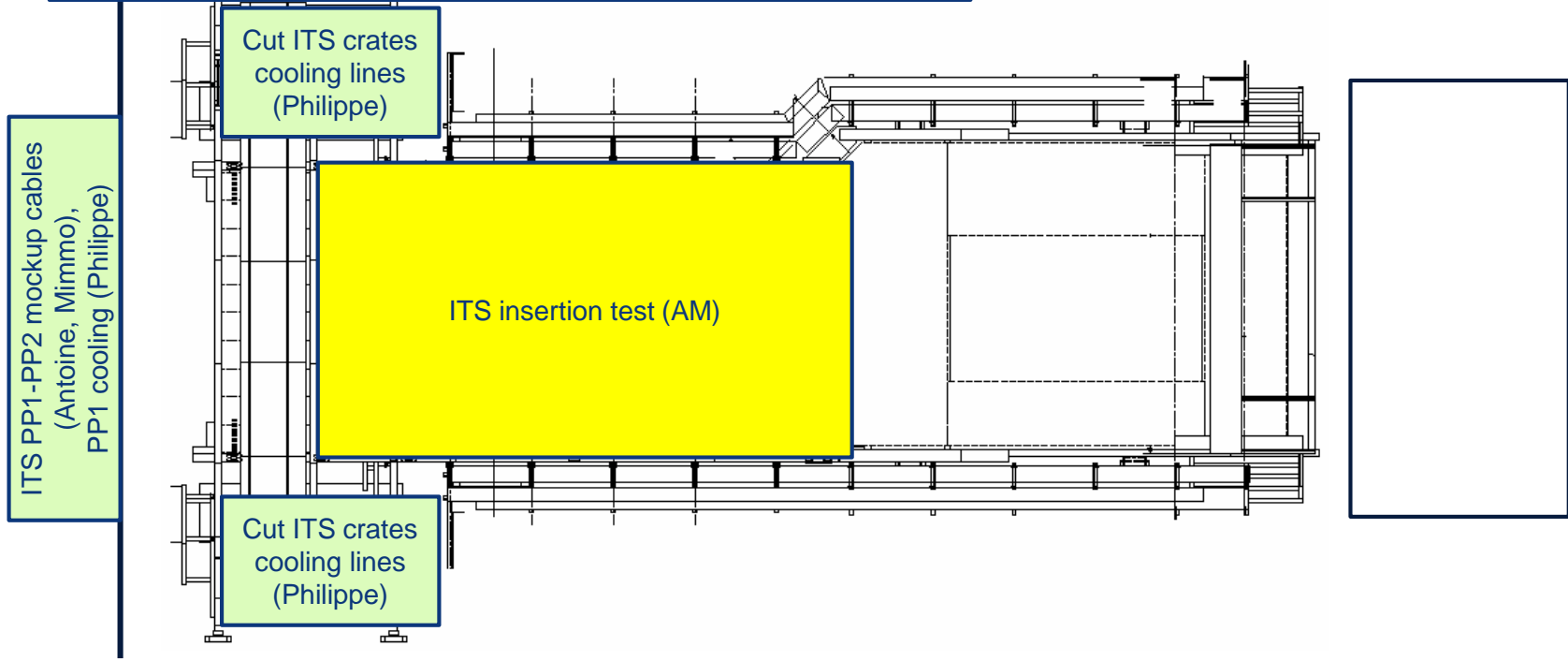
Transportation ITS table and cage to P2



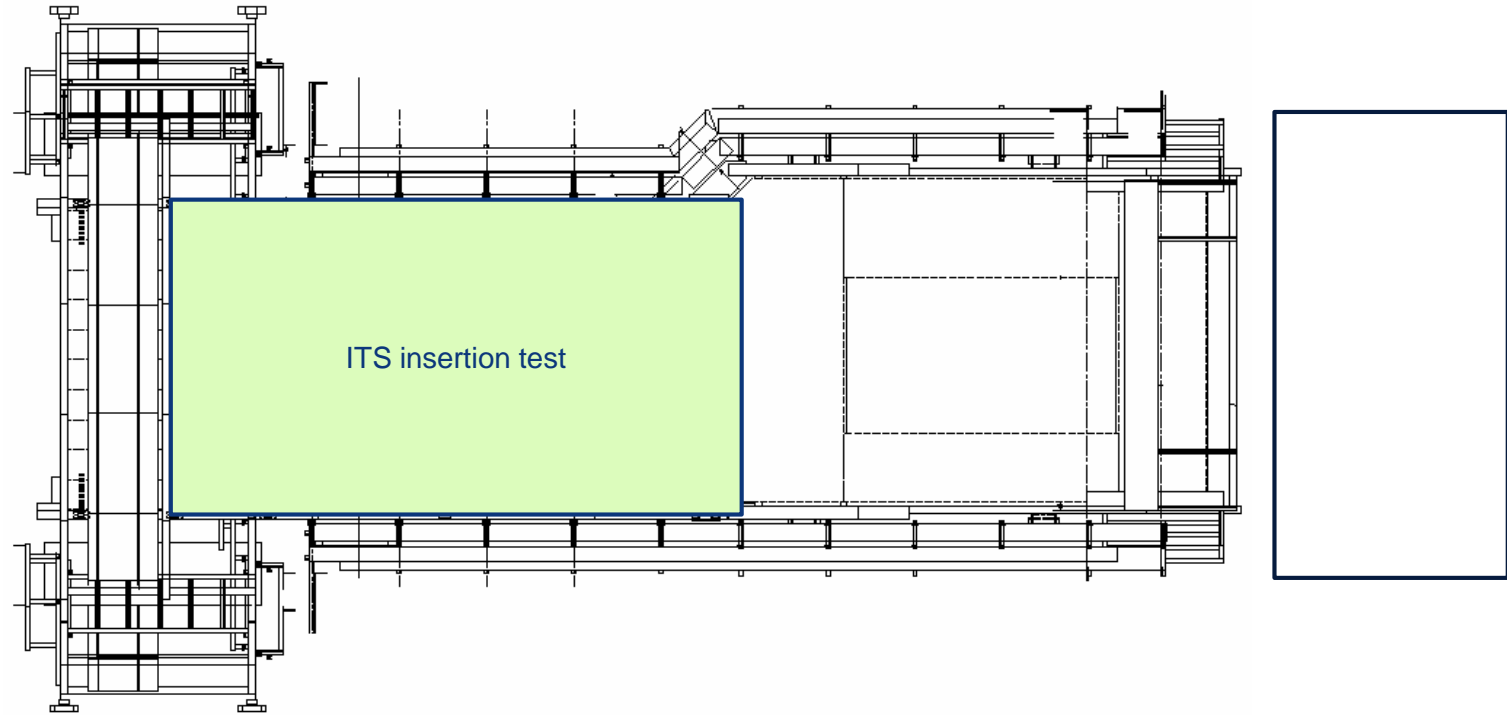
# Miniframe activities w6 – Mon 3 Feb 2020

Produce and install steps to protect FO boxes; finish ITS rack supports; build ITS rack trap (Cedric)

Produce and install ITS crates cooling hoses (Philippe)



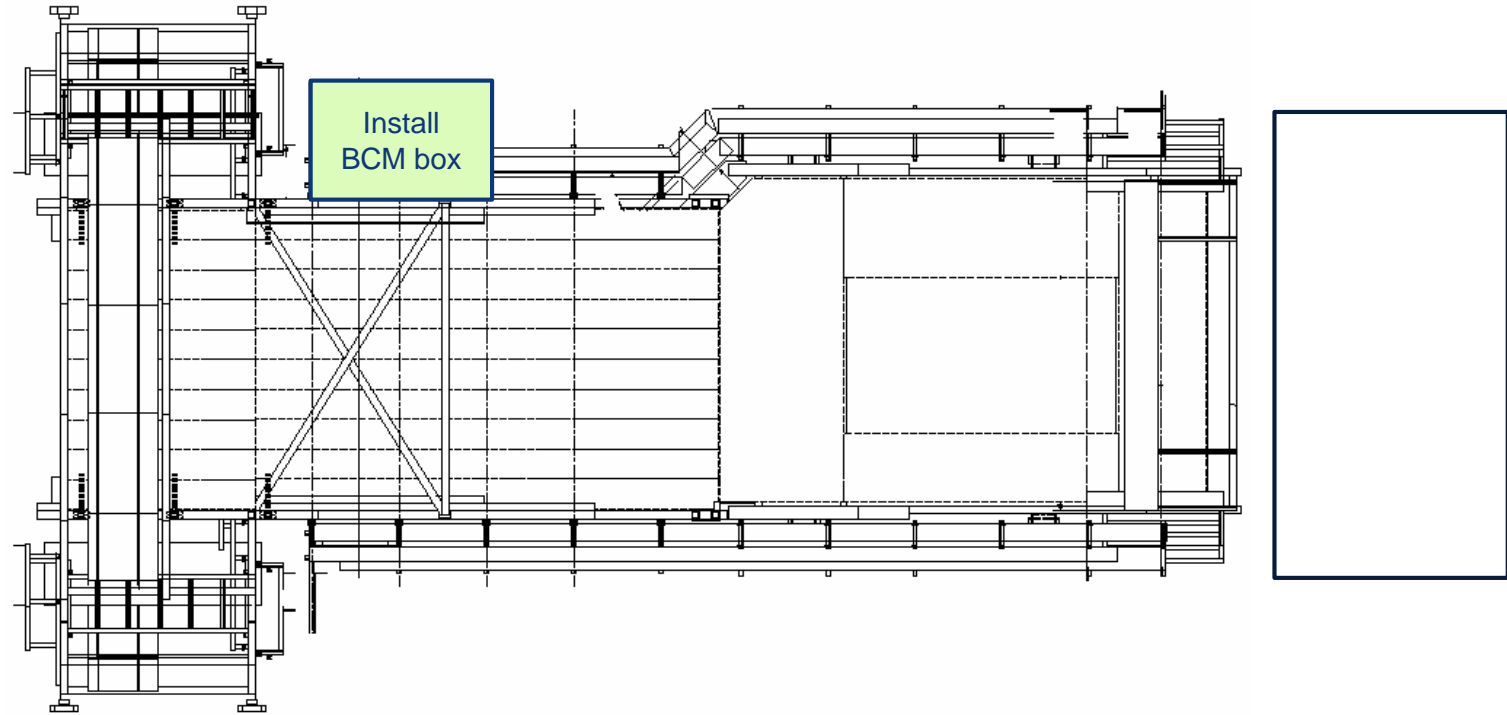
# Miniframe activities w6 – Tue 4 Feb 2020



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

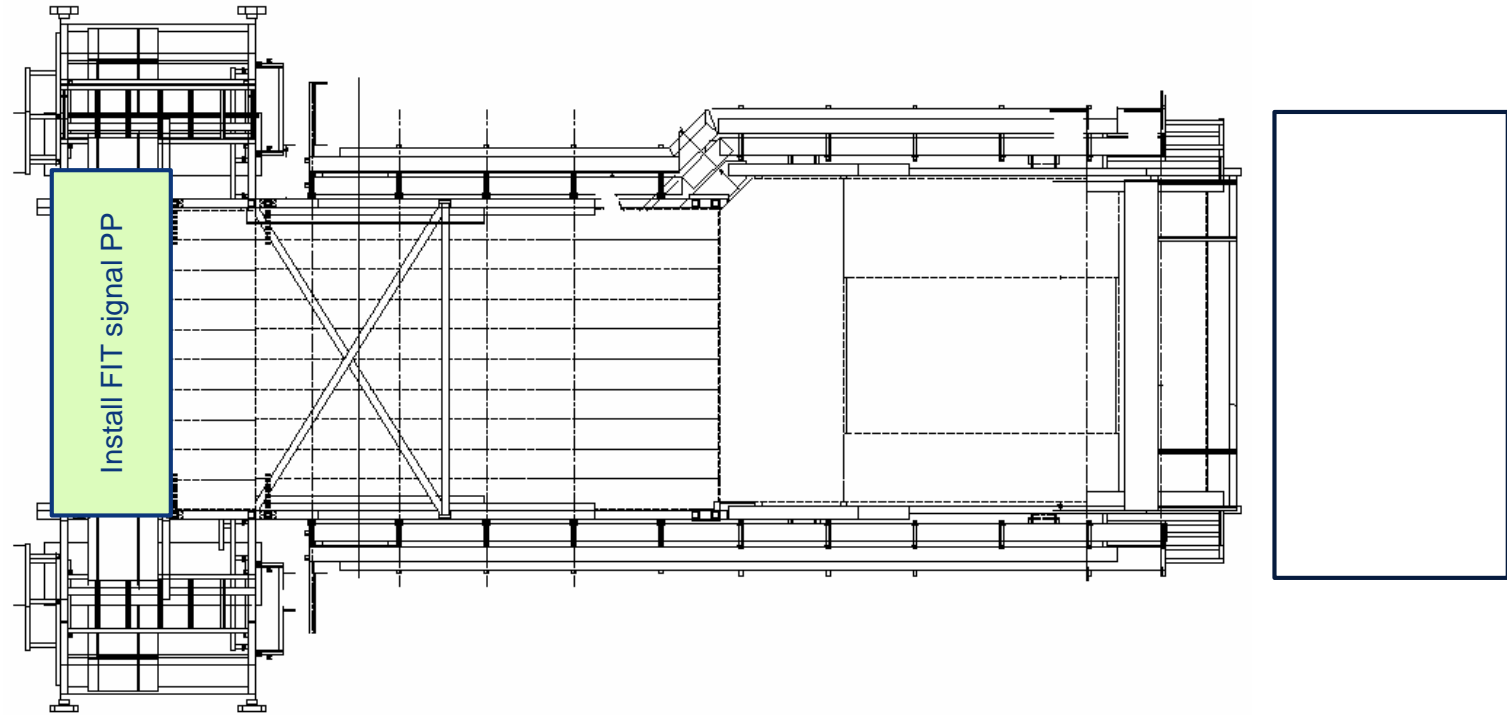
# Miniframe activities w6 – Wed 5 Feb 2020

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





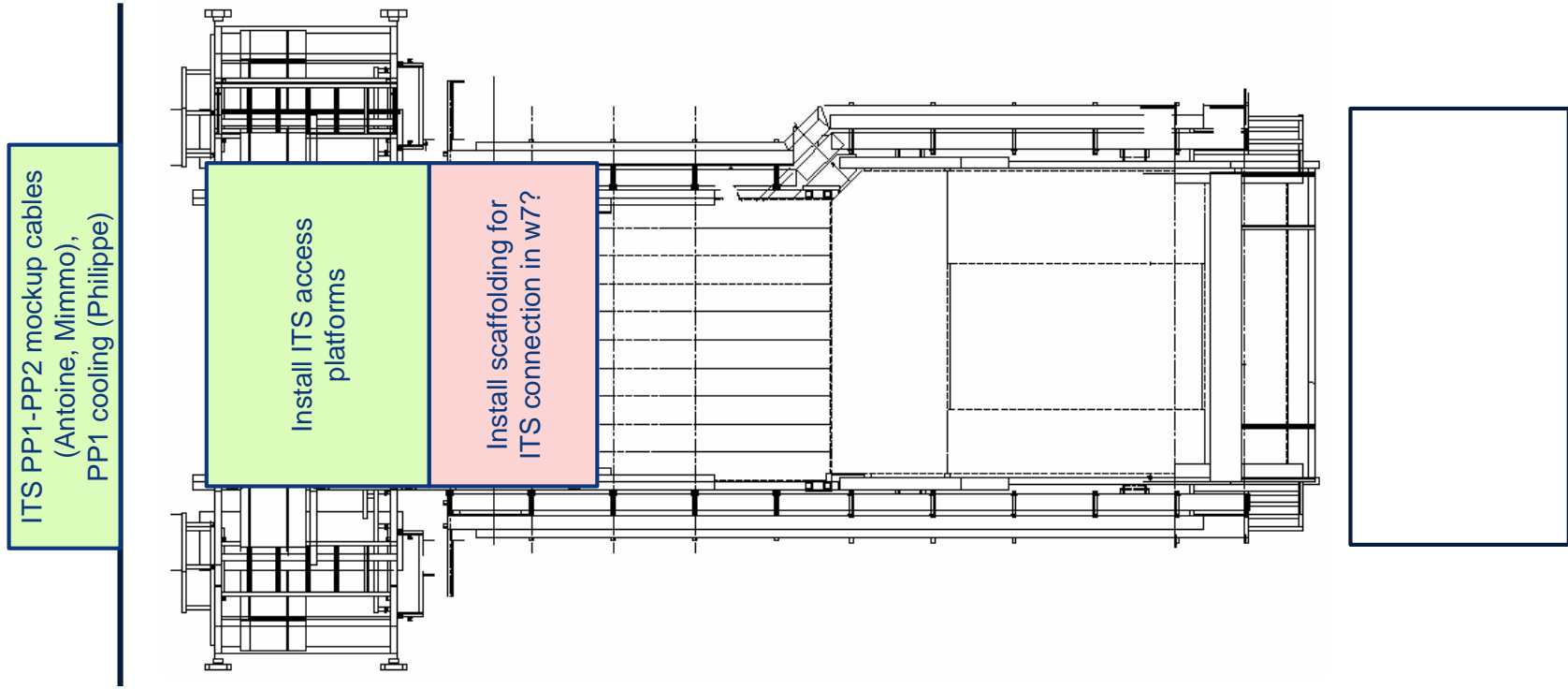
# Miniframe activities w6 – Thu 6 Feb 2020



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

Install FIT signal PP

# Miniframe activities w6 – Fri 7 Feb 2020

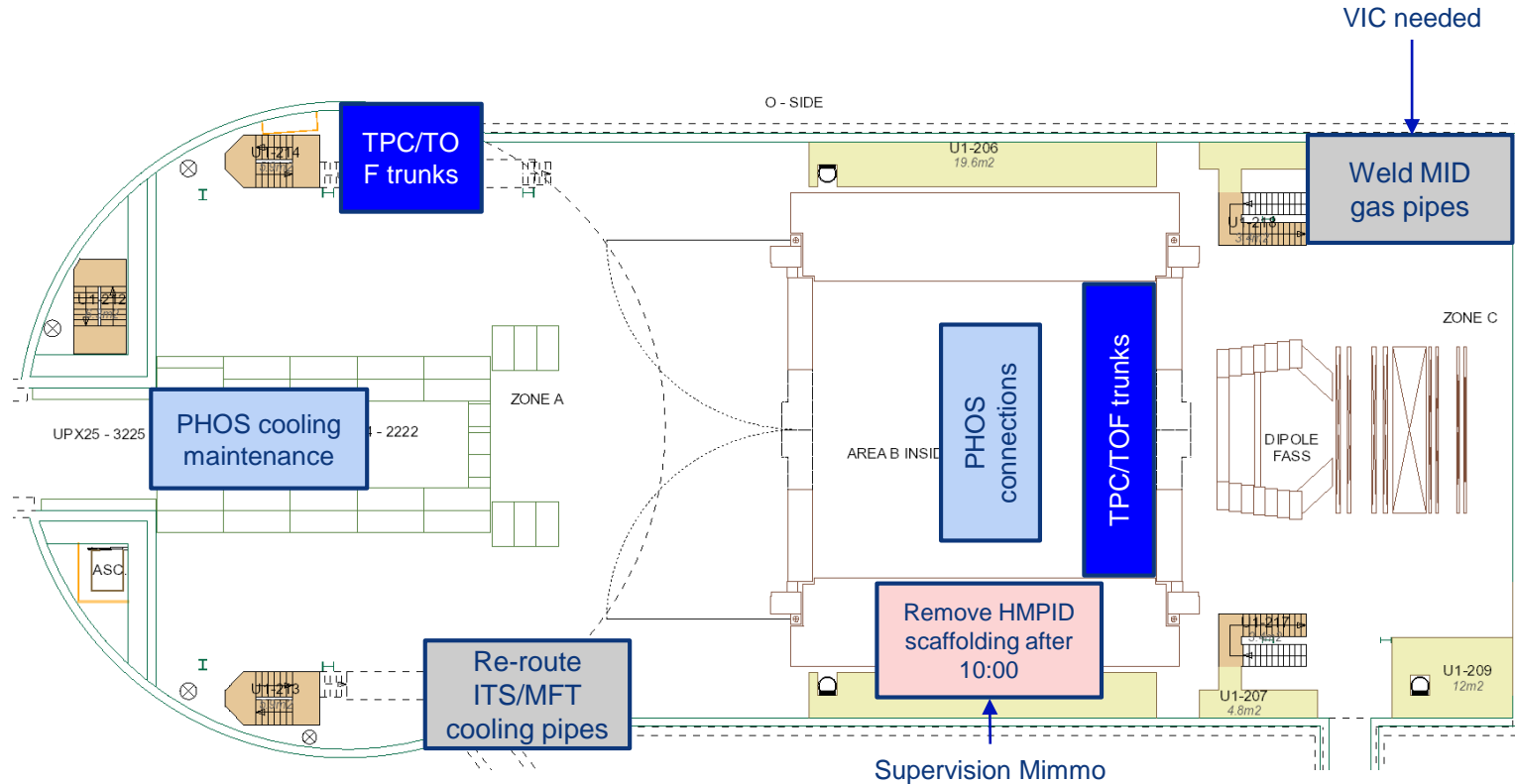


# Day-by-day sequence w7



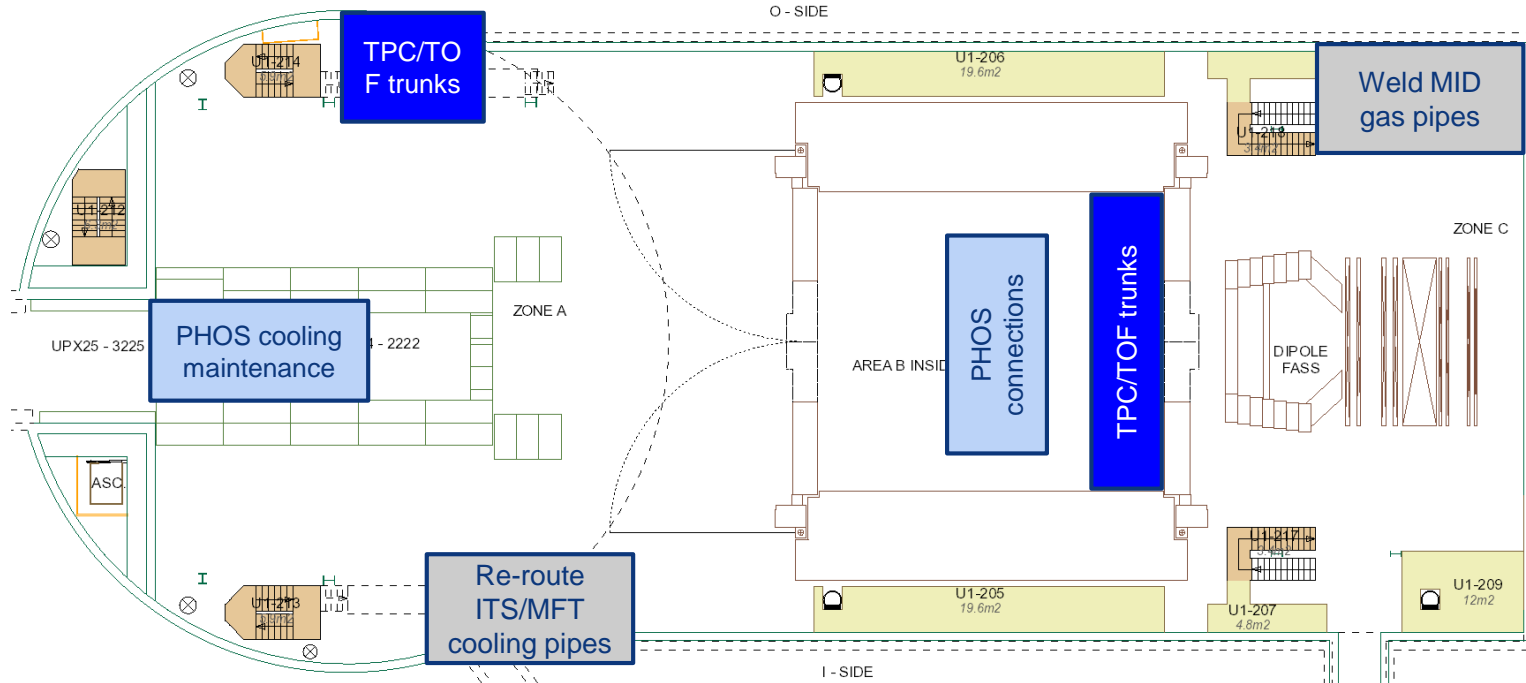
# UX25 activities w7 – Mon 10 Feb 2020

Install TA valves CR3-4 – whole week (Bruno, Philippe)

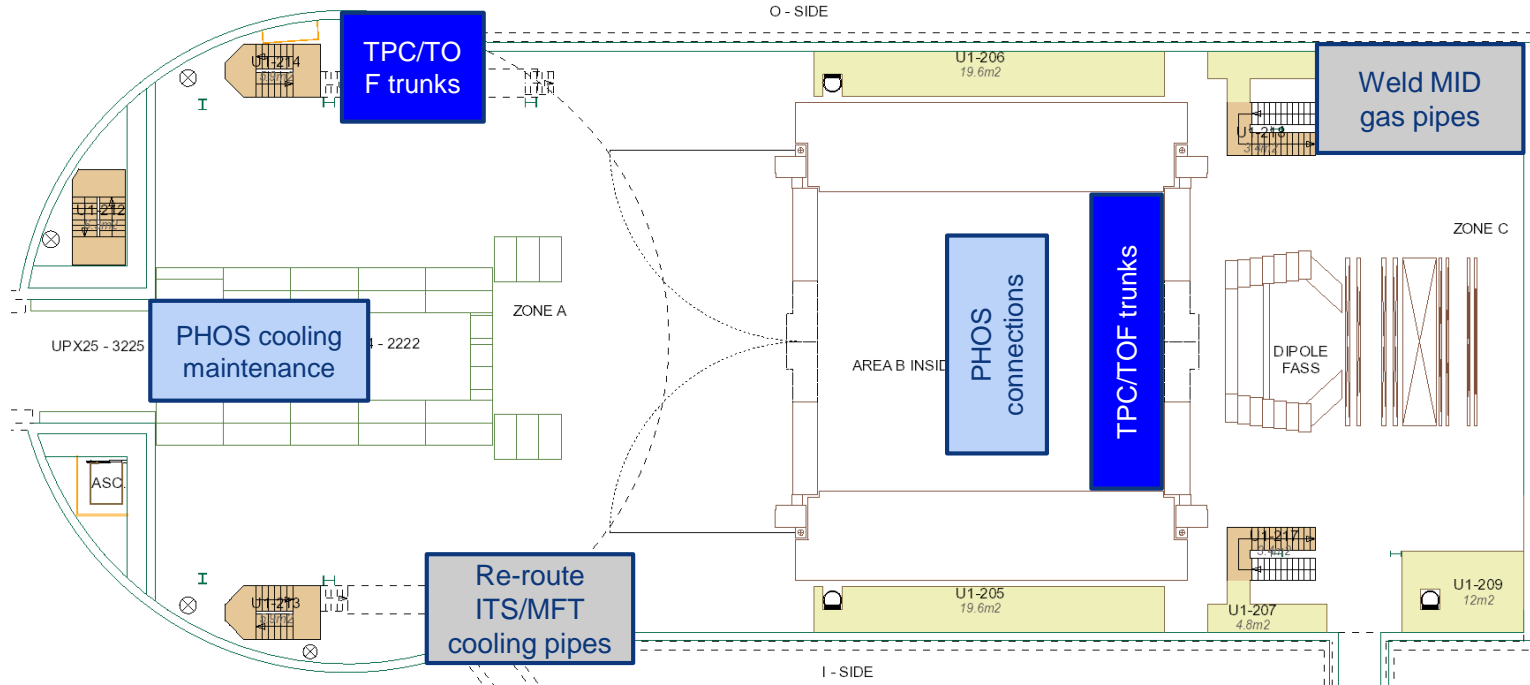


# UX25 activities w7 – Tue 11 Feb 2020

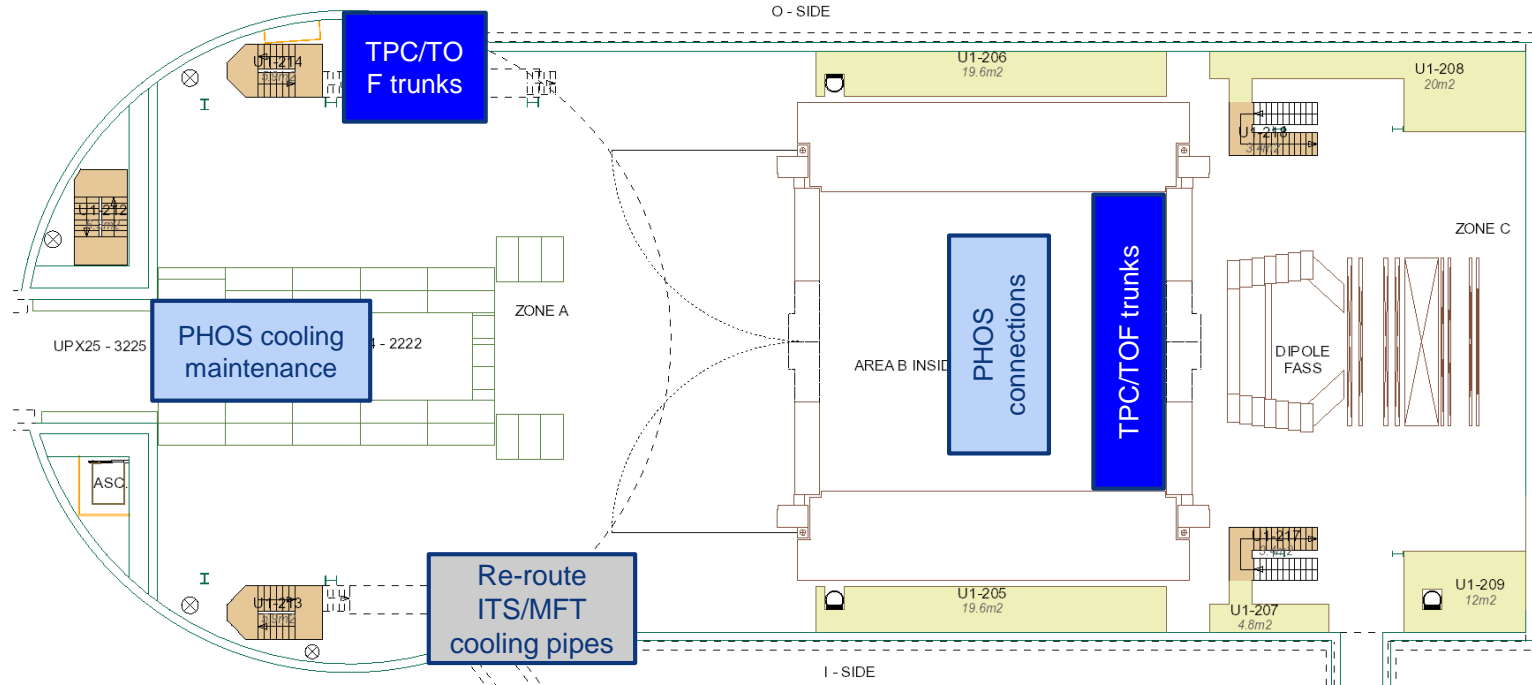
Cleaning cavern (Topnet): 13:00 to 15:00



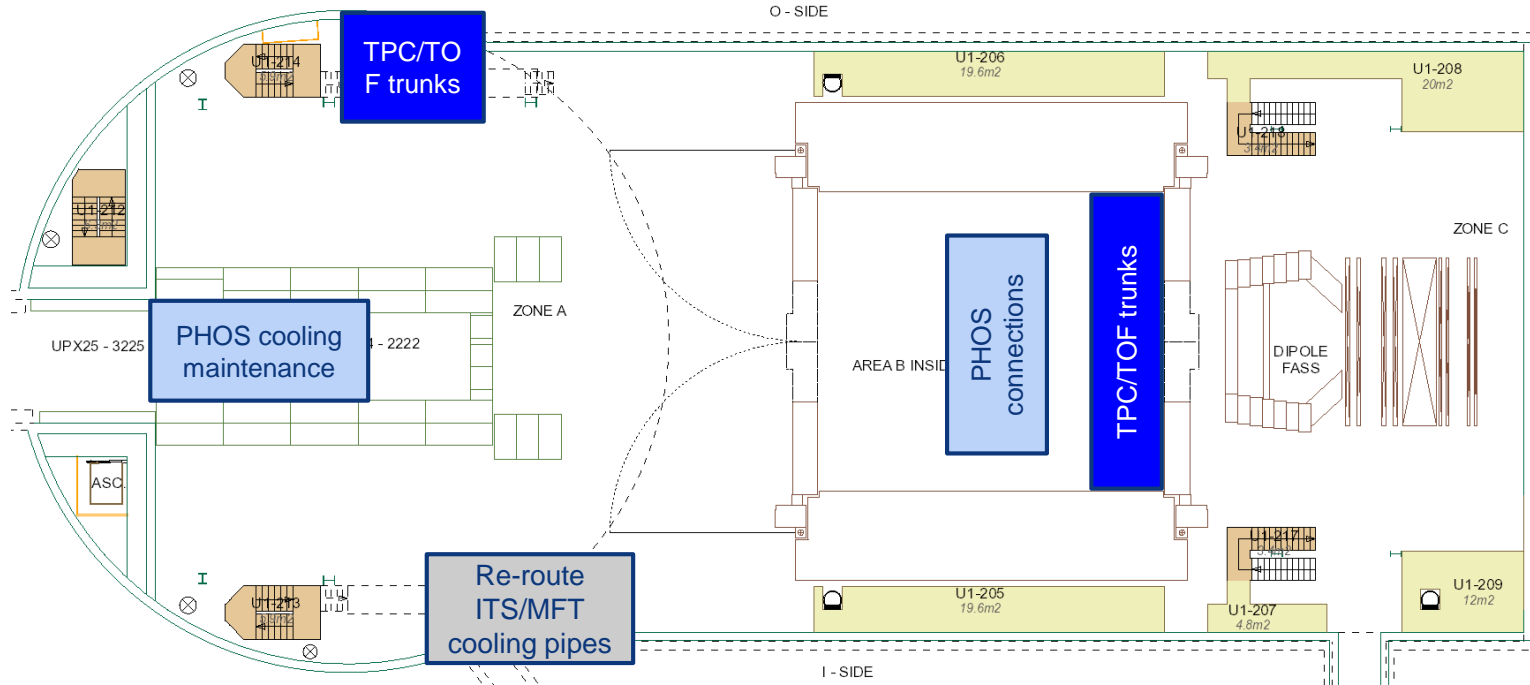
# UX25 activities w7 – Wed 12 Feb 2020



# UX25 activities w7 – Thu 13 Feb 2020

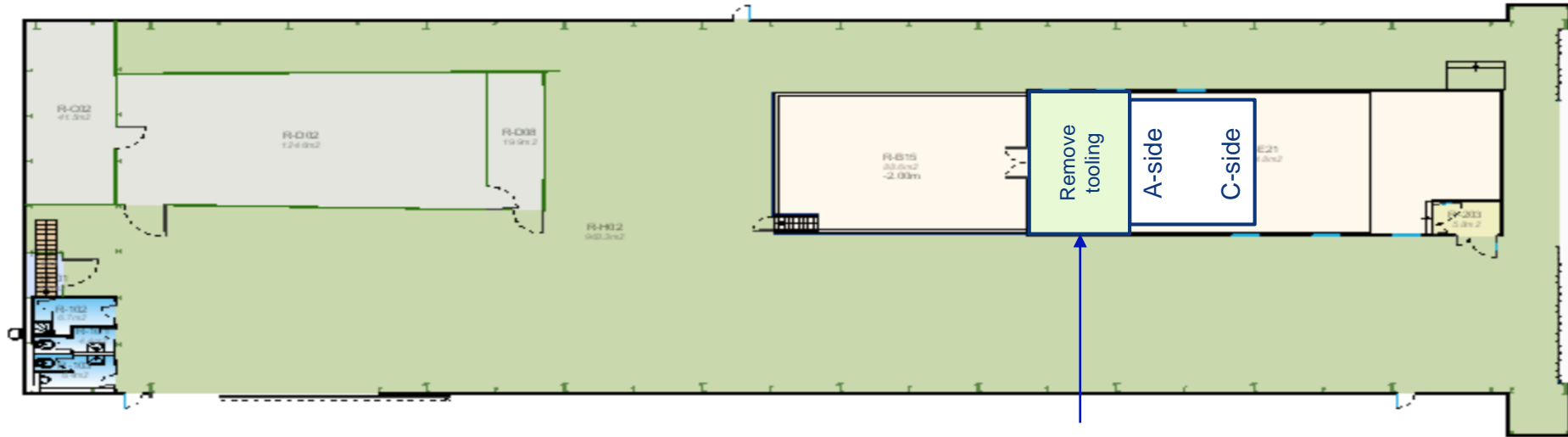


# UX25 activities w7 – Fri 14 Feb 2020



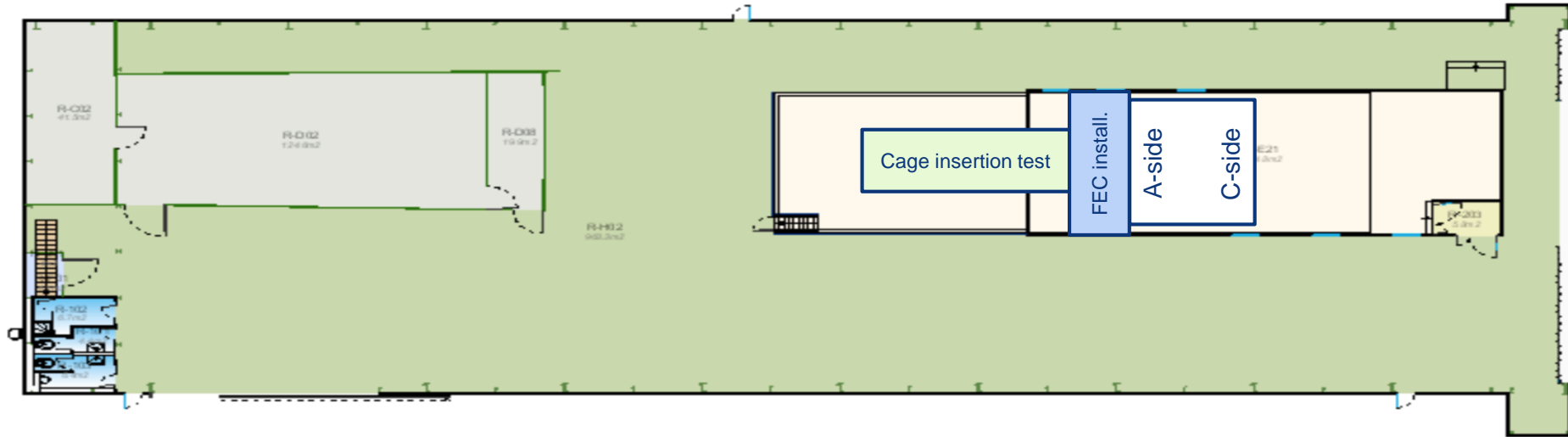


# SXL2 activities w7 – Mon 10 Feb 2020



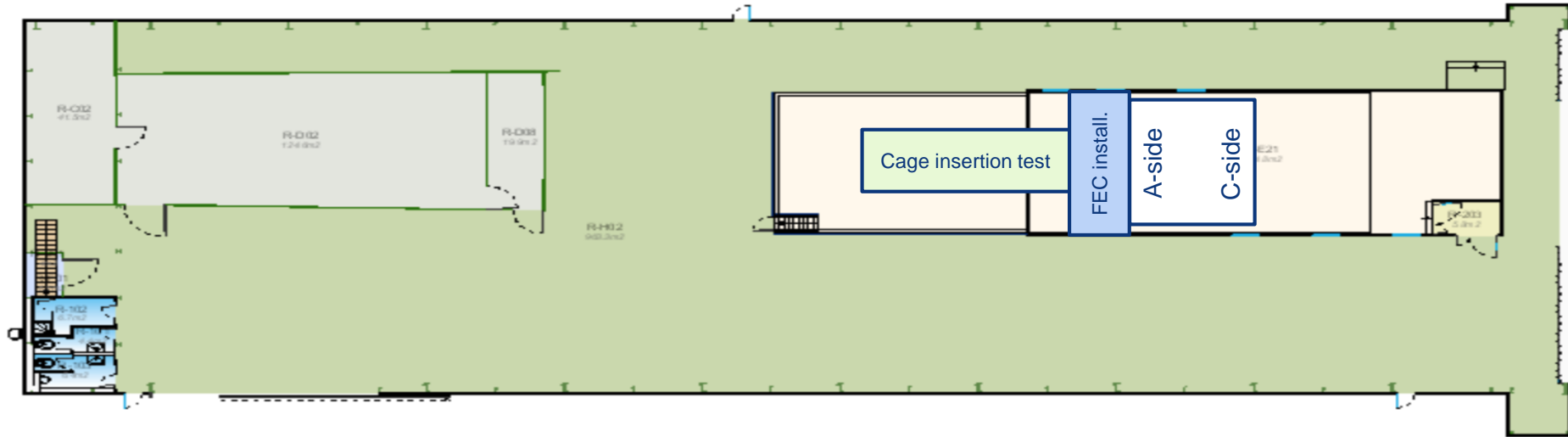
TPC, ALTEAD & P2tech: open roof,  
remove tooling, put blocks and  
nacelles, start preparing blocks for  
cage insertion test

# SXL2 activities w7 – Tue 11 Feb 2020

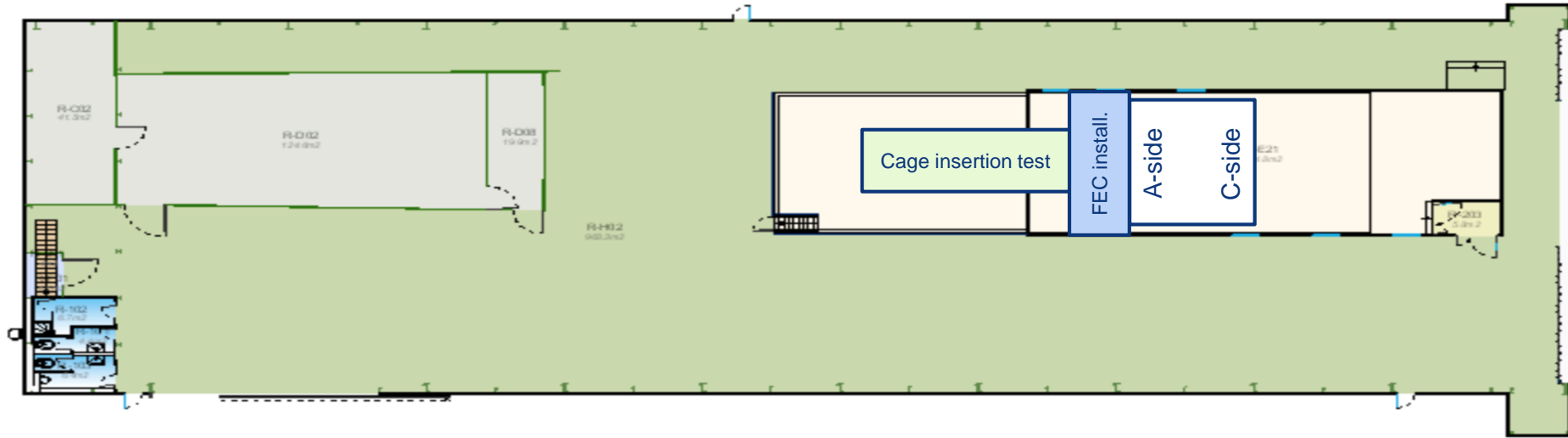


# SXL2 activities w7 – Wed 12 Feb 2020

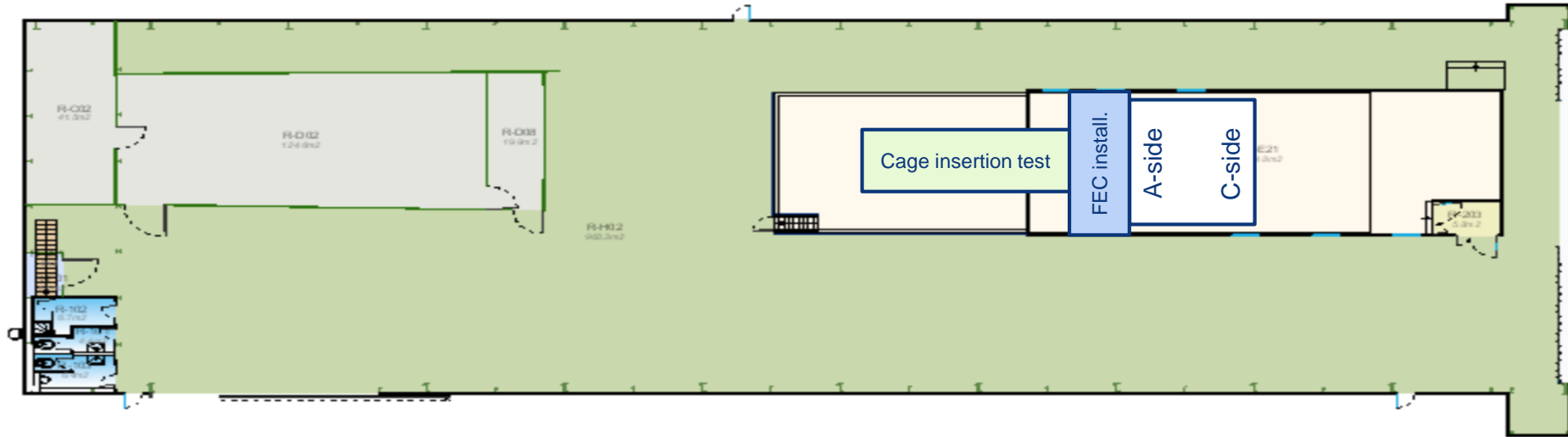
## Survey TPC



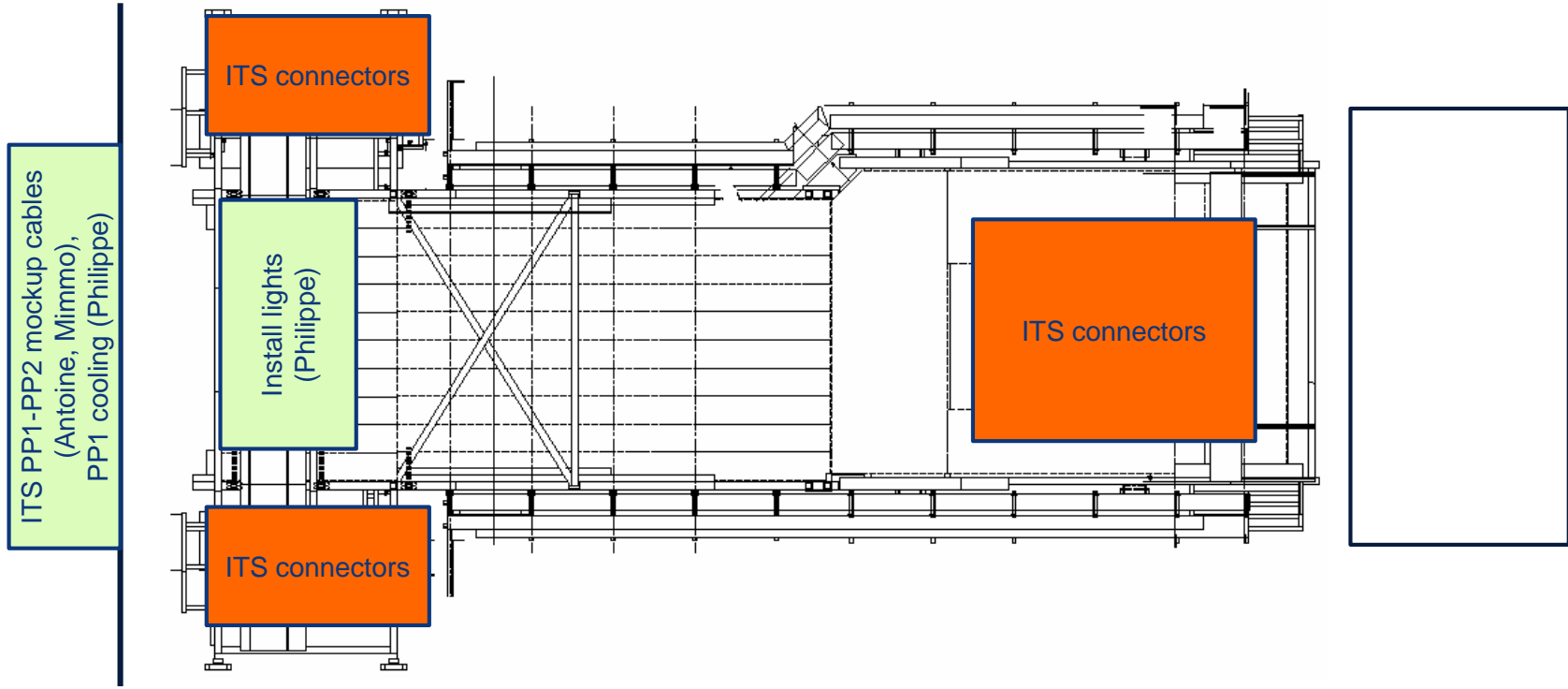
# SXL2 activities w7 – Thu 13 Feb 2020



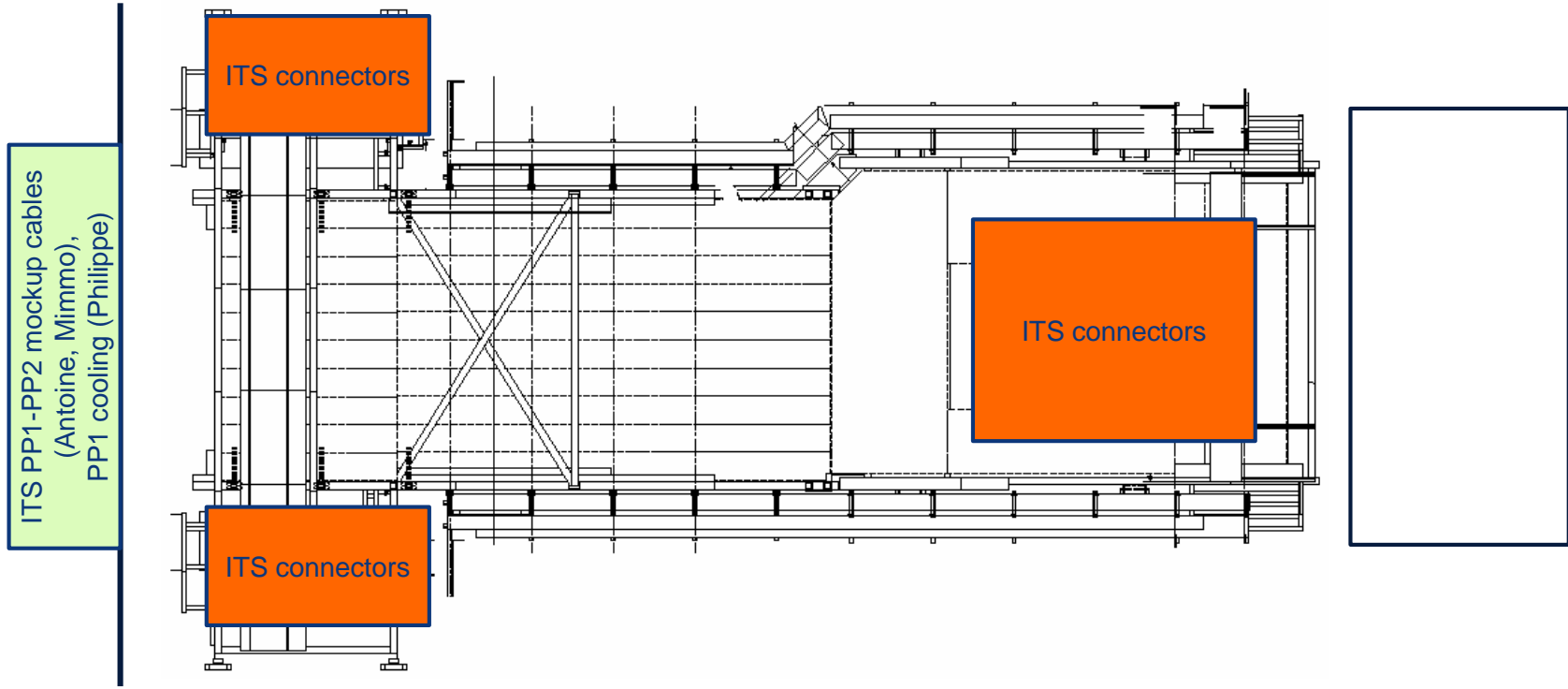
# SXL2 activities w7 – Fri 14 Feb 2020



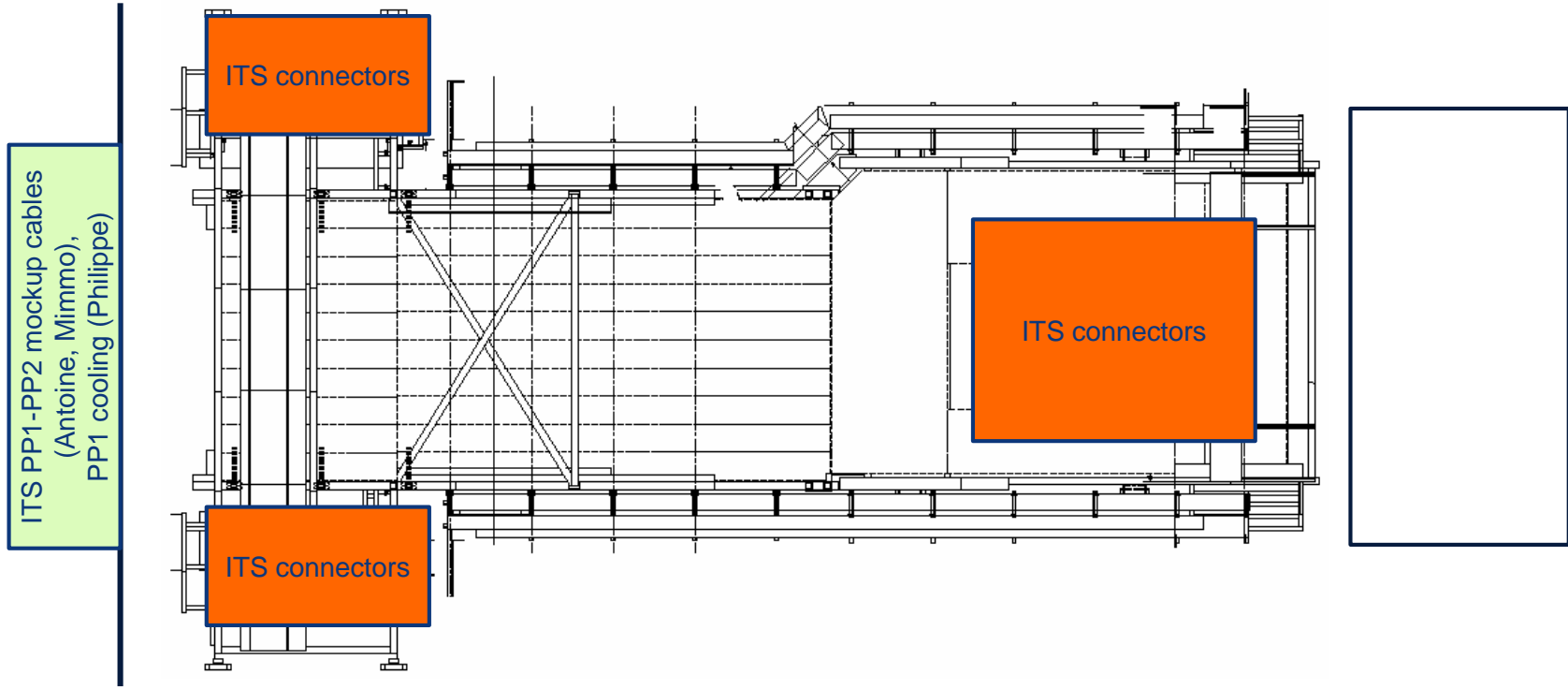
# Miniframe activities w7 – Mon 10 Feb 2020



# Miniframe activities w7 – Tue 11 Feb 2020

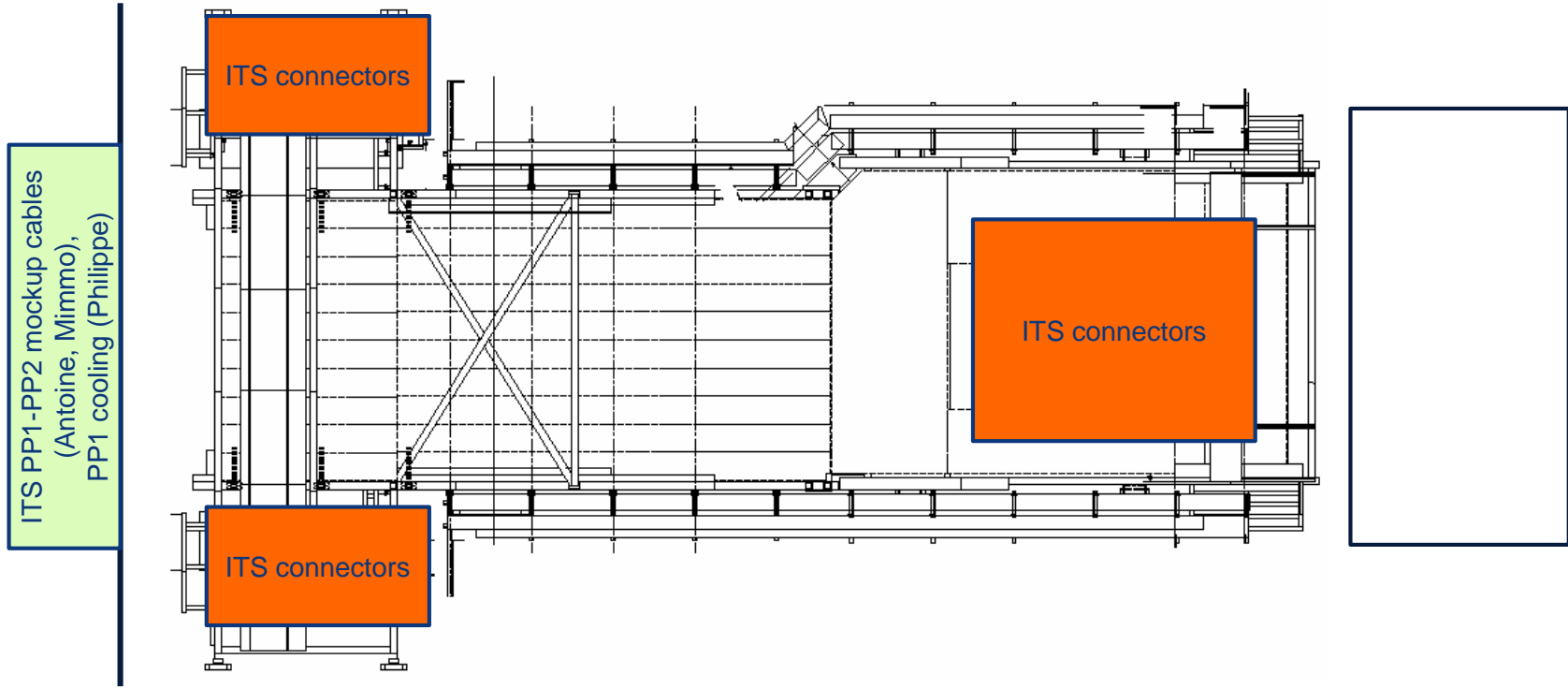


# Miniframe activities w7 – Wed 12 Feb 2020





# Miniframe activities w7 – Thu 13 Feb 2020



# Miniframe activities w7 – Fri 14 Feb 2020

