

LS2 planning meeting

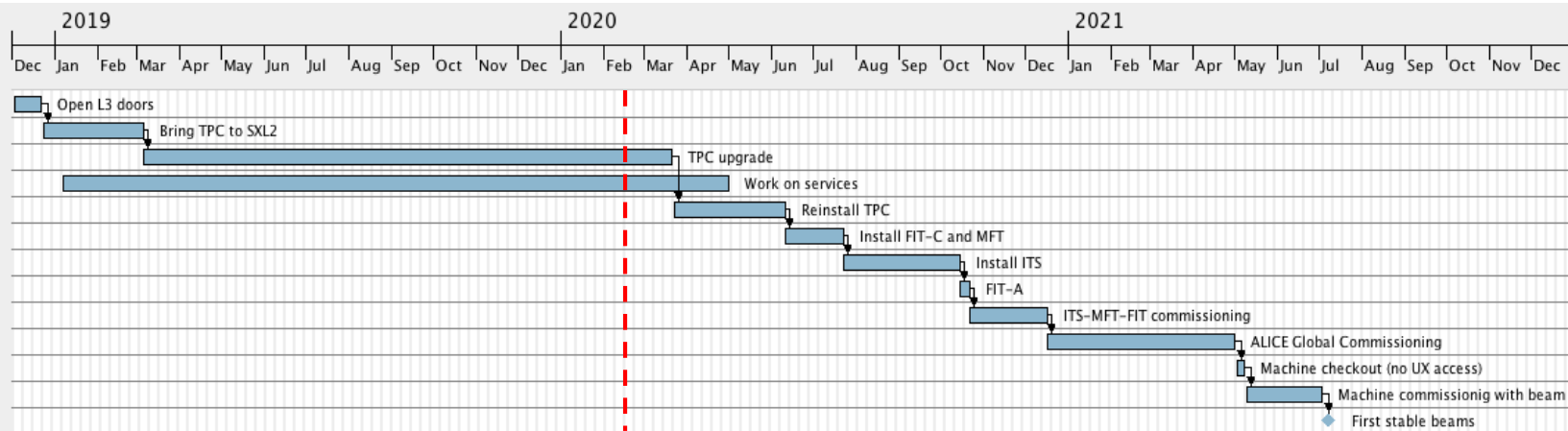
A.Tauro



LS2 master plan (v35)



| Begin date | End date | Dur... |
|------------|----------|--------|
| 3/12/18 | 21/12/18 | 15 |
| 24/12/18 | 5/3/19 | 52 |
| 6/3/19 | 20/3/20 | 273 |
| 7/1/19 | 30/4/20 | 344 |
| 23/3/20 | 10/6/20 | 58 |
| 11/6/20 | 22/7/20 | 30 |
| 23/7/20 | 14/10/20 | 60 |
| 15/10/20 | 21/10/20 | 5 |
| 22/10/20 | 16/12/20 | 40 |
| 17/12/20 | 30/4/21 | 97 |
| 3/5/21 | 7/5/21 | 5 |
| 10/5/21 | 2/7/21 | 40 |
| 5/7/21 | 5/7/21 | 0 |

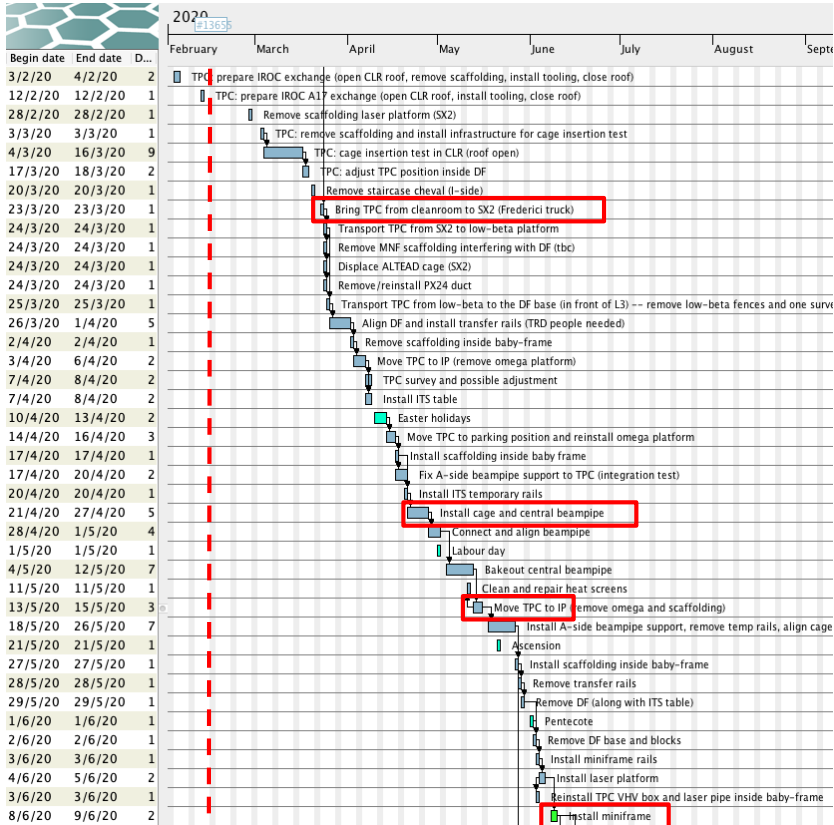


Key dates

| Activity | v35 |
|---|-------------------|
| Move TPC to SX2 | 23 Mar 2020 |
| Install TPC (parking position) | 24 Mar – 20 Apr |
| Install cage and central beampipe | 21 Apr – 12 May |
| Move TPC to IP | 13 – 15 May |
| Install Miniframe | 8 – 9 Jun |
| FIT-C & MFT installation and checks | 11 Jun – 22 Jul |
| ITS installation and checks | 23 Jul – 14 Oct |
| FDD-C installation | First half Aug* |
| FDD-A installation | 1-10 Sep |
| FIT-A installation | 15 – 21 Oct |
| ITS & MFT commissioning time | 8w |
| ALICE global commissioning time | 20w |
| End of LS2 – stop UX25 access | 1 May 2021 |
| 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 5th - Mar 20th - complete TPC, cage insertion test in SXL2 cleanroom, prepare for TPC transportation, TOF and HMPID activities in the cavern

Mar 23rd - transportation TPC to SX2

Mar 24th - Apr 20th - reinstall TPC
TPC moved to IP, adjusted and put back to parking position

Apr 21st - May 12th - install cage and central beampipe

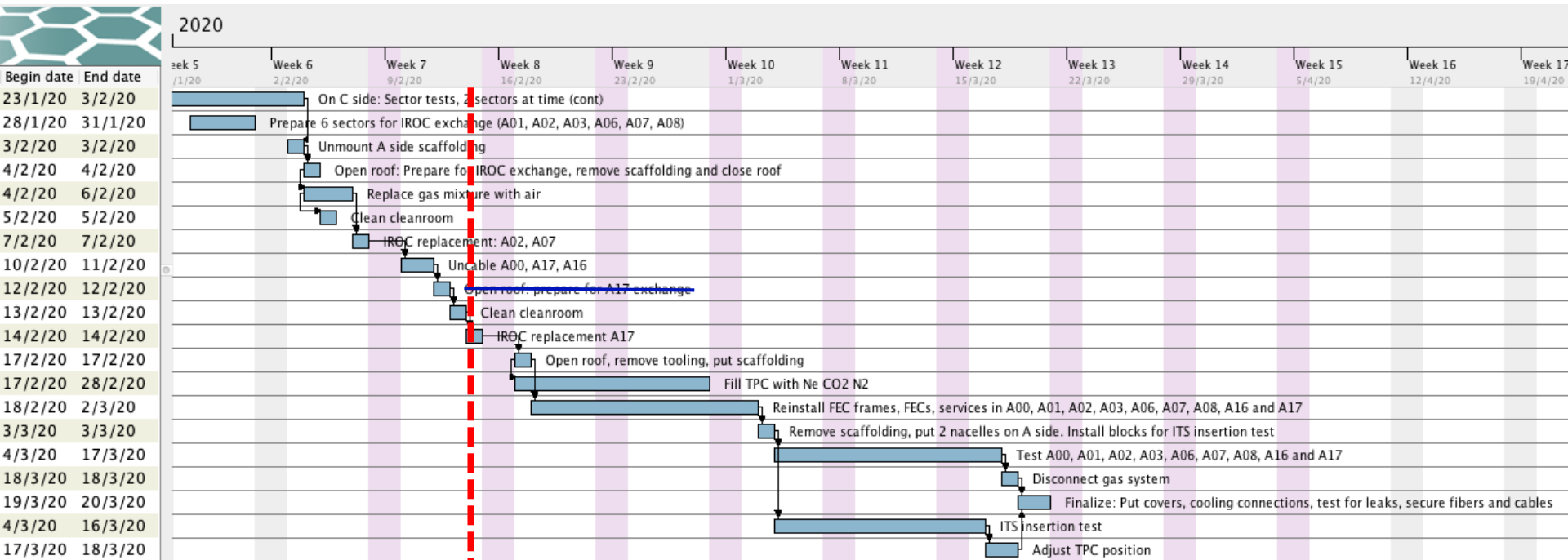
May 13th - 15th - move TPC to IP - start connection TPC to services

May 18th - Jun 5th - prepare miniframe installation

Jun 8th - 9th - reinstall miniframe

TPC upgrade sequence

TPC schedule v42

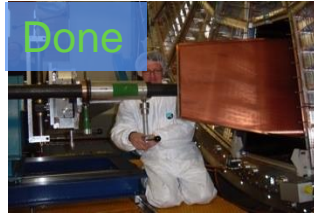


TPC upgrade sequence



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

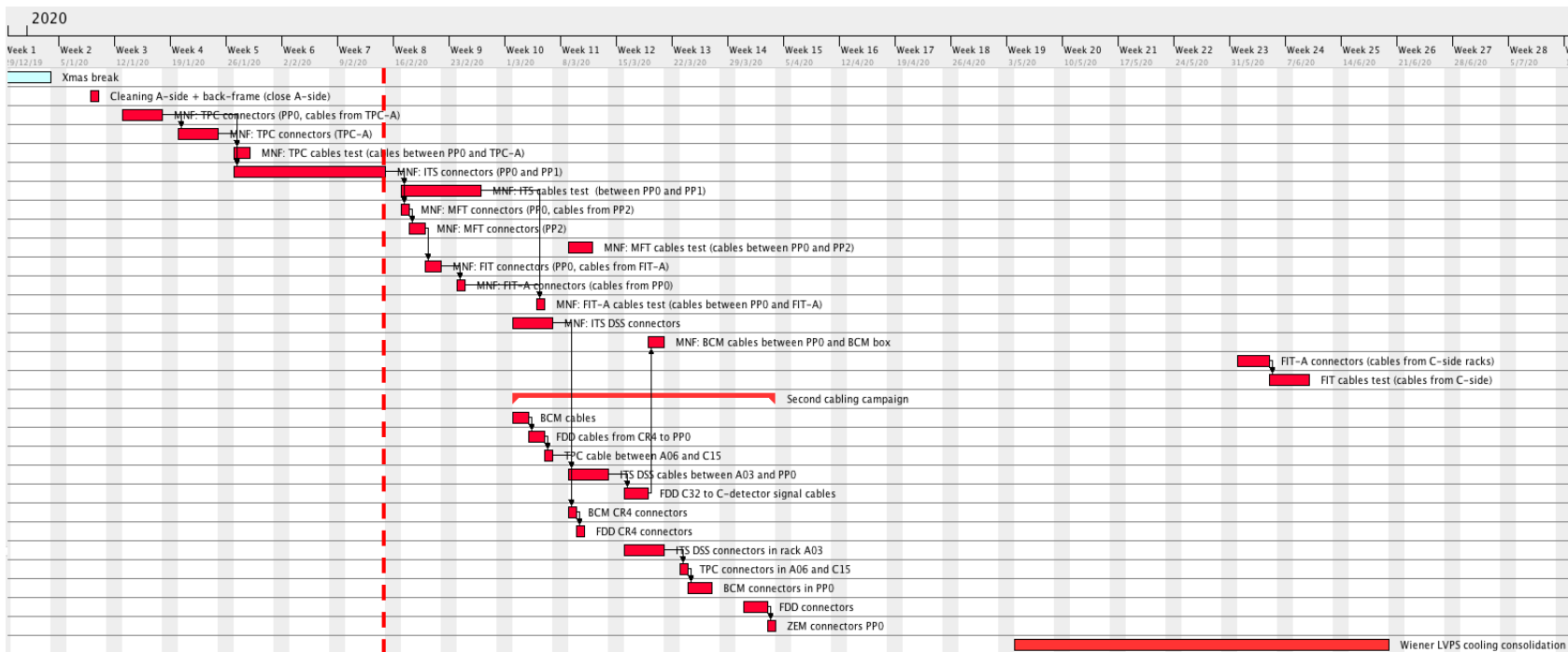
14 Oct (A)
31 Oct (C)

25 Nov (A)
3 Feb (C)

20 Mar 2020

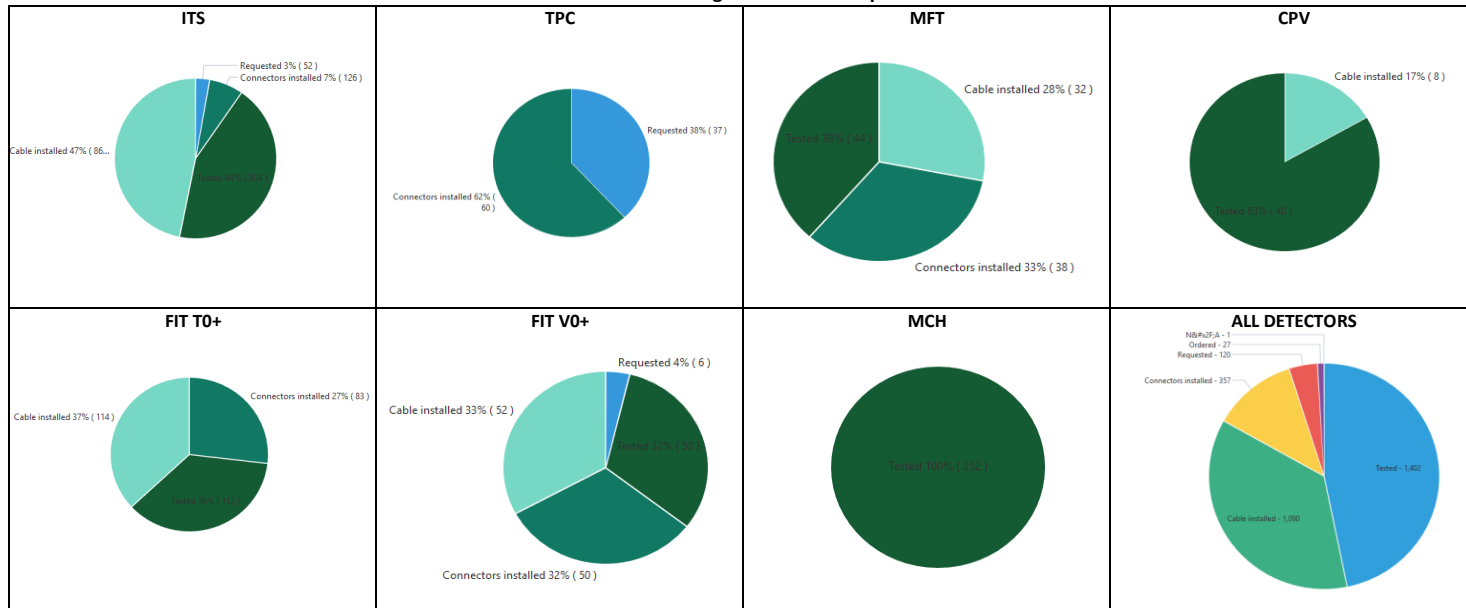
TPC schedule v42

Copper cables (EN-EA)



Copper cables (EN-EA)

ALICE LS2 - EN-EA cabling control follow-up 14-02-2020



Progress pulling: 96%
 Progress connectors: 59%
 Progress test: 47%

Copper cables (EN-EA)

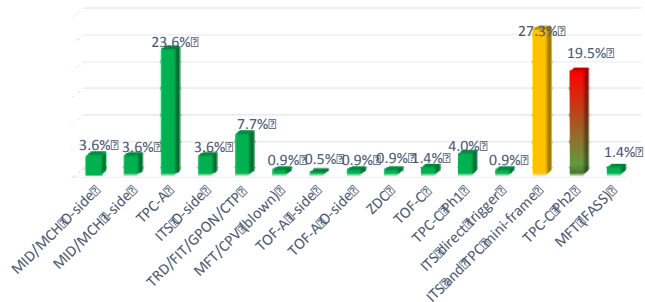


Optical fibers (EN-EL)

| Description | | December | | | | | | | | | | | | January 2020 | | | | | | | | | | | | February | | | | | | | | | | | |
|--|-------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | S50 | S51 | S52 | S53 | S54 | S55 | S56 | S57 | S58 | S59 | S60 | S61 | S03 | S04 | S05 | S06 | S07 | S08 | S09 | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 | S19 | S20 | S21 | S22 | S23 | S24 | | |
| TPC-C & TOF trunk (FASS O-Side) (10.70) | POSE | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | TERMINATION | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | MATERIEL | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| 60 TRUNK 144 OF 27m (SURFACE) | POSE | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | TERMINATION | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | MATERIEL | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| MFT trunk (FASS O-Side) (50) | POSE | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | TERMINATION | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | MATERIEL | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| INSTALLATION D'UN DUCT ET SOUFFLAGE D'UN CÂBLE | POSE | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | TERMINATION | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |
| | MATERIEL | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | | [Grey] | | | | | | | | | | | |

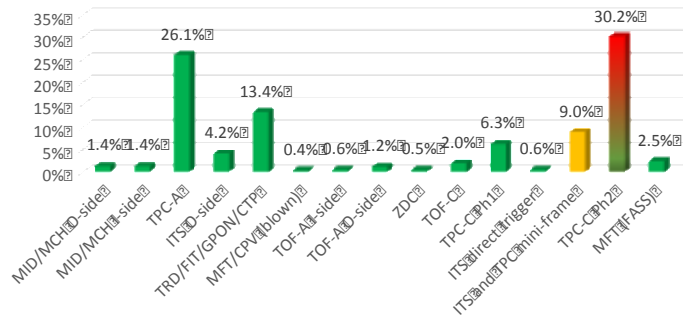
Optical fibers (EN-EL)

Cables pulled as a percentage of total number
220

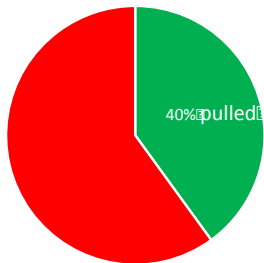


- Completed
- To be completed
- Completed on miniframe, to be pulled to A19 in June

Length pulled as a percentage of total length
~18 km



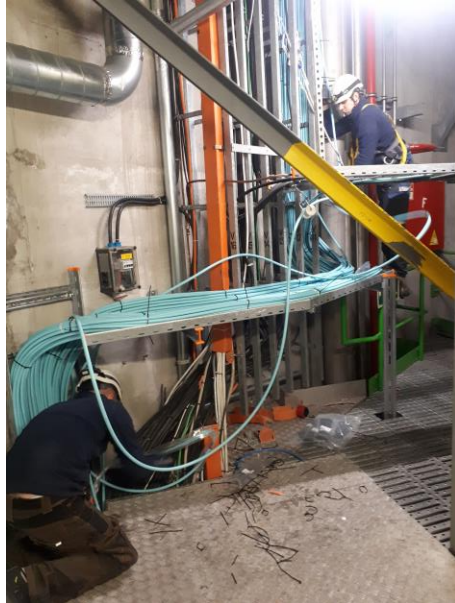
TPC-C current status



Overall progress: ~ 75% pulled

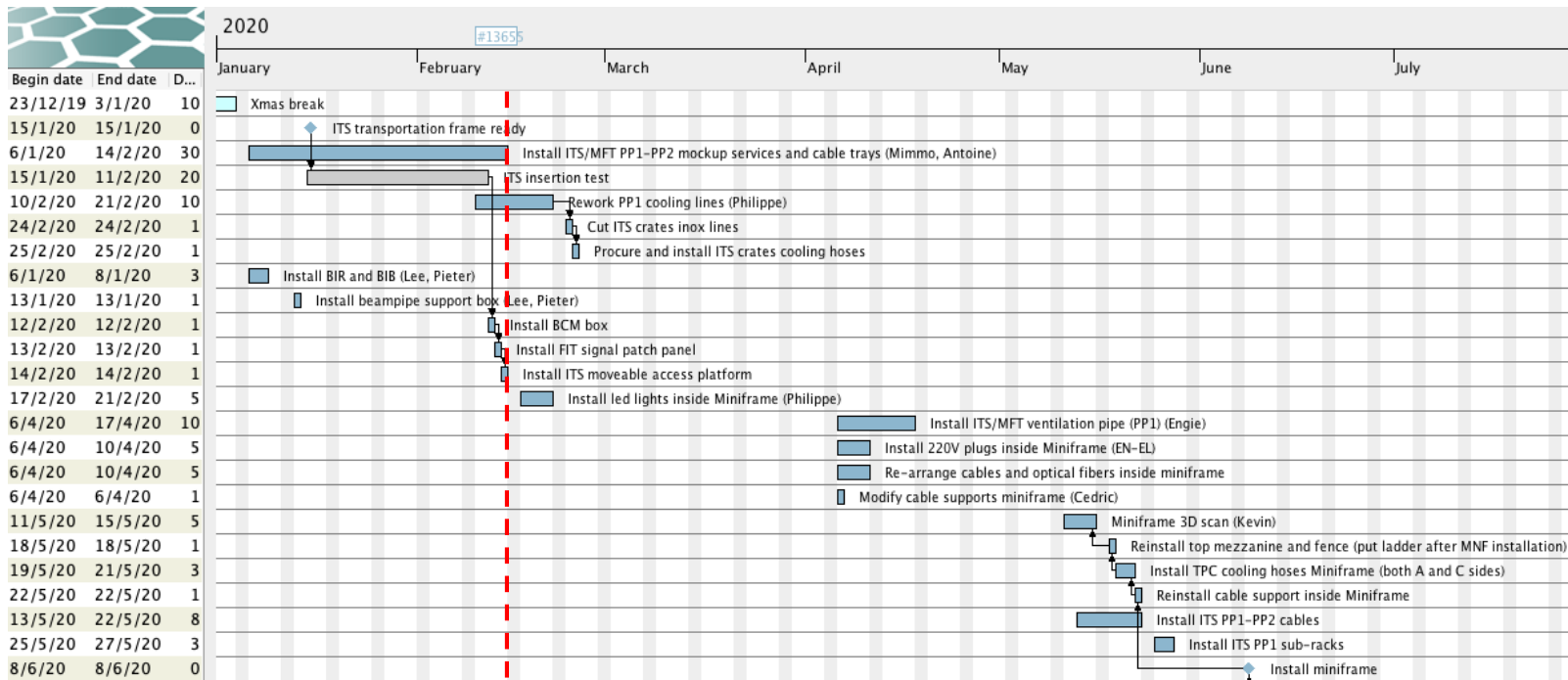
Completion by March (miniframe in June)

Optical fibers (EN-EL)



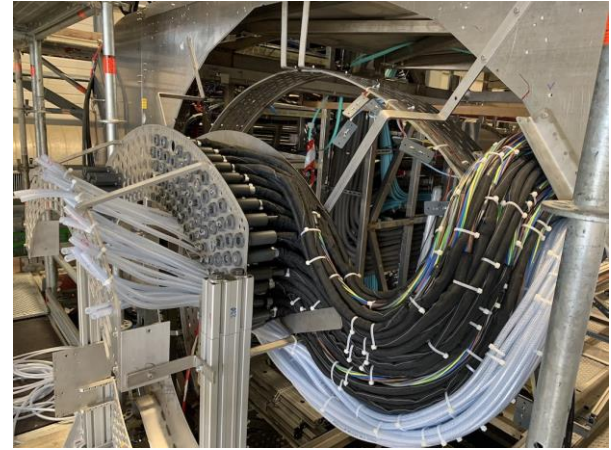
Miniframe schedule

16 weeks to reinstallation



ITS mockup cables

PP1-PP2



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: I01, I02
 - PHOS-CPV: A16, A17
 - CTP: C24, C25, C26, C27 (CTP) (and VME crates on)
 - MCH: C08, C10, C37, C39
 - TOF: O03, O04, O05, O30, O31, O32, I03, I04, I05, I30, I31, I32
 - TRD: O06, O08, O26-29, I06, I08, I26-29, C16-19, C29
 - Dcal, EMcal: A14, O12
- Detectors can be powered, compatible with current activities inside L3

CR3 status

(A.Augustinus)

- February
 - (10.02 – 21.02) Modify water circuit (add TA valves) – kept DCS up and running – DONE (valves in CR4 are also installed)
 - Extension of main network starpoint outside CR2 (preparation)
 - Arrival of new racks end of February (t.b.c.)
- March
 - (02.03 – 20.03) Installation of new racks, water connections
 - (from 23.03) Installation of network fibres (between CR1,starpoint and CR3), electricity
 - Arrival of new servers end of March
- April
 - Installation of the servers in the new racks
 - Installation of network infrastructure (some network interruptions to be foreseen, details to be defined with IT-CS)
- May-June-July
 - Migration from old servers to new servers (first central systems, then detector systems)
- July-August
 - Removal of old servers and last old racks

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~~
 - ~~Gas extraction: w8/2019~~
 - ~~UX25 cavern: w2/2020~~
 - ~~MCH and MTG: Mon-Thu - w3/2020~~
 - L3: need to replace extractor → 2 days stop → will cut flammable gases (maybe in week 17)
 - 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.

Other tests foreseen in 2020-21

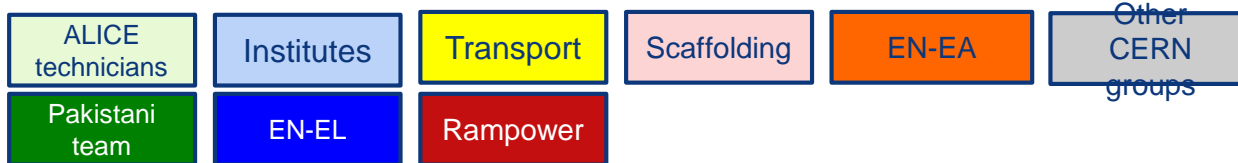
2020:

- 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:

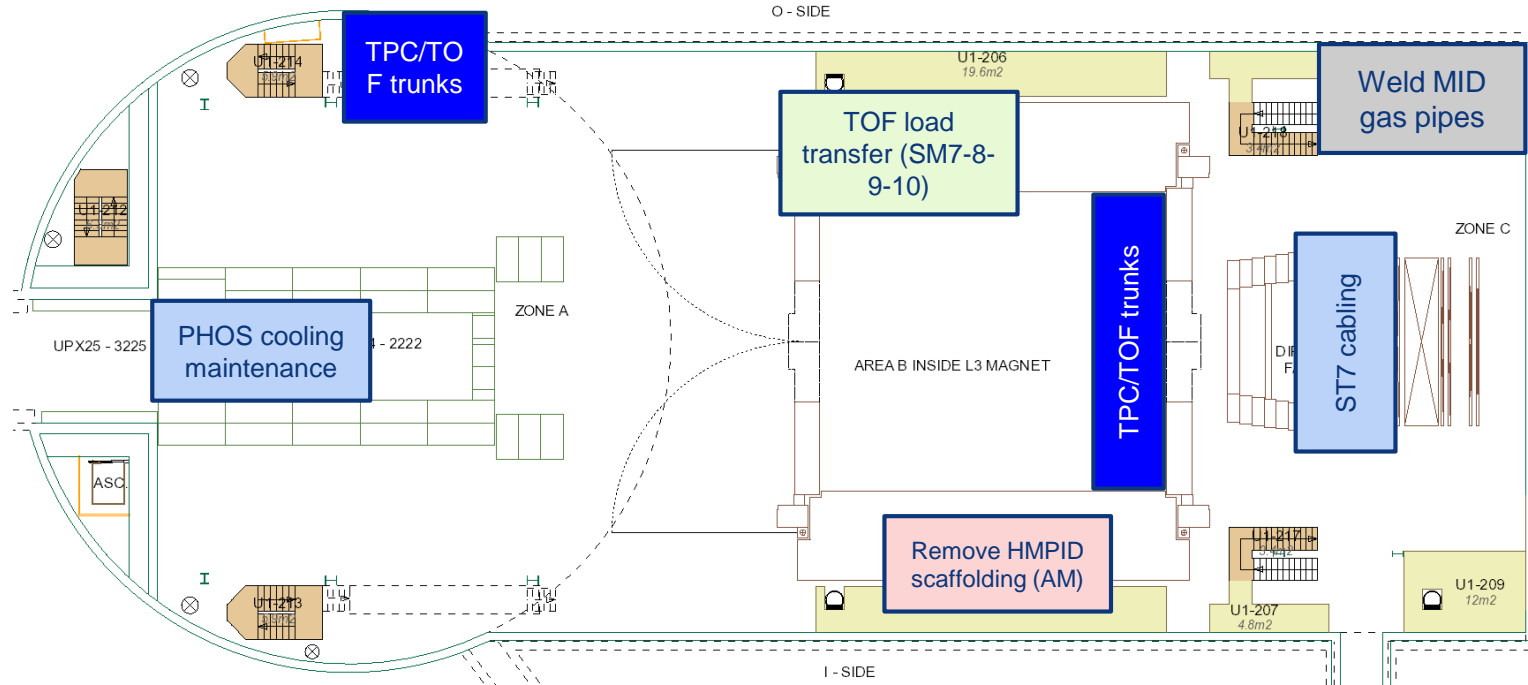
- DSO test: no access to UX25 on 8 and 9 Mar 2021 (tbc)
- LHC sector test (beam through ALICE): no access to UX25 from 26 to 29 March 2021

Day-by-day sequence w7



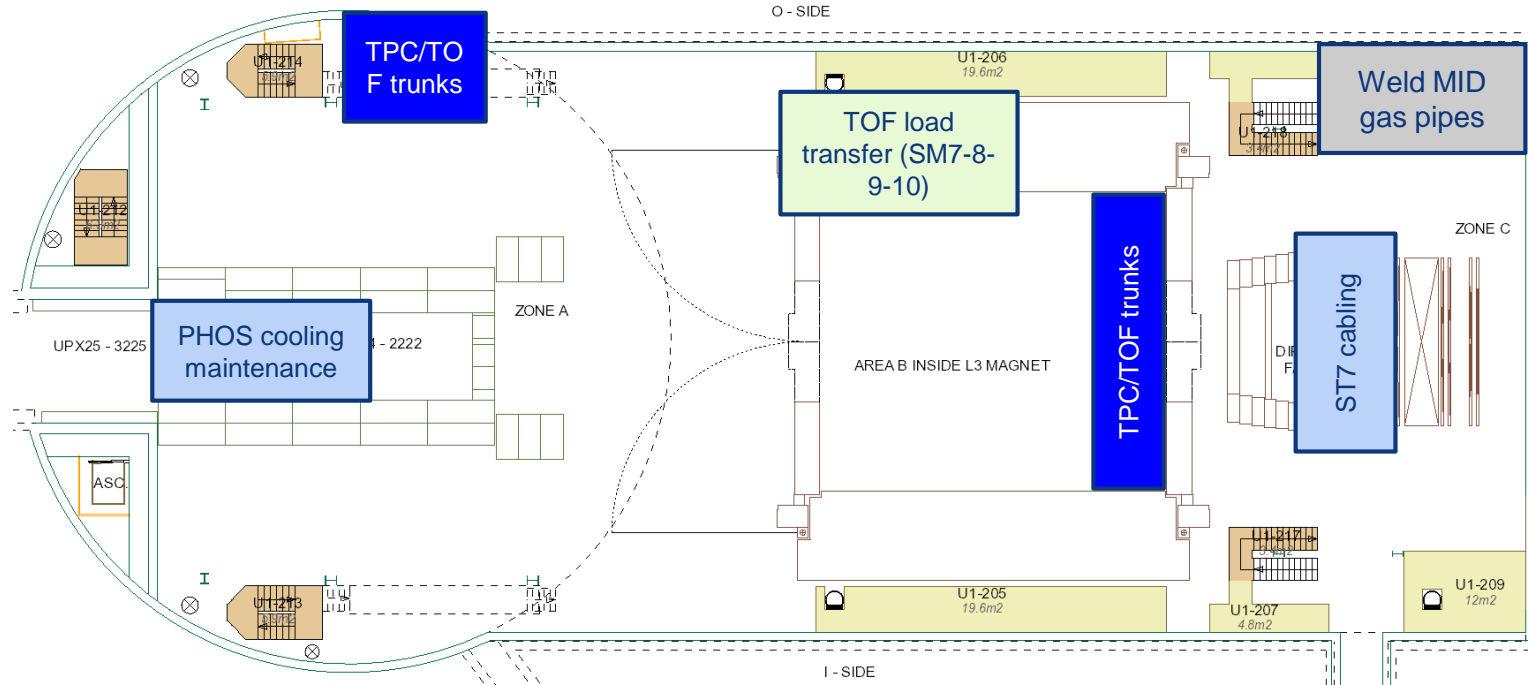
UX25 activities w7 – Mon 10 Feb 2020

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



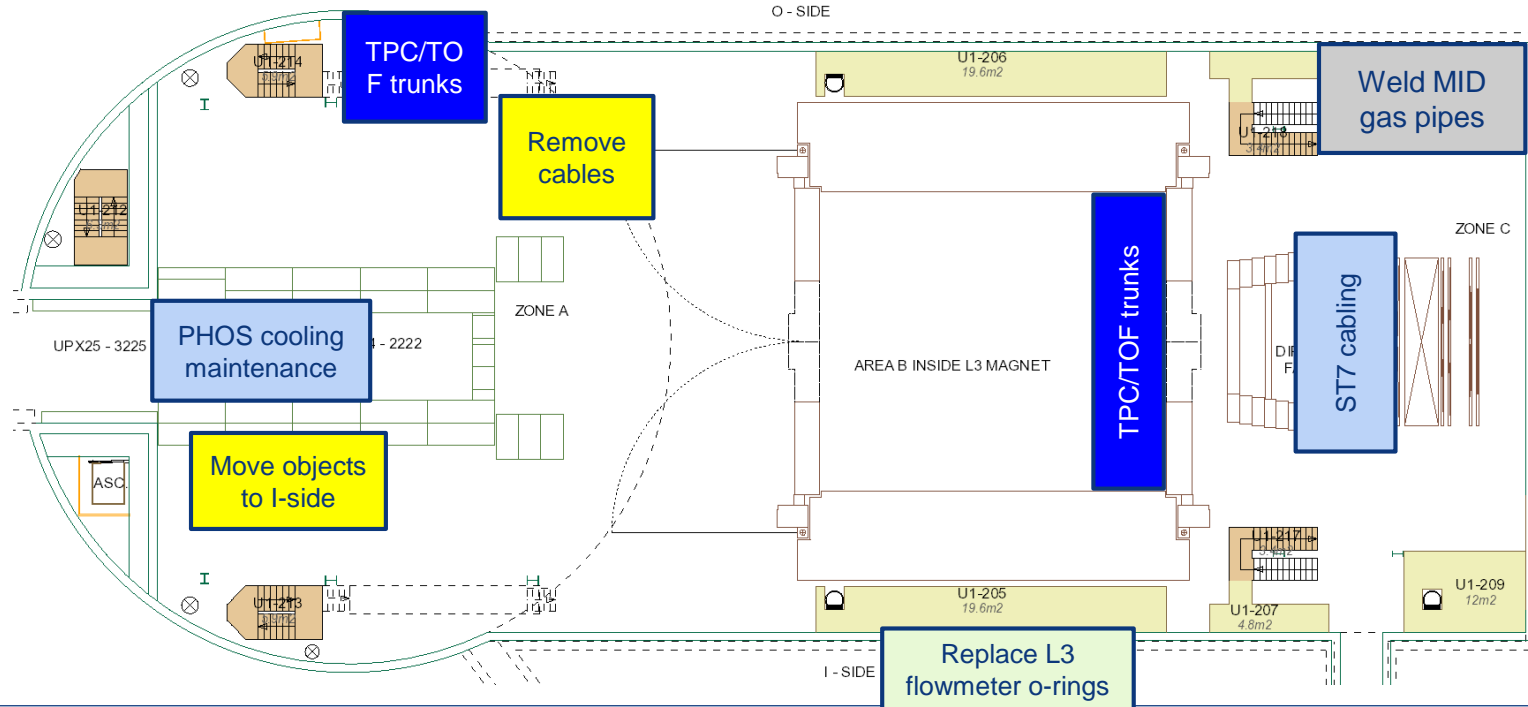
UX25 activities w7 – Tue 11 Feb 2020

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

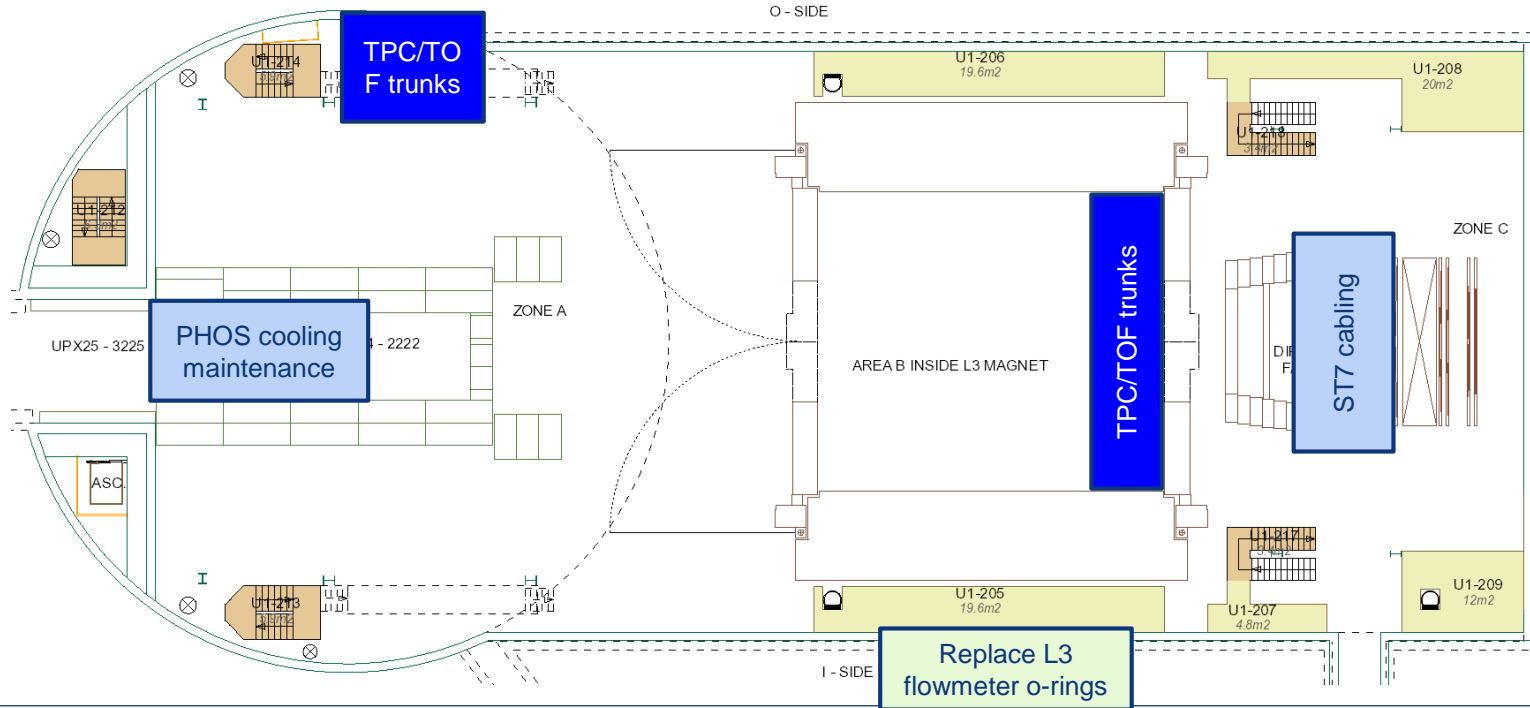


UX25 activities w7 – Wed 12 Feb 2020

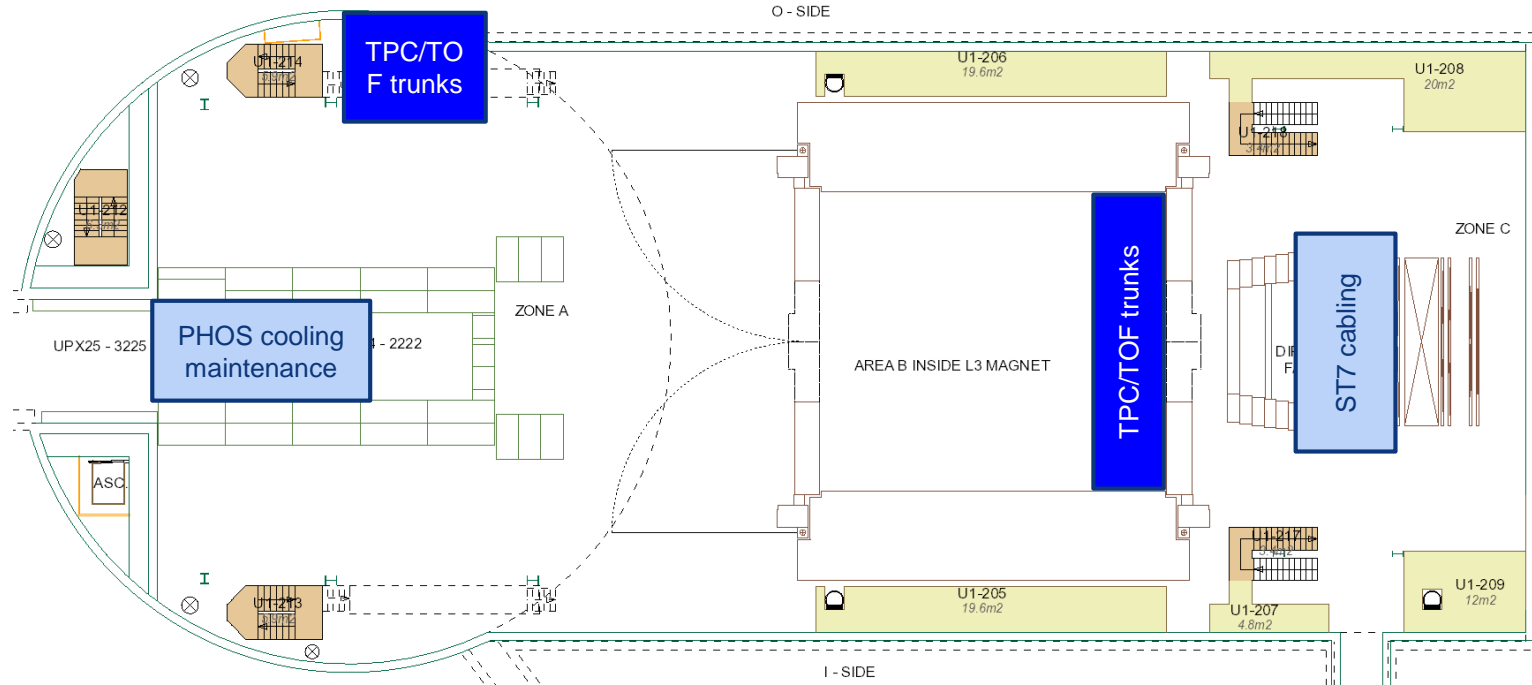
EN-CV: maintenance cavern ventilation (extraction: UAIE-231 and UAIE-232)



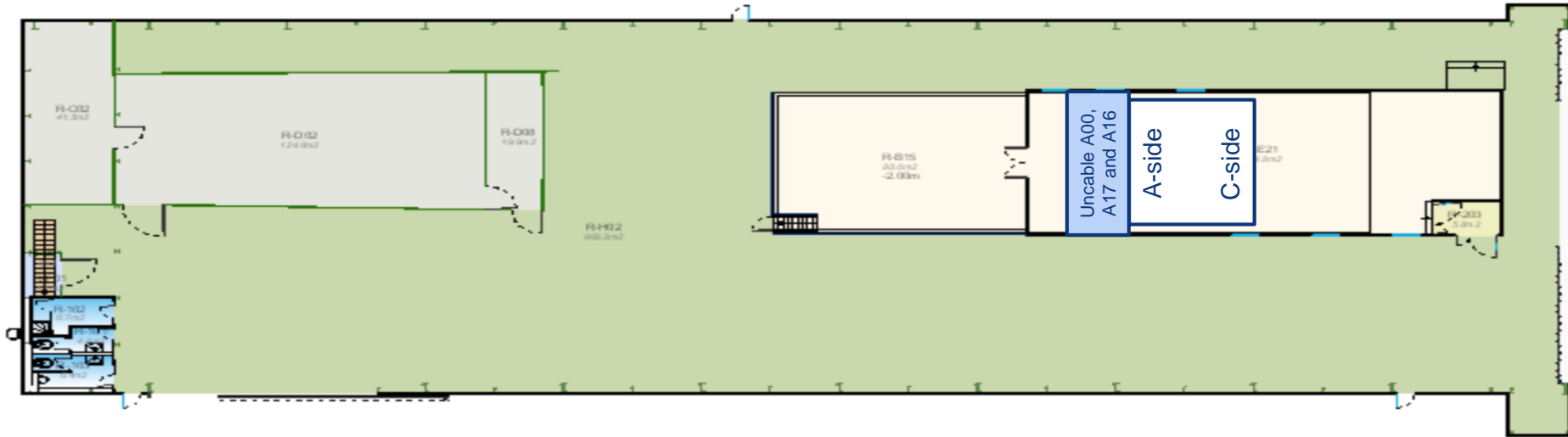
UX25 activities w7 – Thu 13 Feb 2020



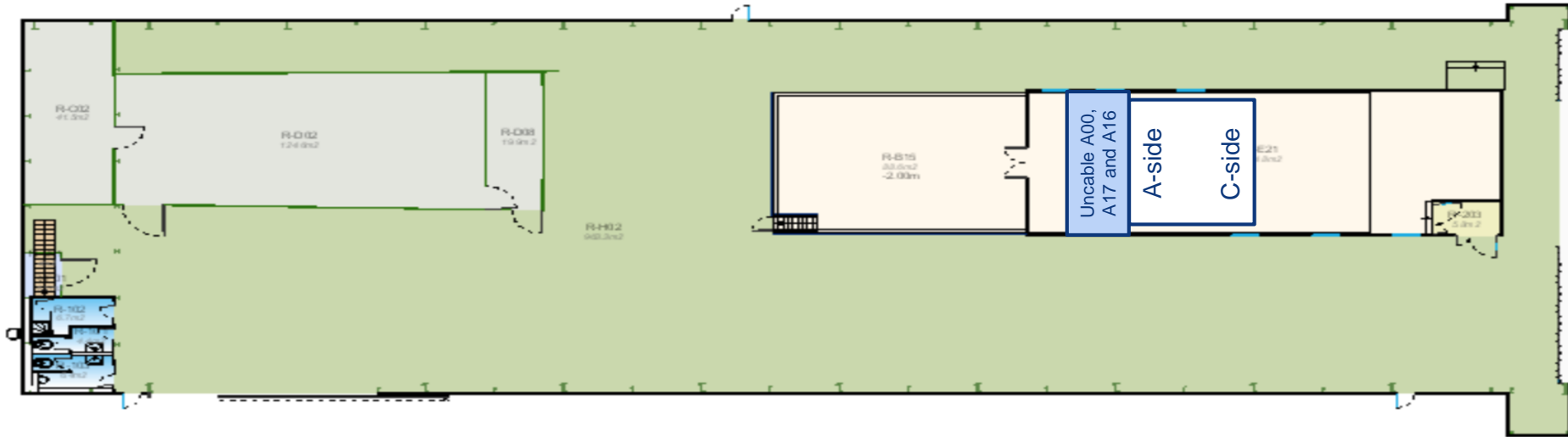
UX25 activities w7 – Fri 14 Feb 2020



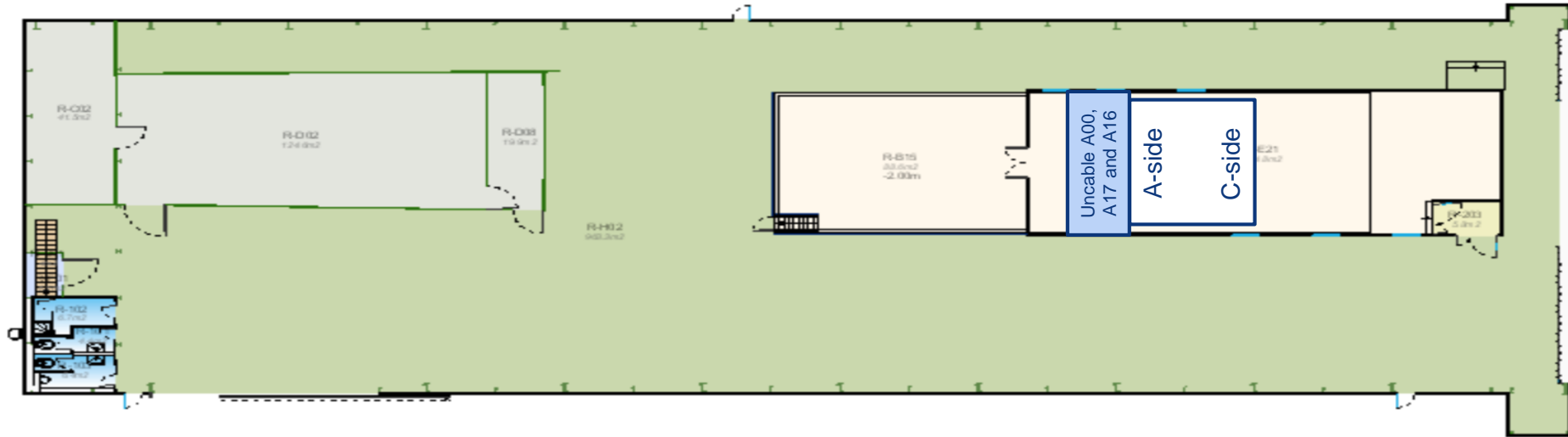
SXL2 activities w7 – Mon 10 Feb 2020



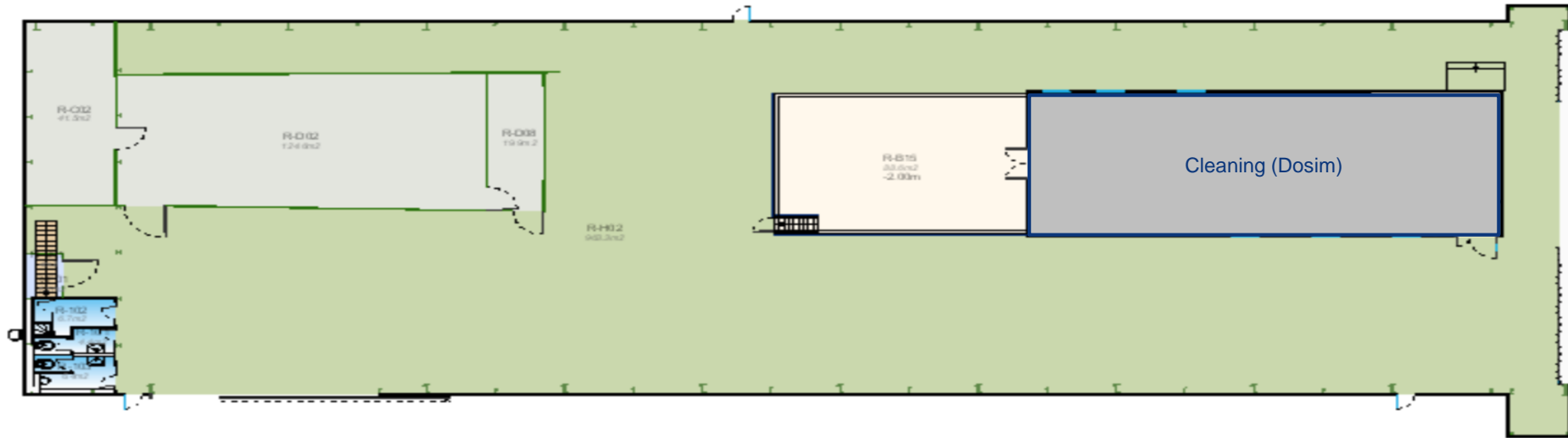
SXL2 activities w7 – Tue 11 Feb 2020



SXL2 activities w7 – Wed 12 Feb 2020

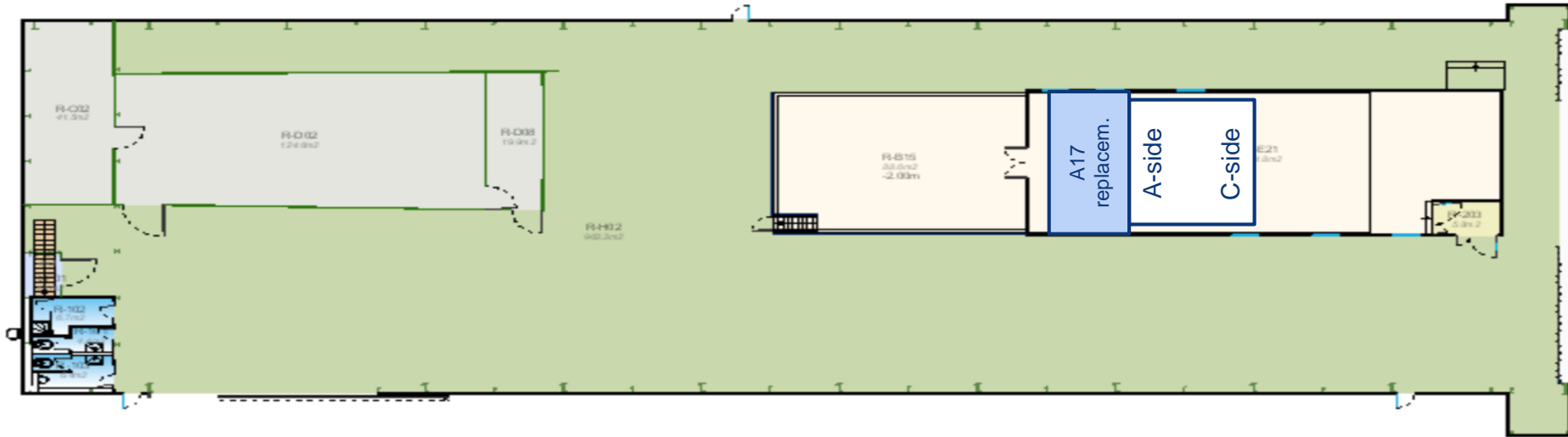


SXL2 activities w7 – Thu 13 Feb 2020



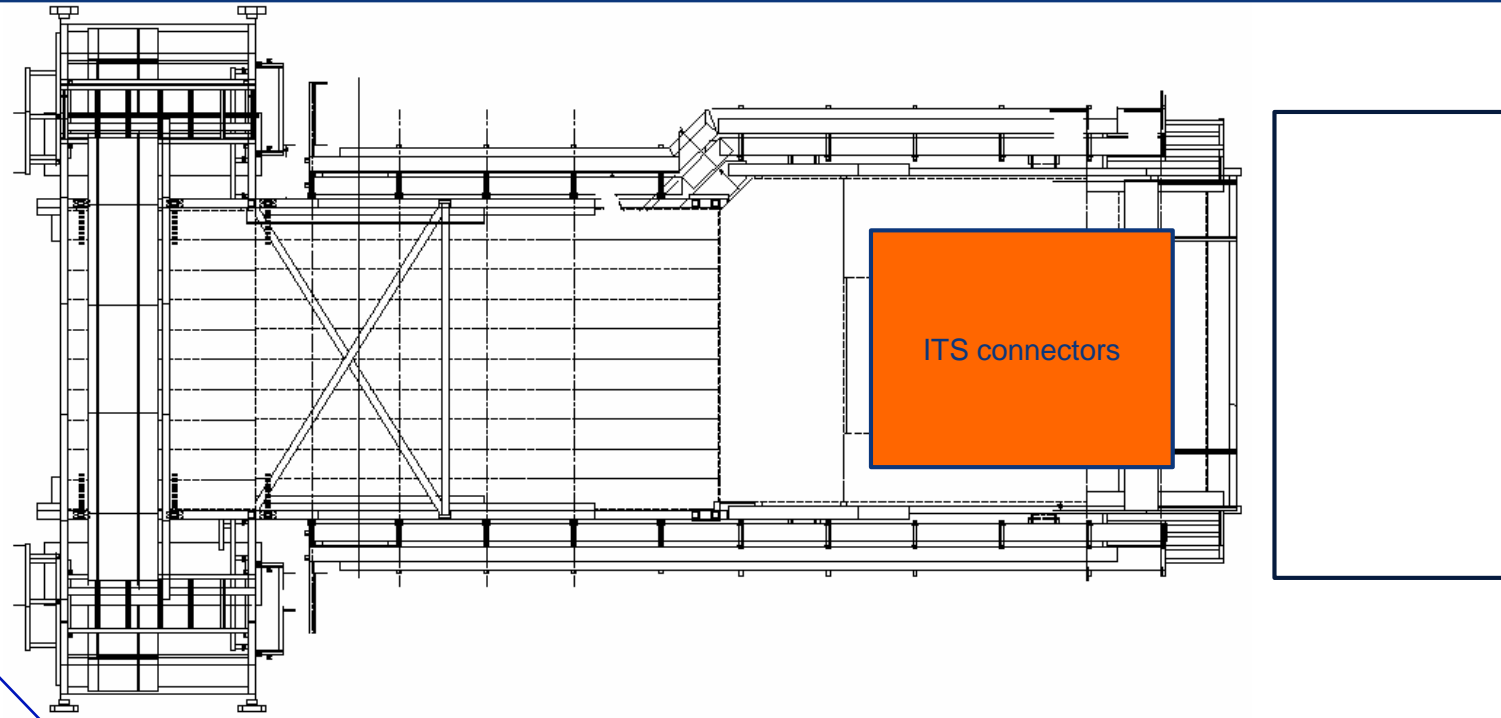
SXL2 activities w7 – Fri 14 Feb 2020

TPC: switch off cleanroom ventilation (PM)



Miniframe activities w7 – Mon 10 Feb 2020

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

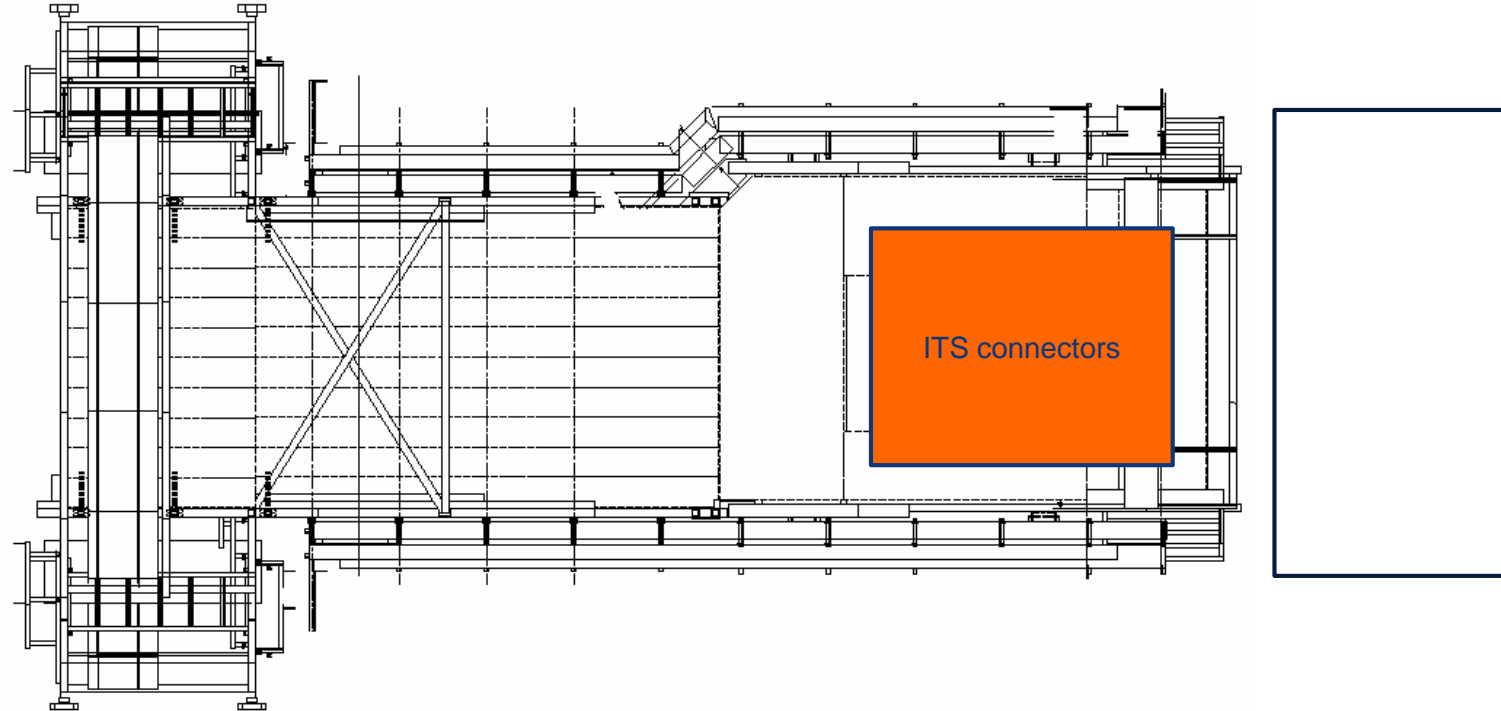


ITS PP1-PP2 mockup cables
(Antoine, Mimmo),
PP1 cooling (Philippe)

Install MFT PP1 PT and filters, cut ITS PP1 cooling pipes and put plate (Philippe)

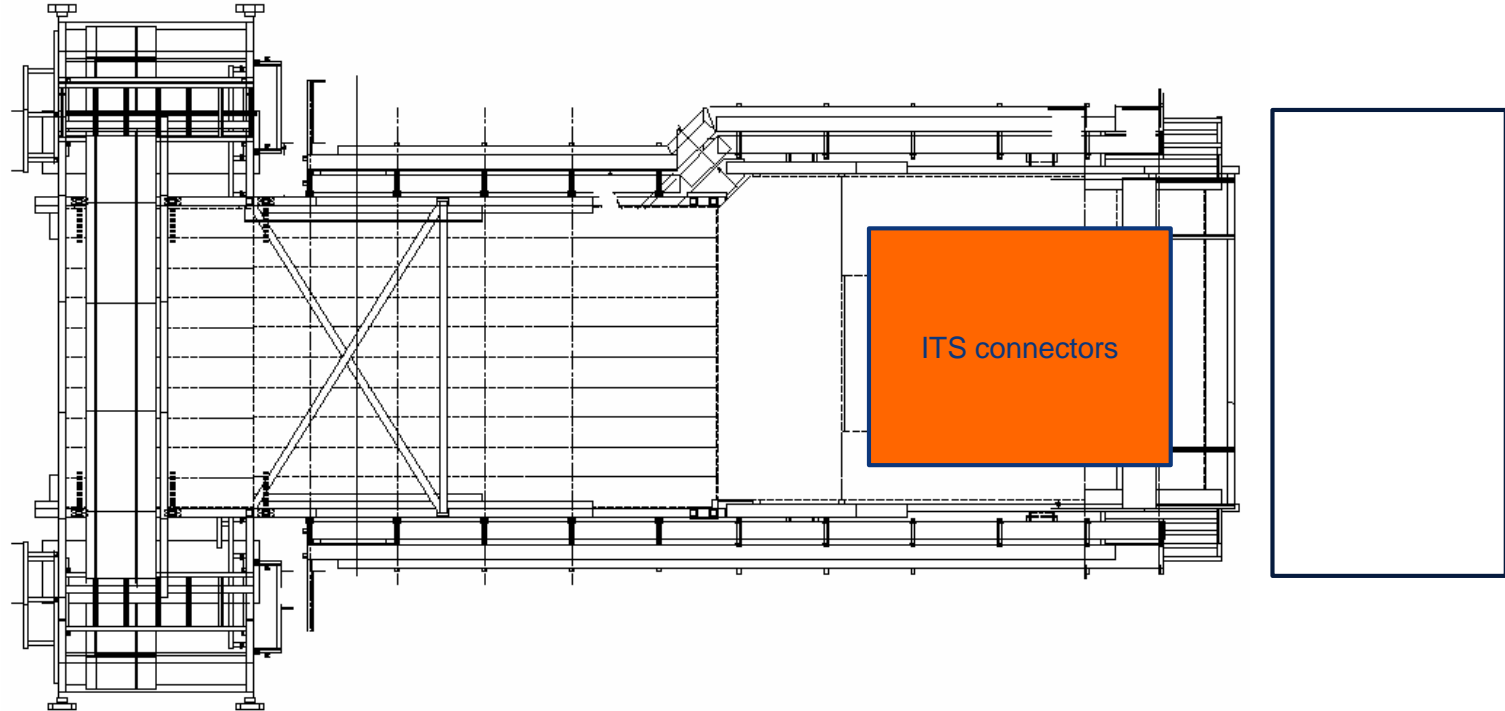
Miniframe activities w7 – Tue 11 Feb 2020

ITS PP1-PP2 mockup cables
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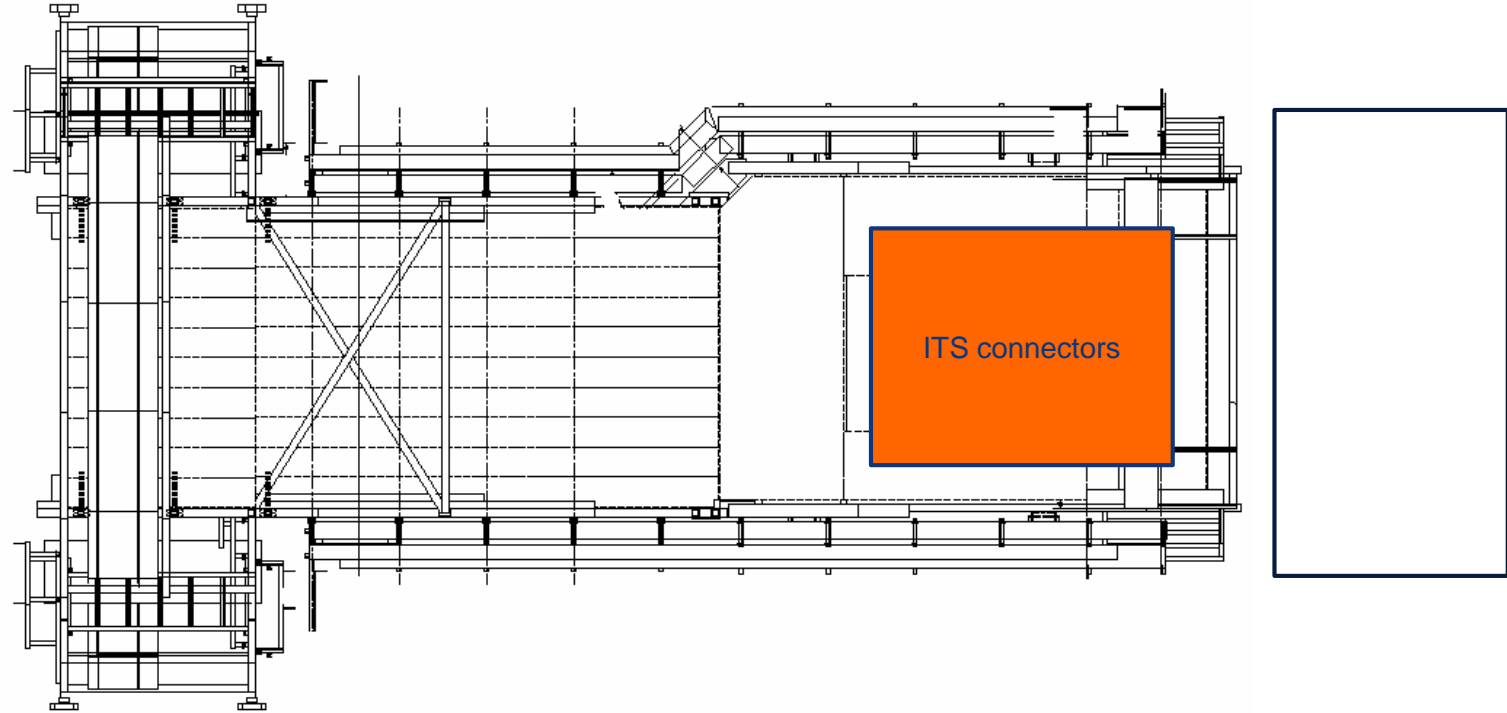
Miniframe activities w7 – Wed 12 Feb 2020

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



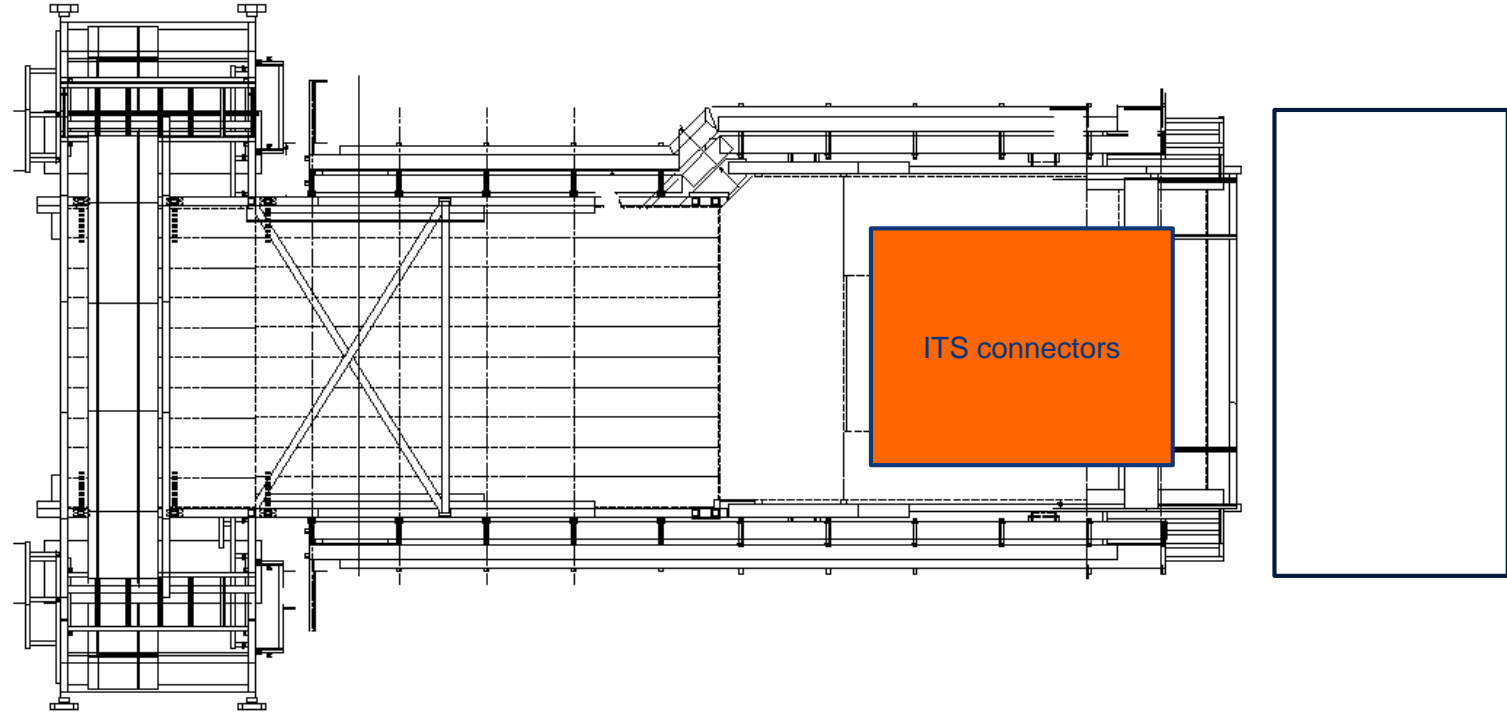
Miniframe activities w7 – Thu 13 Feb 2020

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

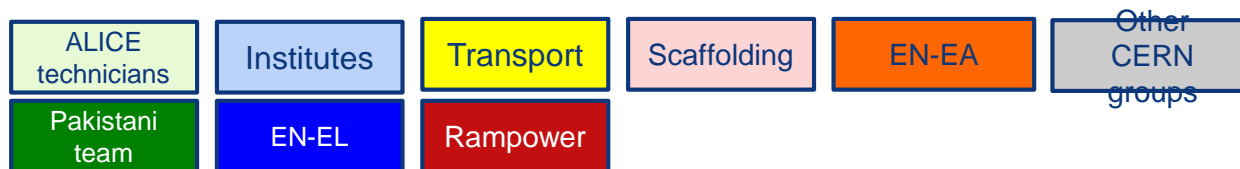


Miniframe activities w7 – Fri 14 Feb 2020

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

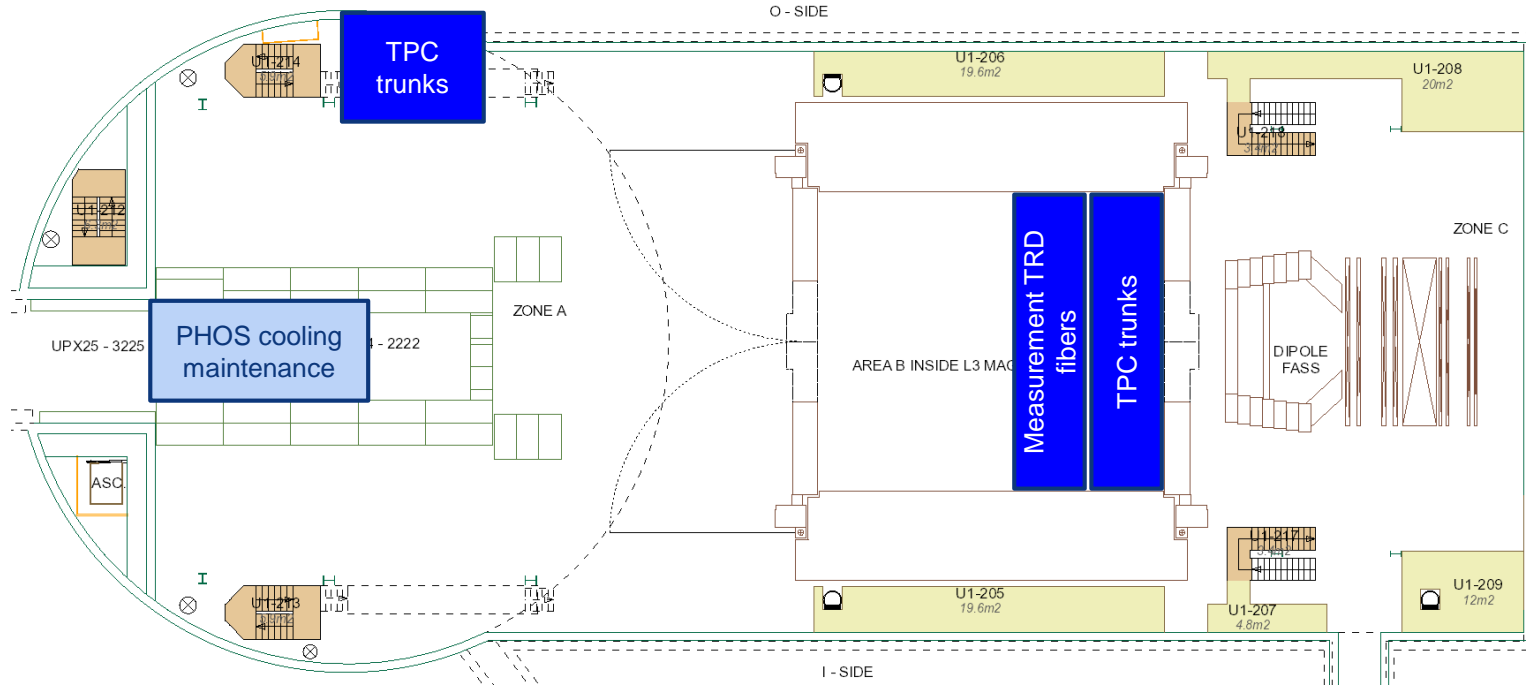


Day-by-day sequence w8



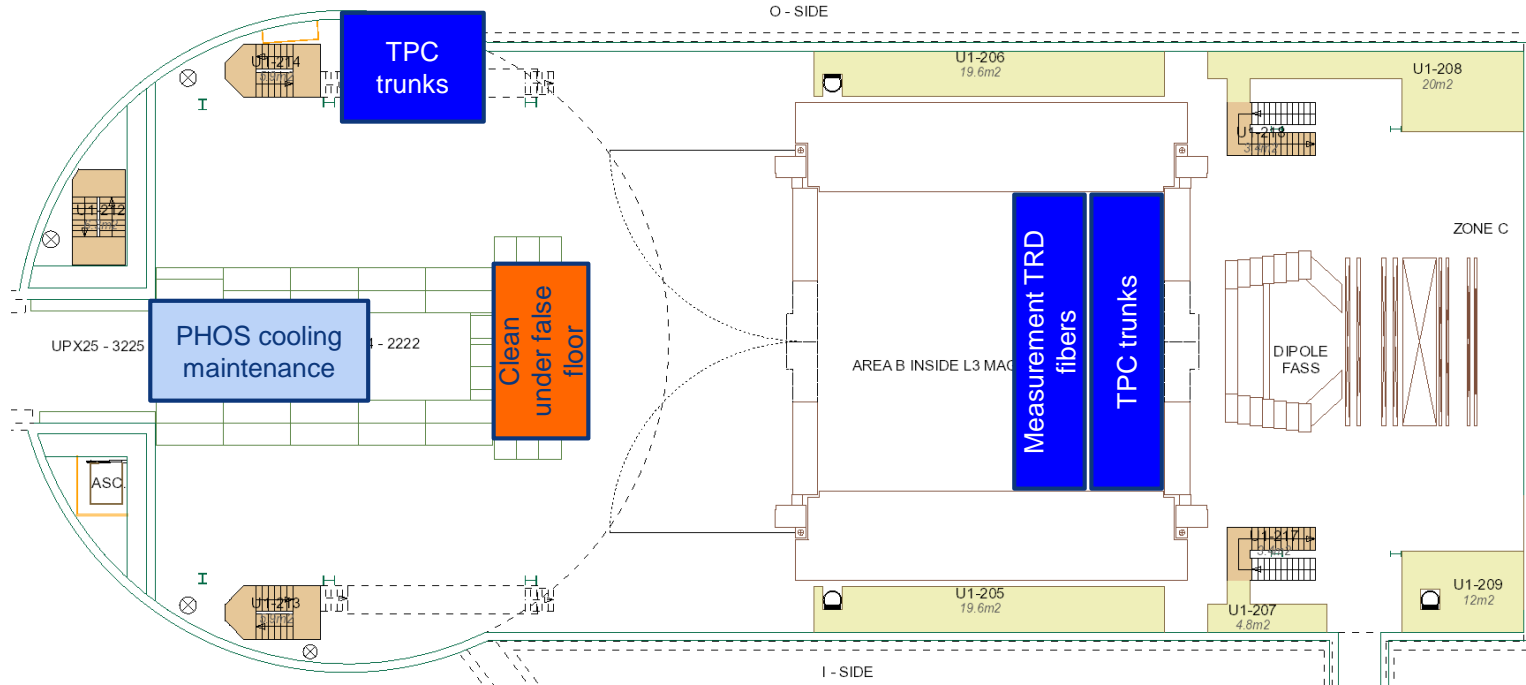
UX25 activities w8 – Mon 17 Feb 2020

Delivery at P2 of 9 wooden boxes (60x70x75, ~45kg each)



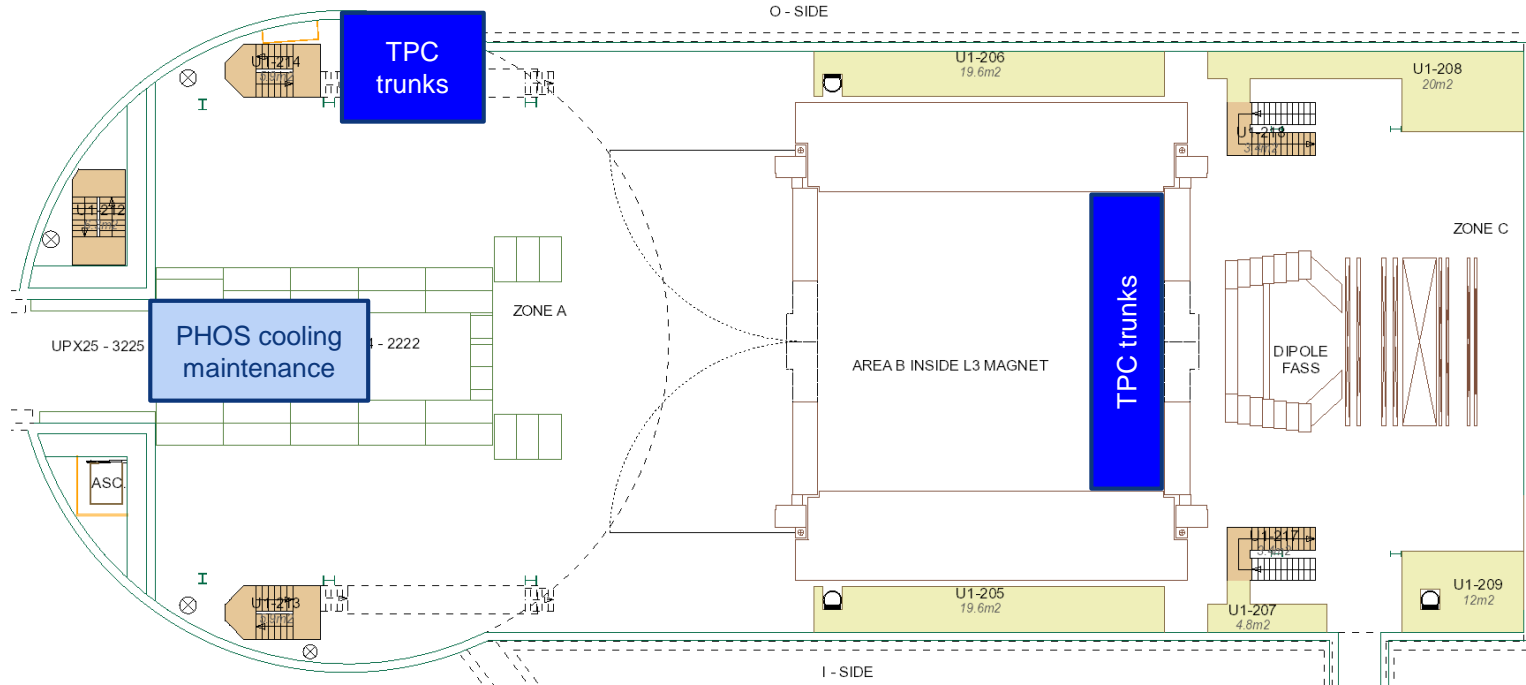
UX25 activities w8 – Tue 18 Feb 2020

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



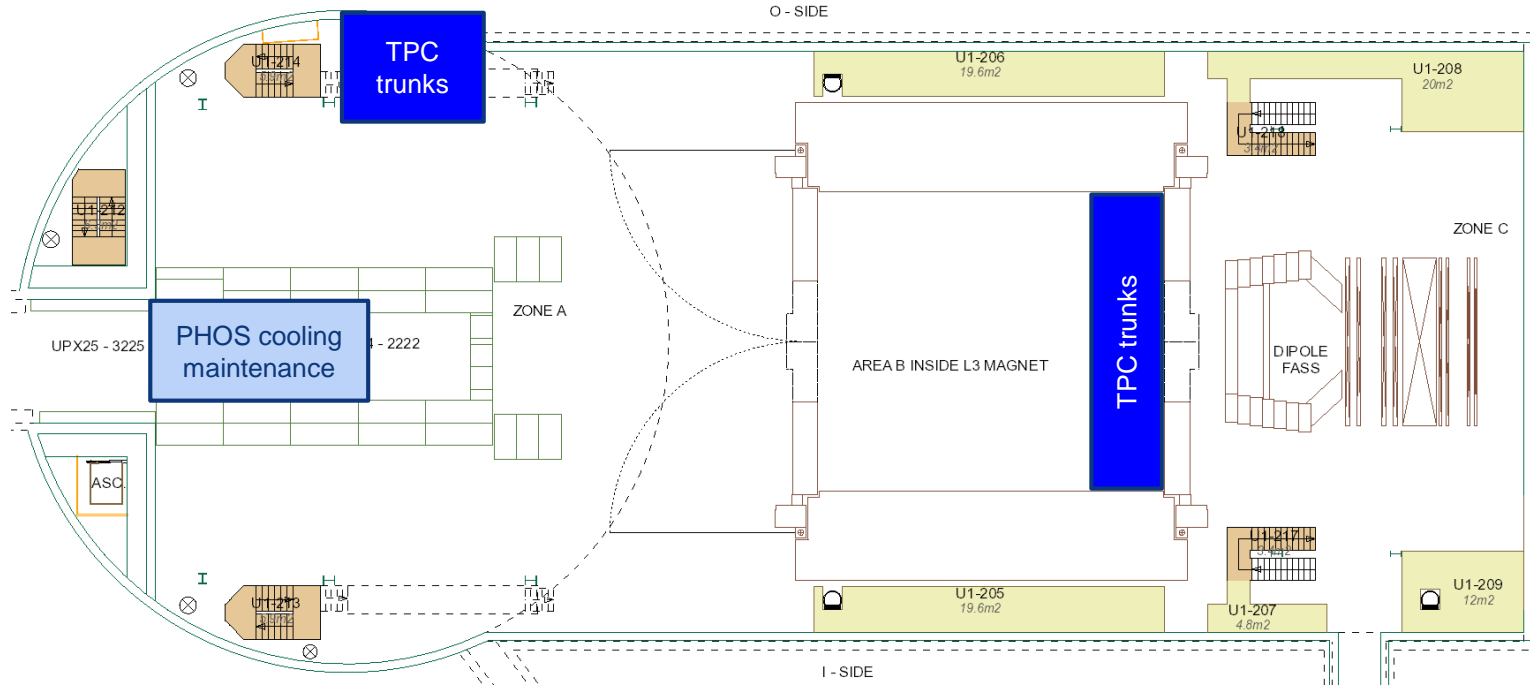
UX25 activities w8 – Wed 19 Feb 2020

Load test FIT transportation box

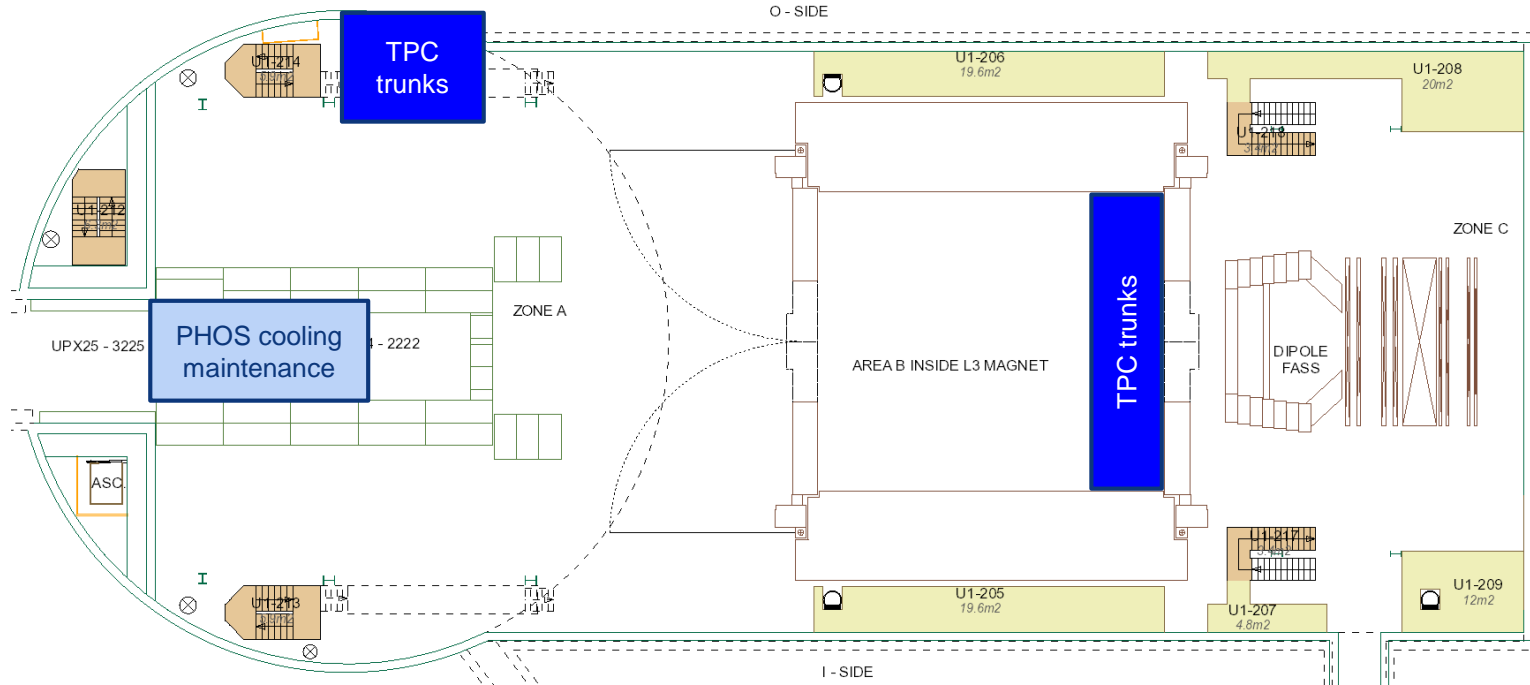


UX25 activities w8 – Thu 20 Feb 2020

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

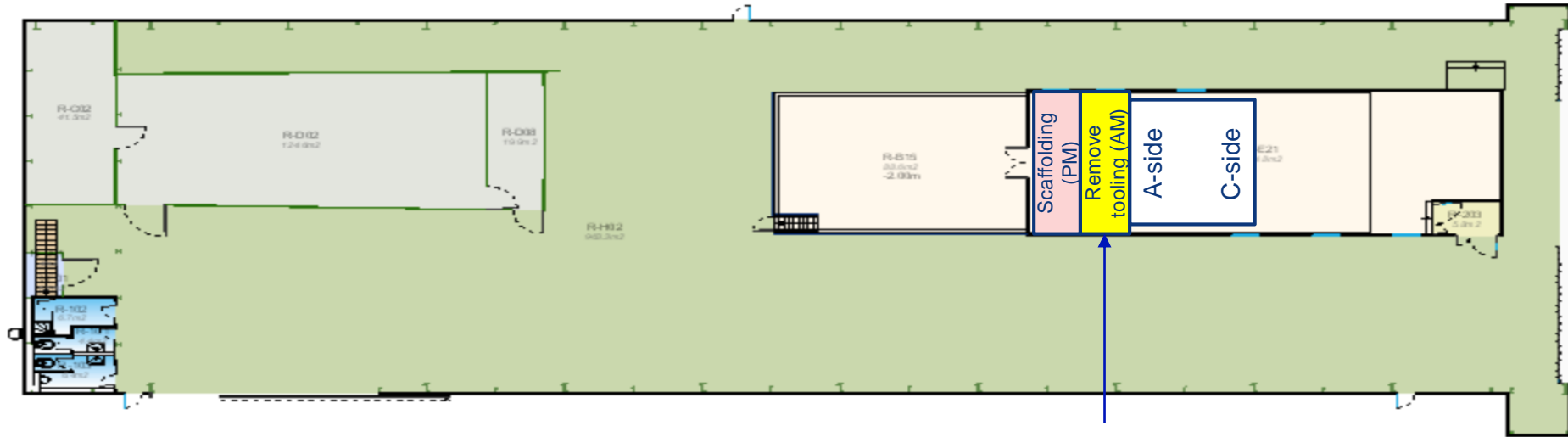


UX25 activities w8 – Fri 21 Feb 2020



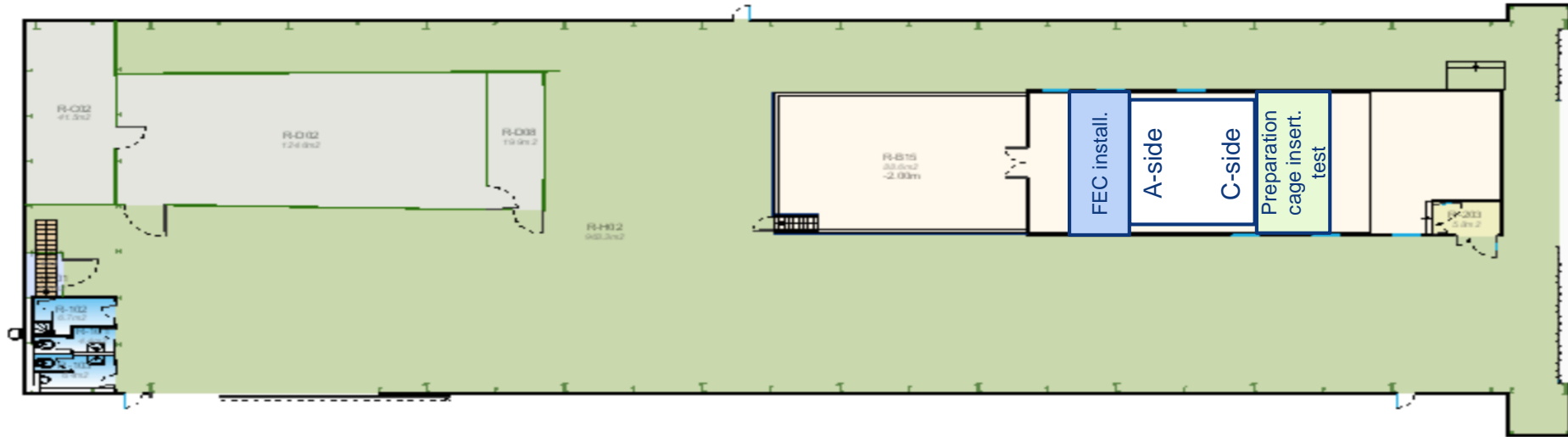
SXL2 activities w8 – Mon 17 Feb 2020

TPC: start replacing gas mixture with Ne-CO₂-N₂



TPC, ALTEAD & P2tech: open roof,
remove tooling, close roof

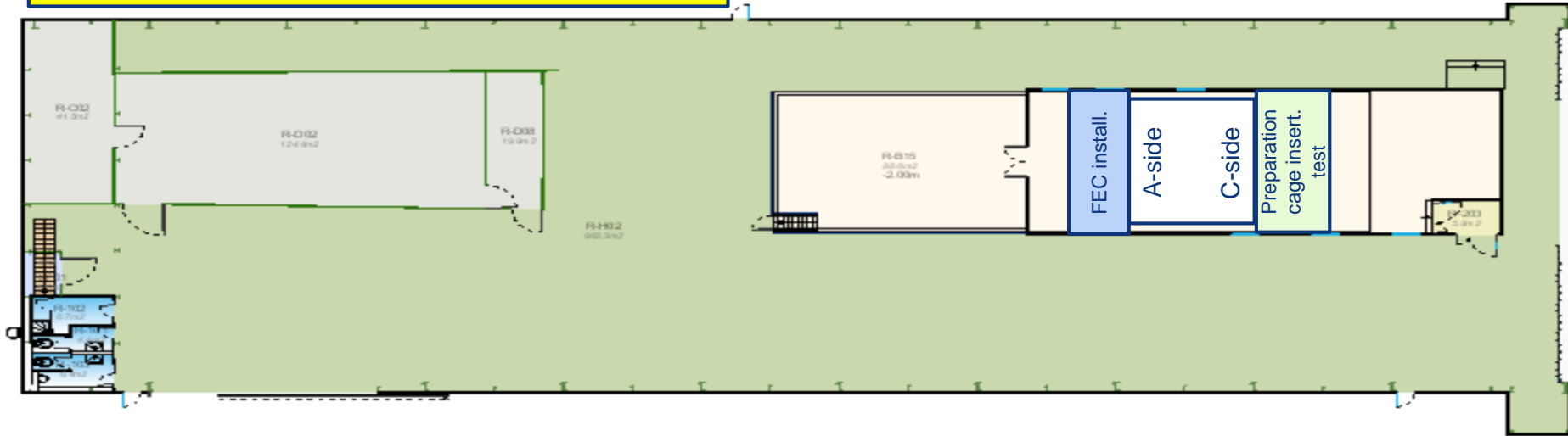
SXL2 activities w8 – Tue 18 Feb 2020



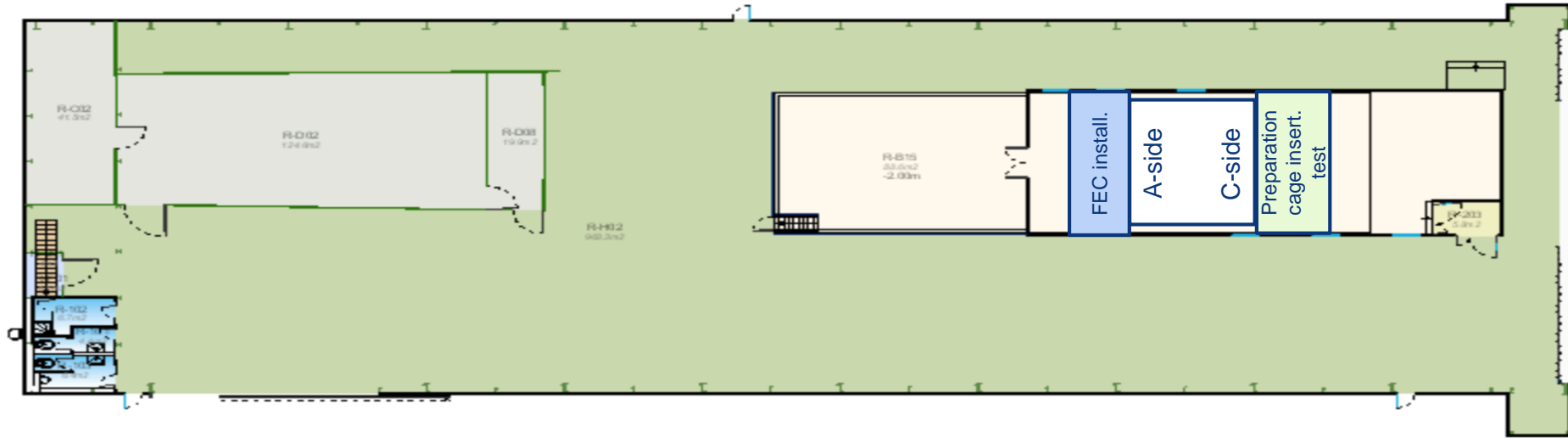
SXL2 activities w8 – Wed 19 Feb 2020

TPC survey from C-side (preparation cage insertion test)

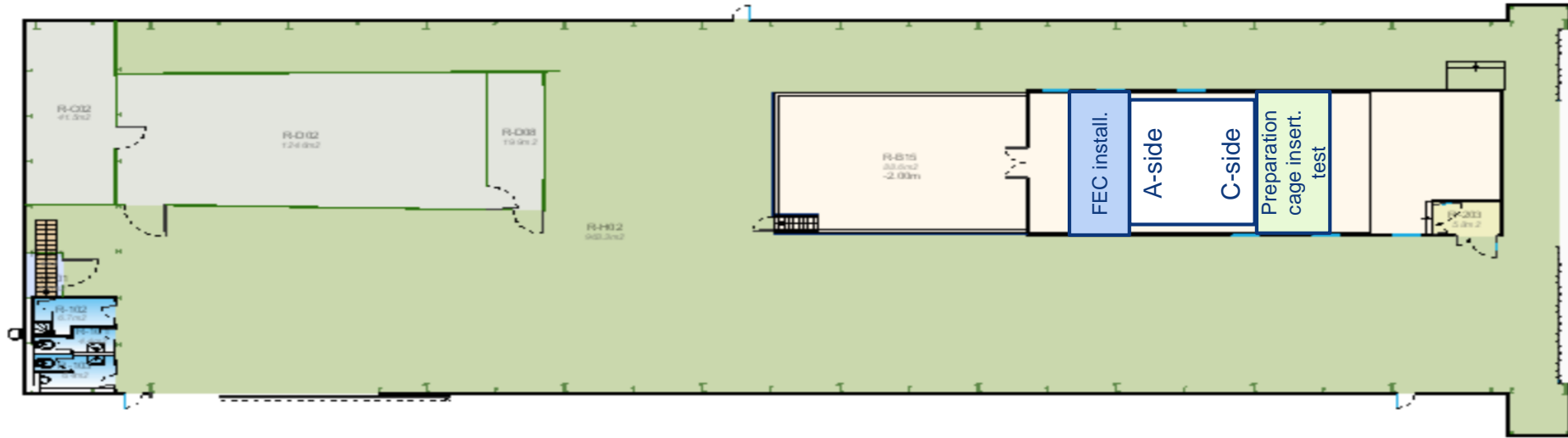
Reinstall shaft DCal rotator and re-assemble it



SXL2 activities w8 – Thu 20 Feb 2020

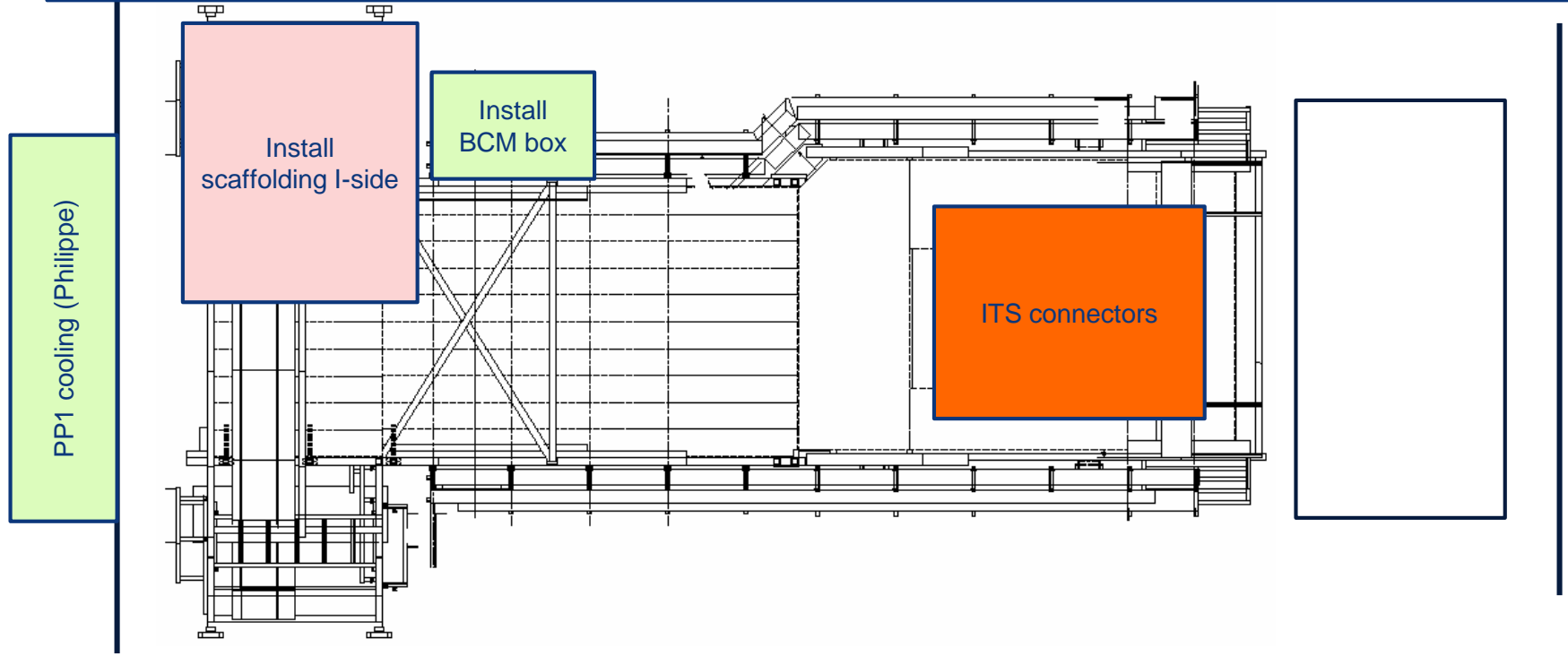


SXL2 activities w8 – Fri 21 Feb 2020

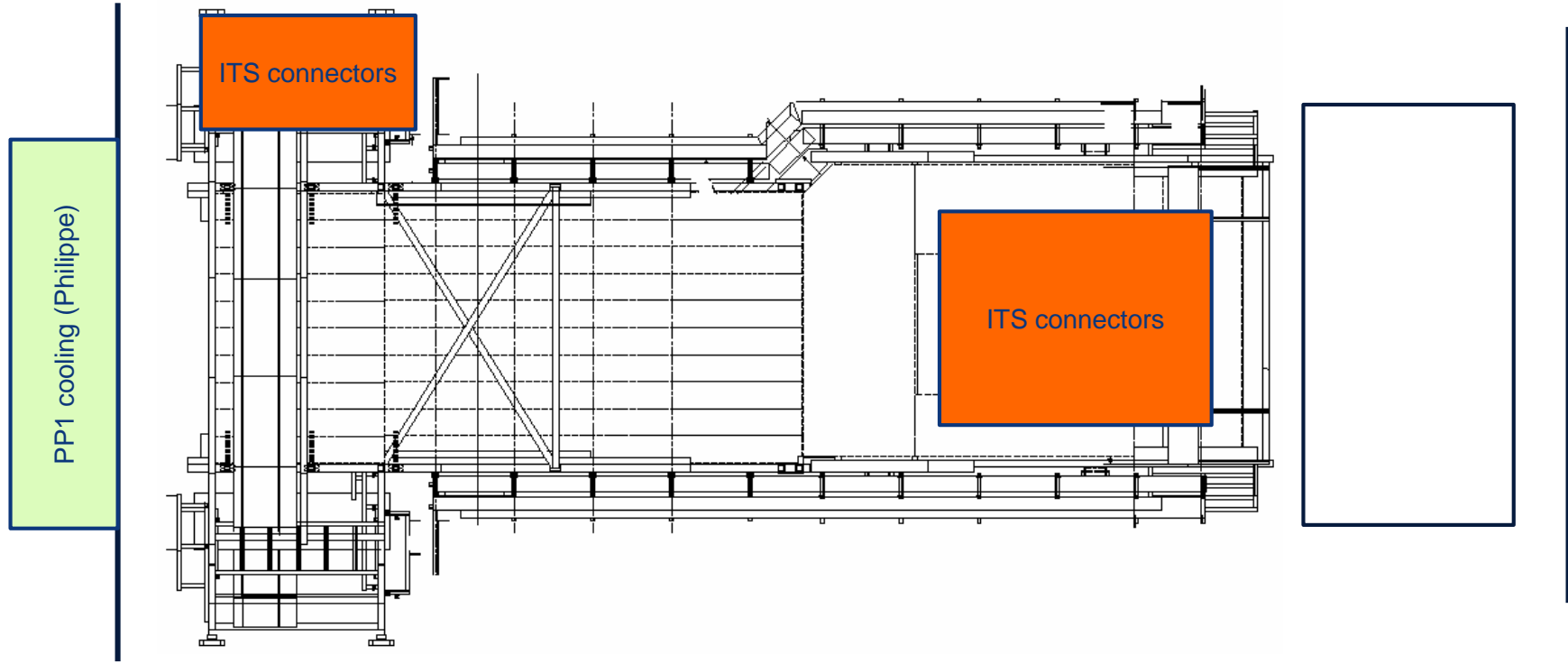


Miniframe activities w8 – Mon 17 Feb 2020

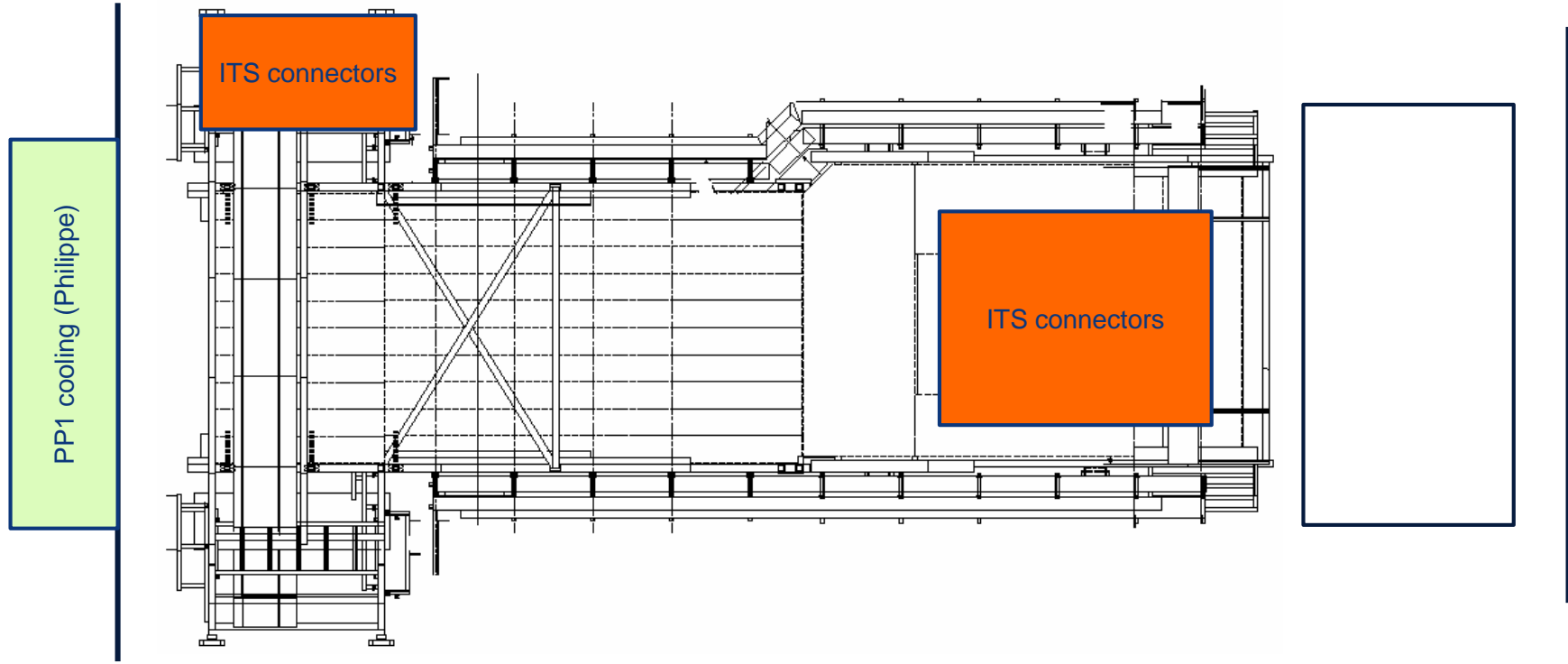
Produce and install steps to protect FO boxes; finish ITS rack supports; build ITS access trap and FIT patch panel (Cedric)



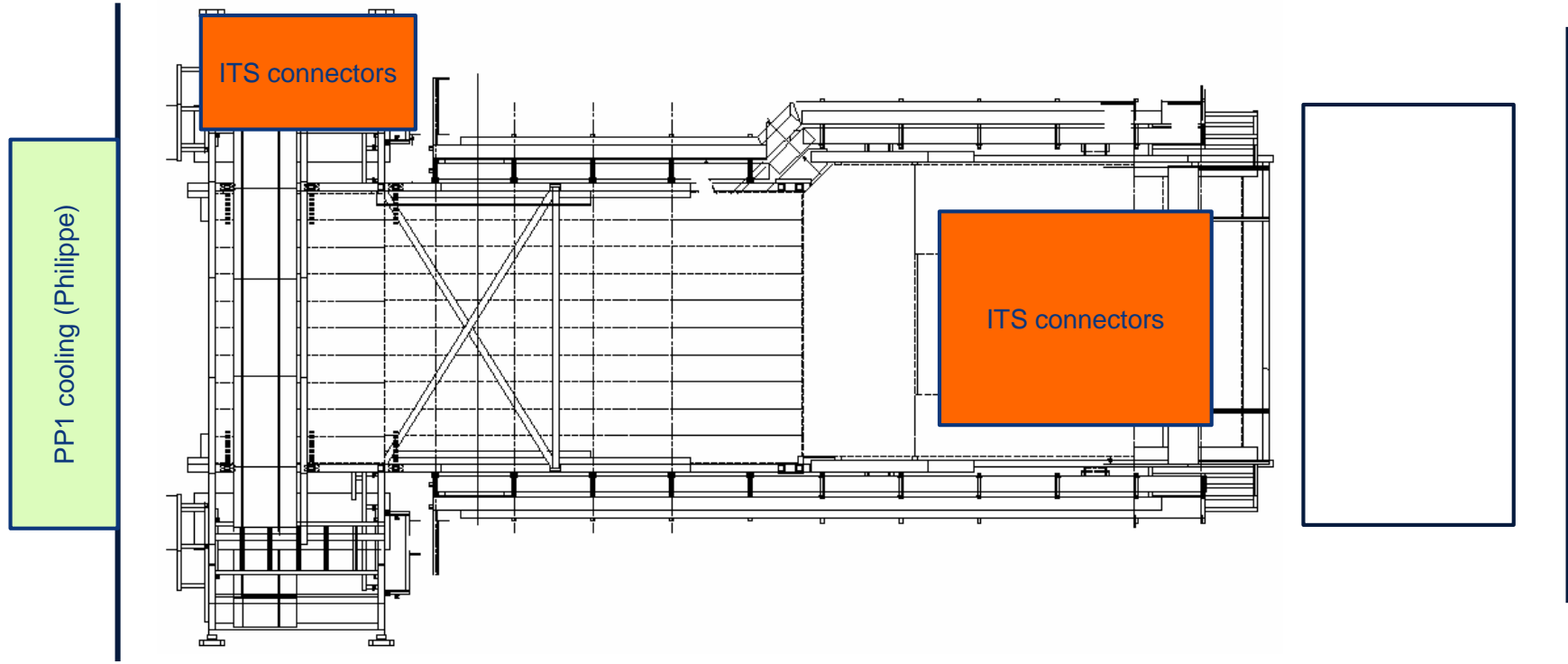
Miniframe activities w8 – Tue 18 Feb 2020



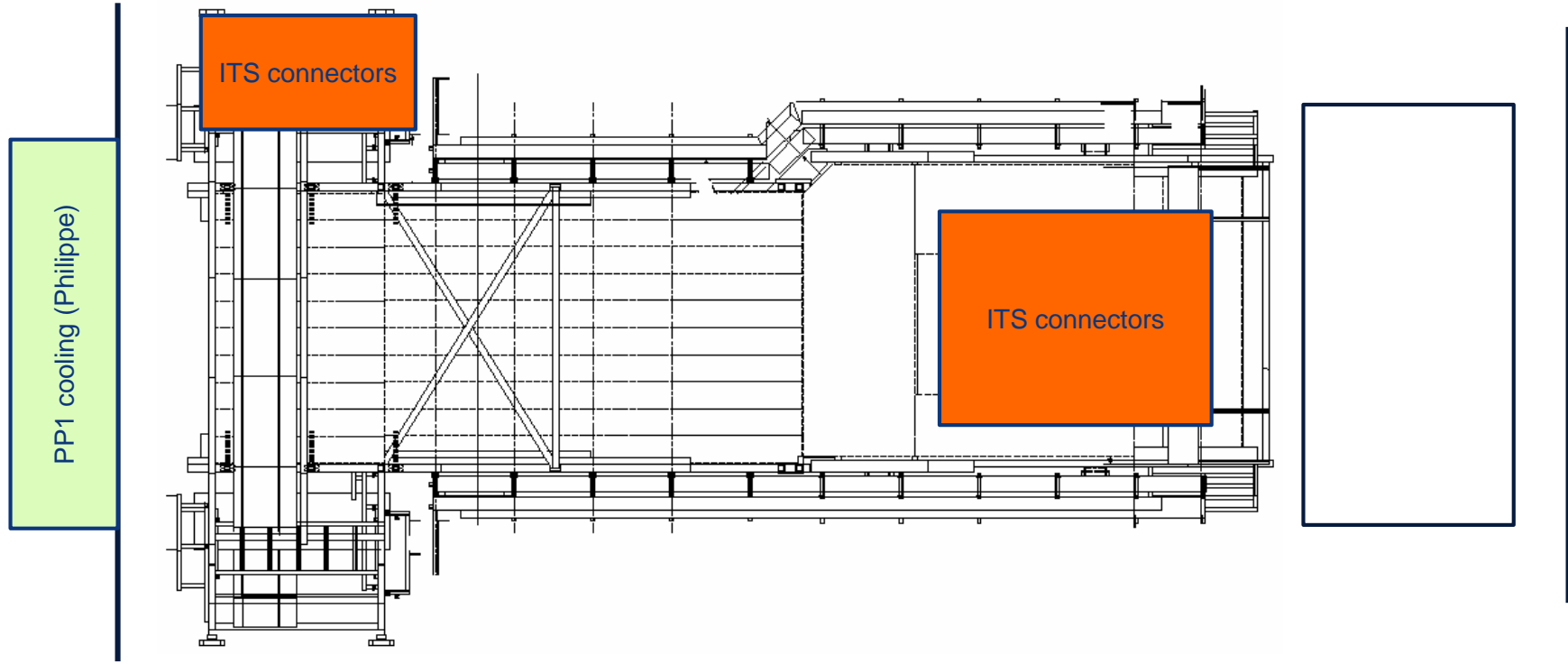
Miniframe activities w8 – Wed 19 Feb 2020



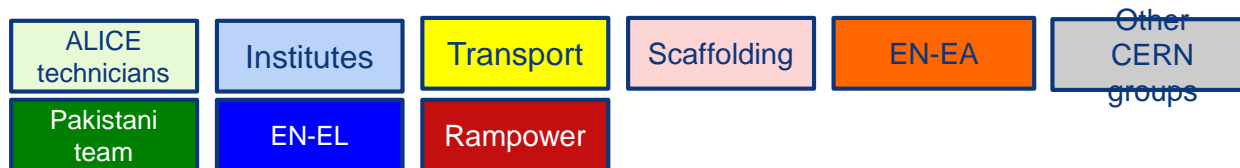
Miniframe activities w8 – Thu 20 Feb 2020



Miniframe activities w8 – Fri 21 Feb 2020

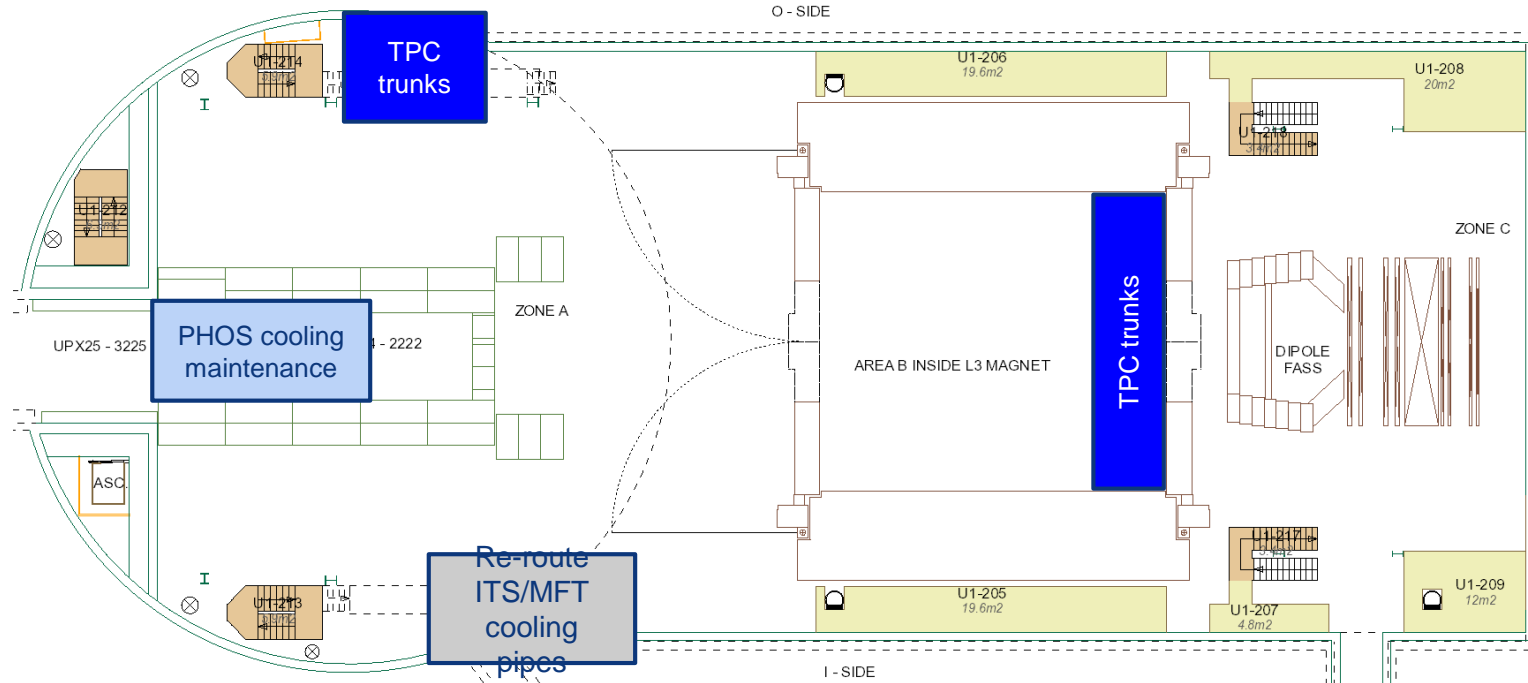


Day-by-day sequence w9



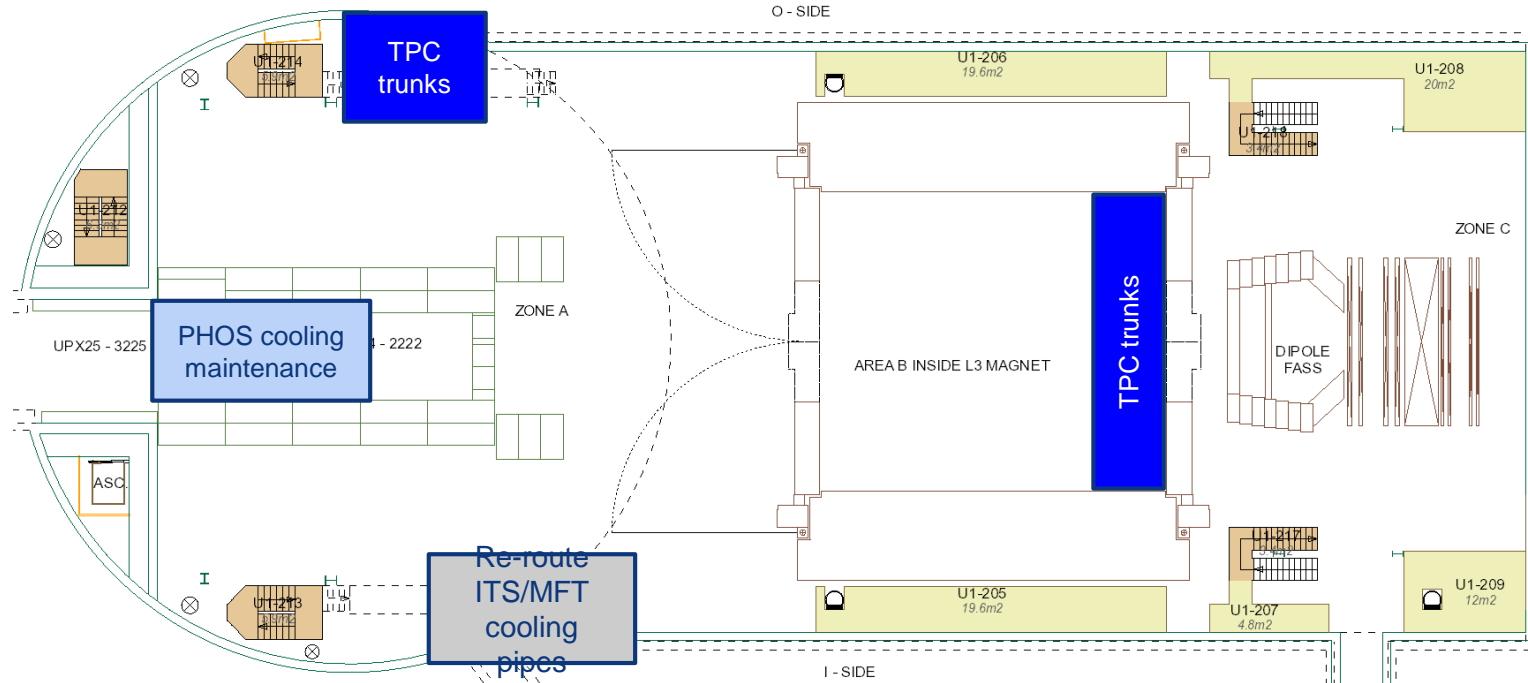
UX25 activities w9 – Mon 24 Feb 2020

MCH: X-ray tests ST1 quadrants in SX2 RP bunker (whole week)

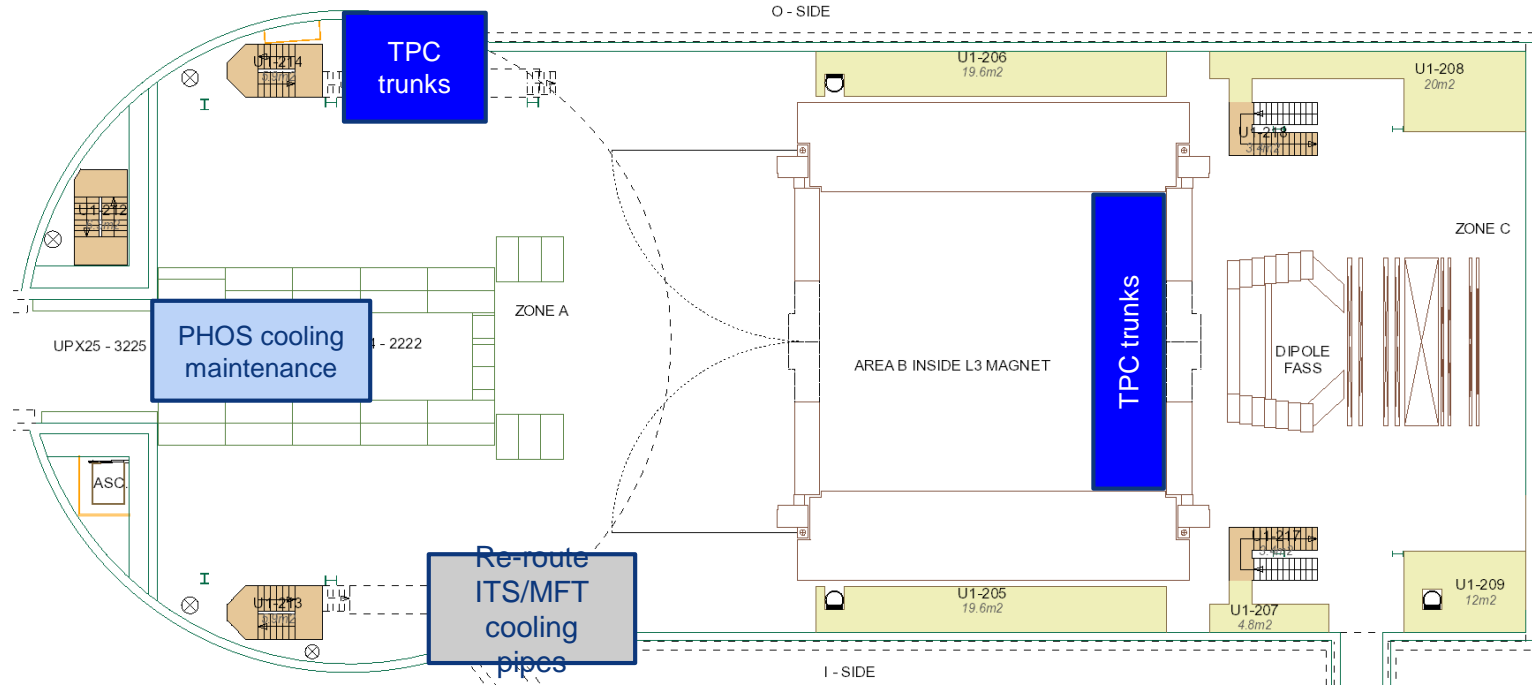


UX25 activities w9 – Tue 25 Feb 2020

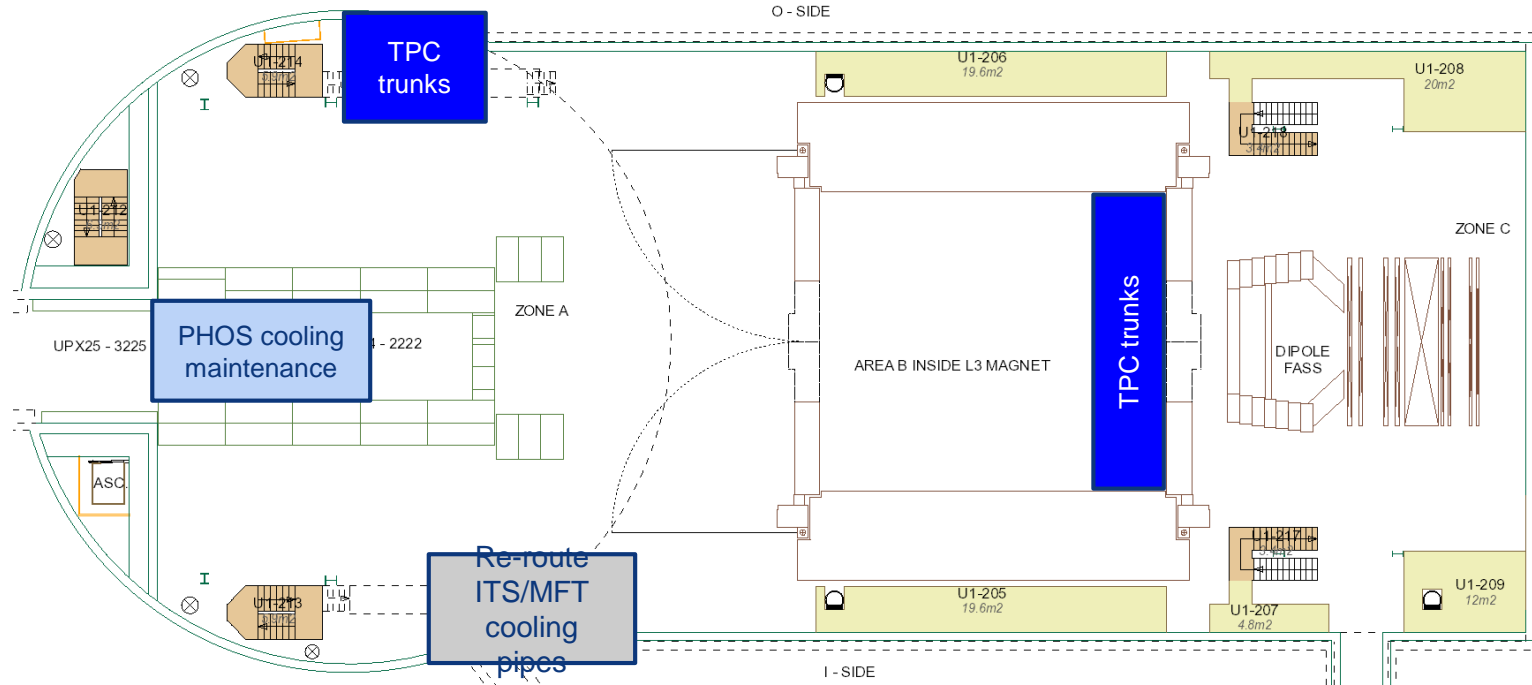
Cleaning cavern (Topnet): 13:00 to 15:00



UX25 activities w9 – Wed 26 Feb 2020

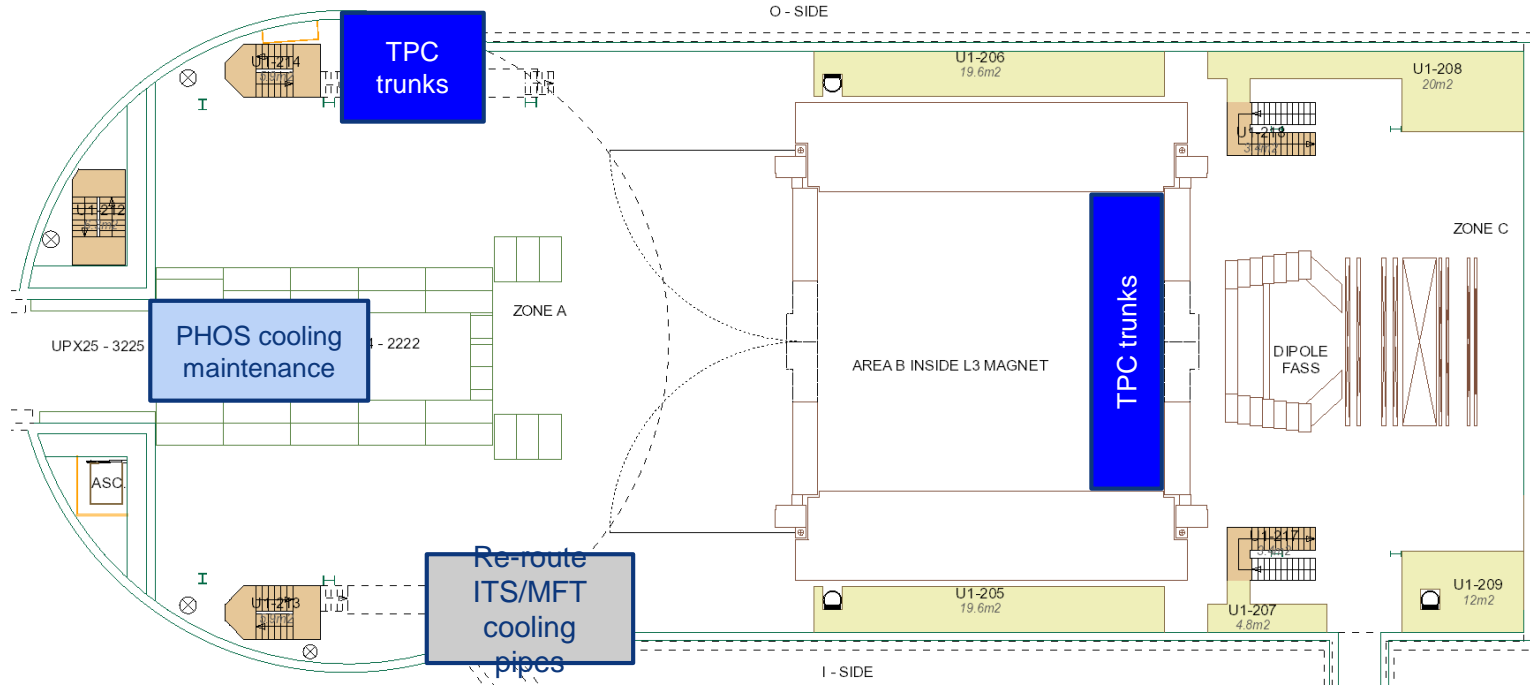


UX25 activities w9 – Thu 27 Feb 2020

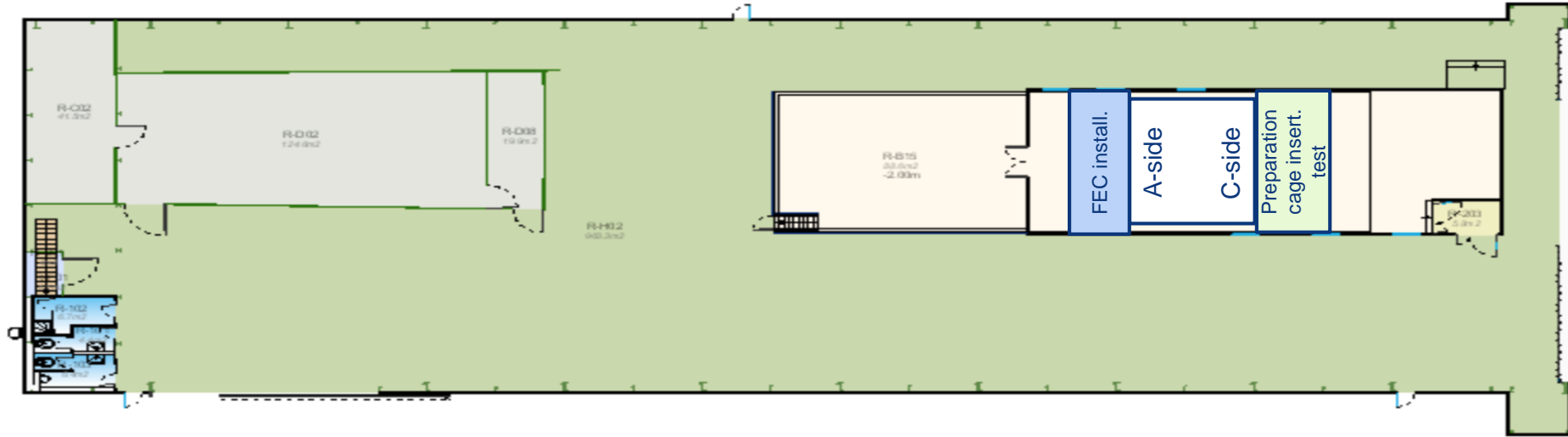


UX25 activities w9 – Fri 28 Feb 2020

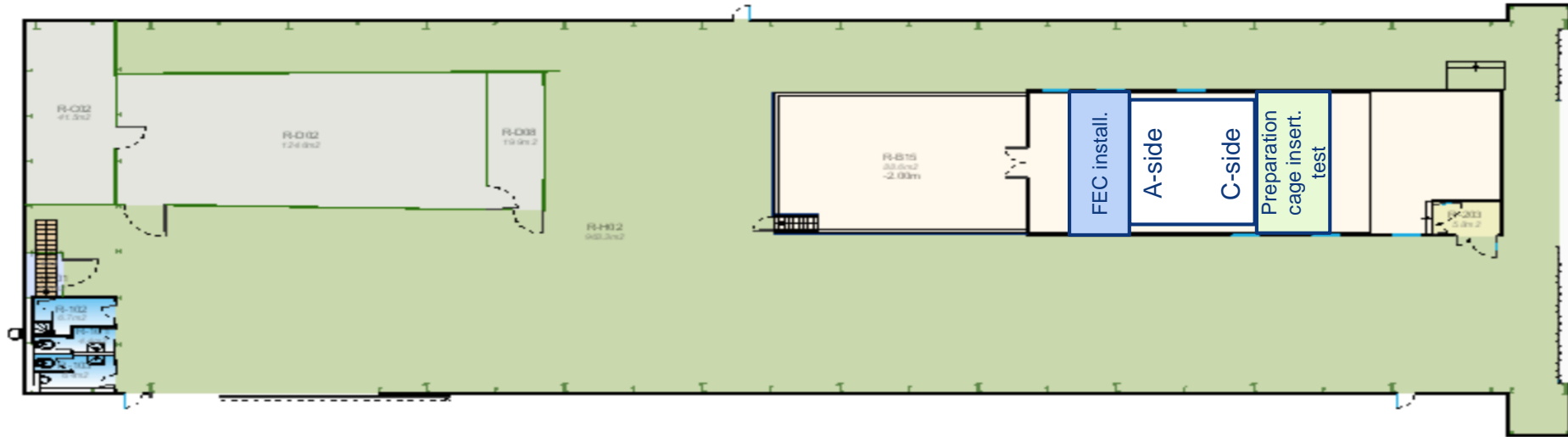
Remove scaffolding laser platform in SX2 (Ouvaroff)



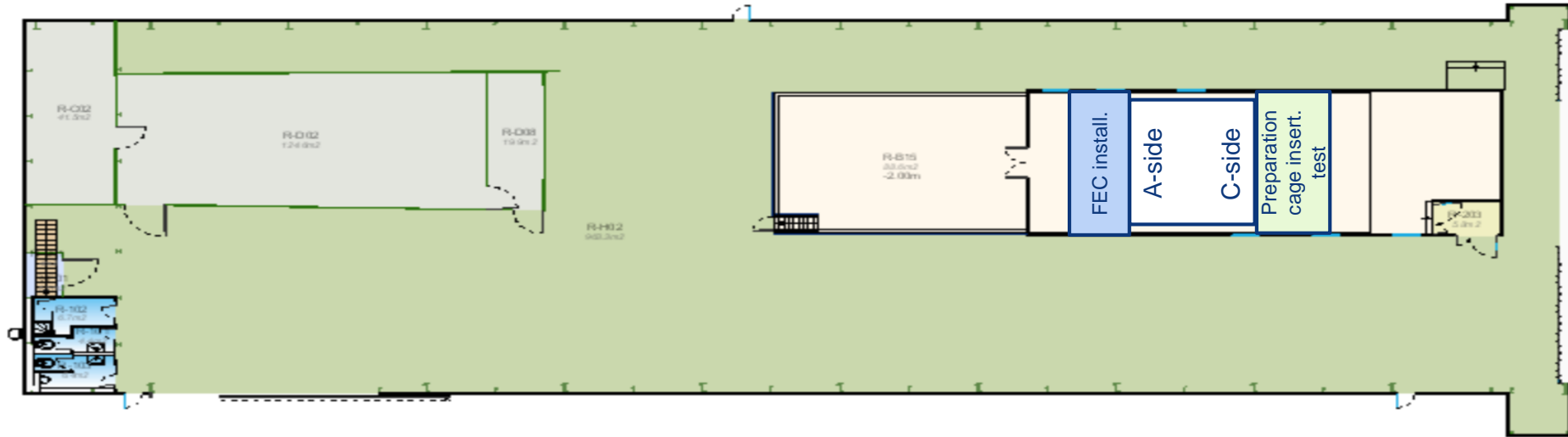
SXL2 activities w9 – Mon 24 Feb 2020



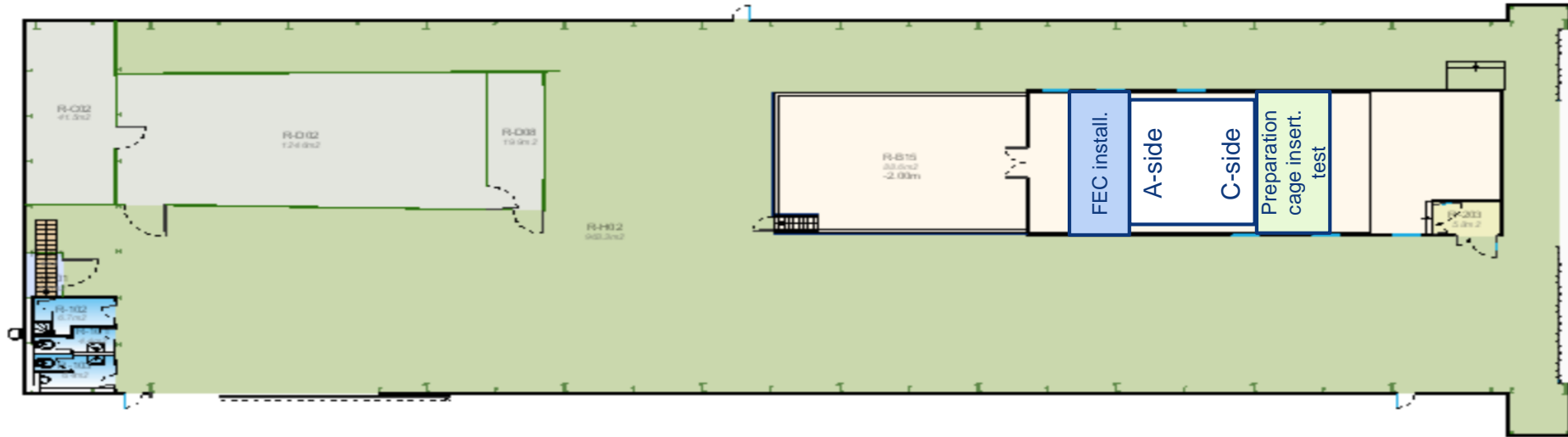
SXL2 activities w9 – Tue 25 Feb 2020



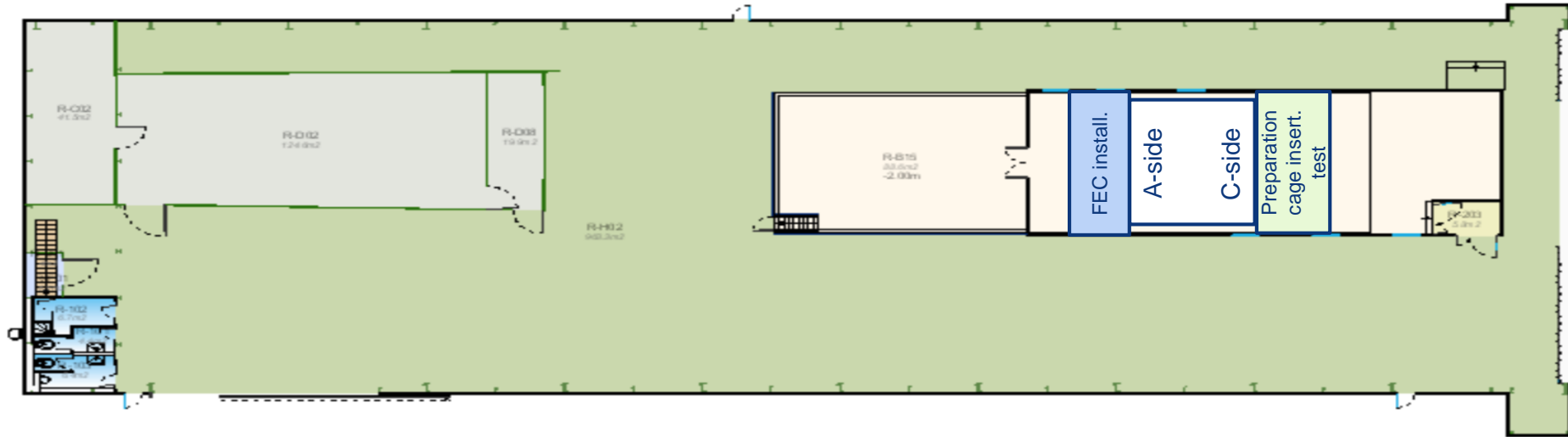
SXL2 activities w9 – Wed 26 Feb 2020



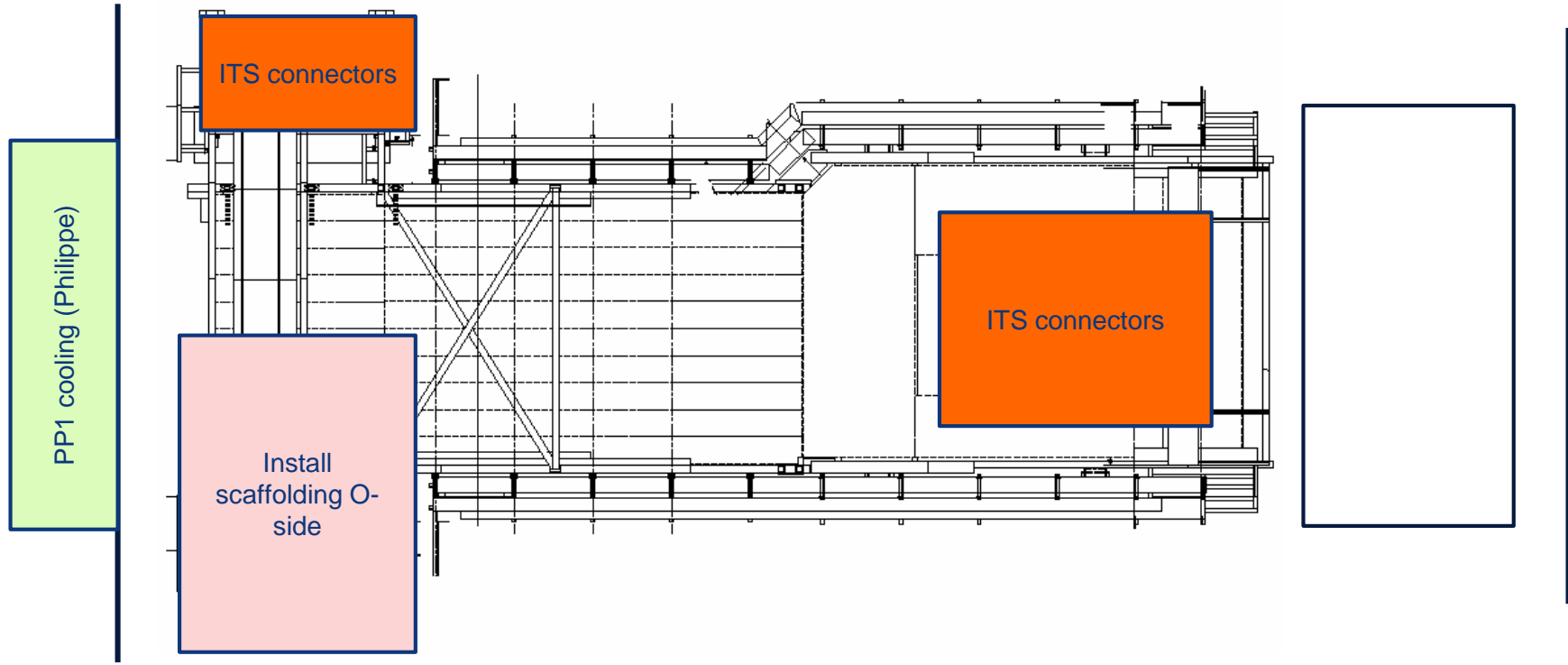
SXL2 activities w9 – Thu 27 Feb 2020



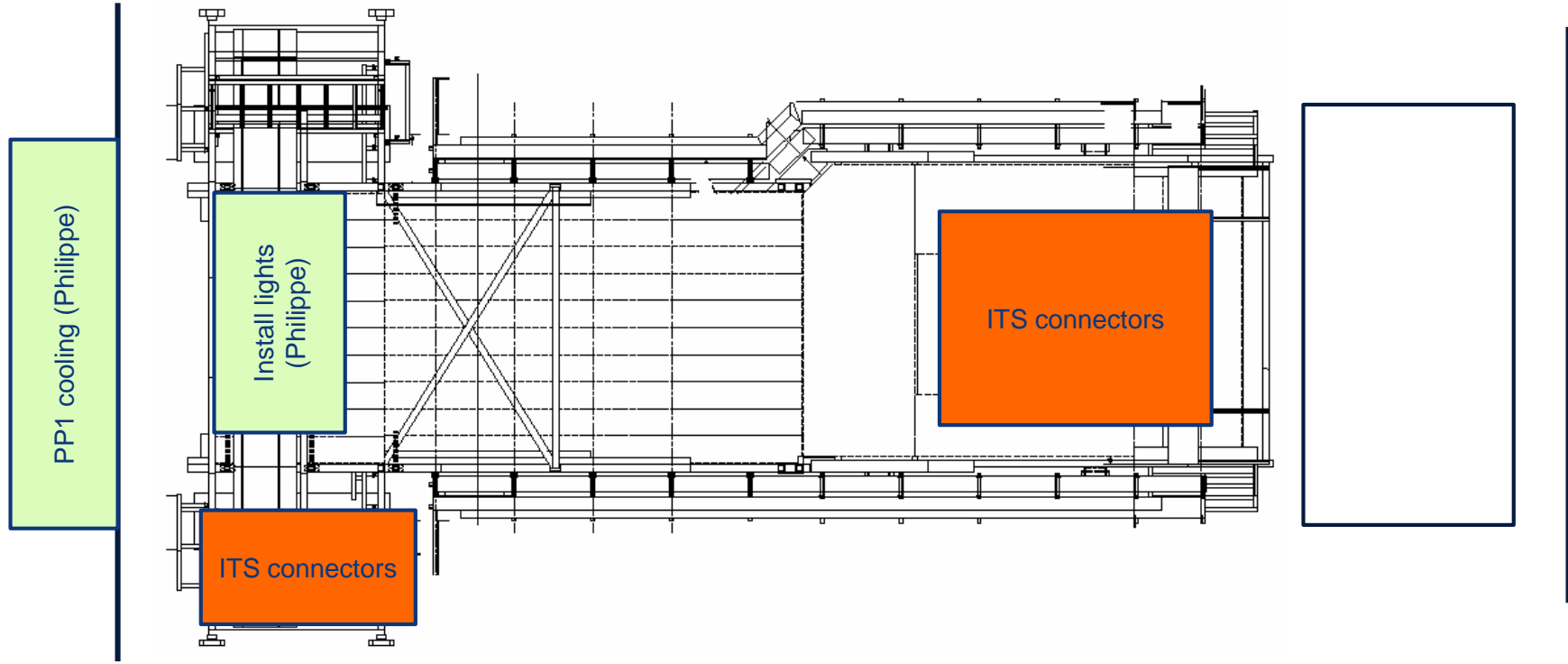
SXL2 activities w9 – Fri 28 Feb 2020



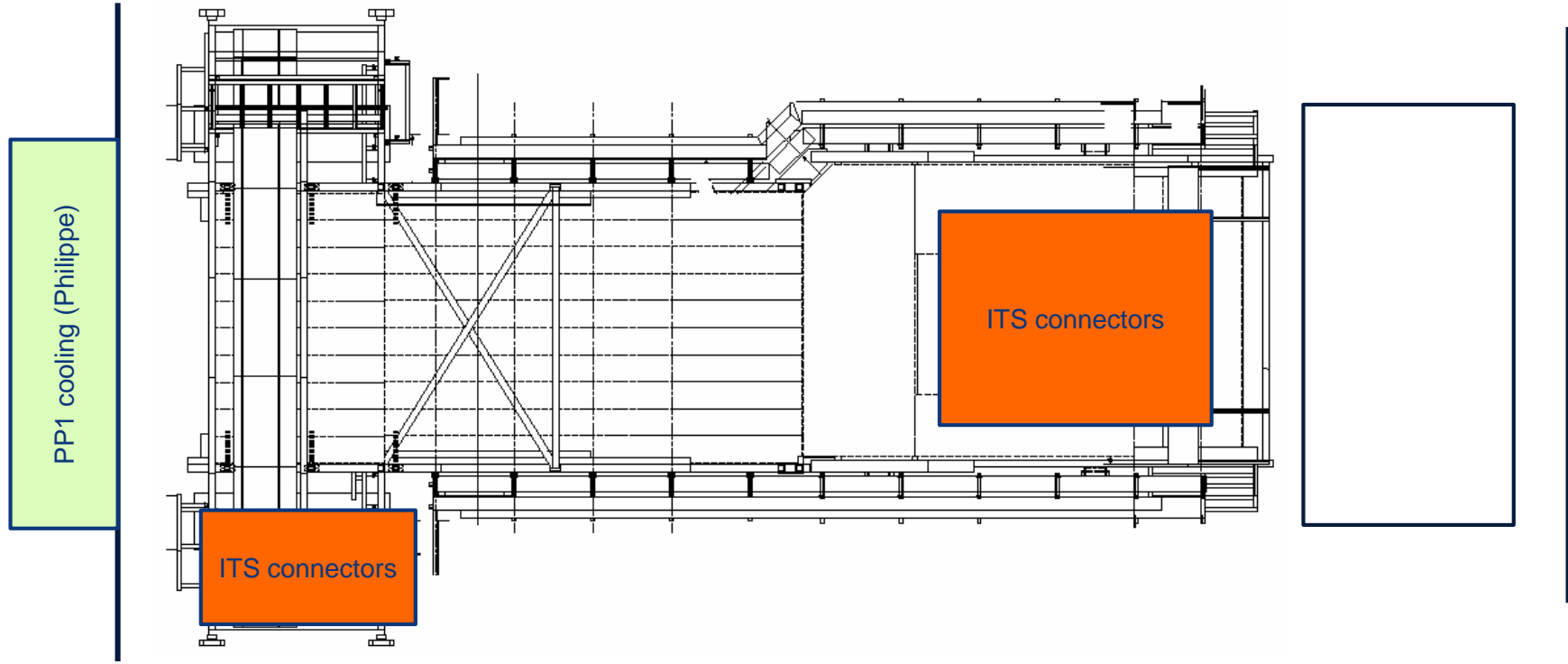
Miniframe activities w9 – Mon 24 Feb 2020



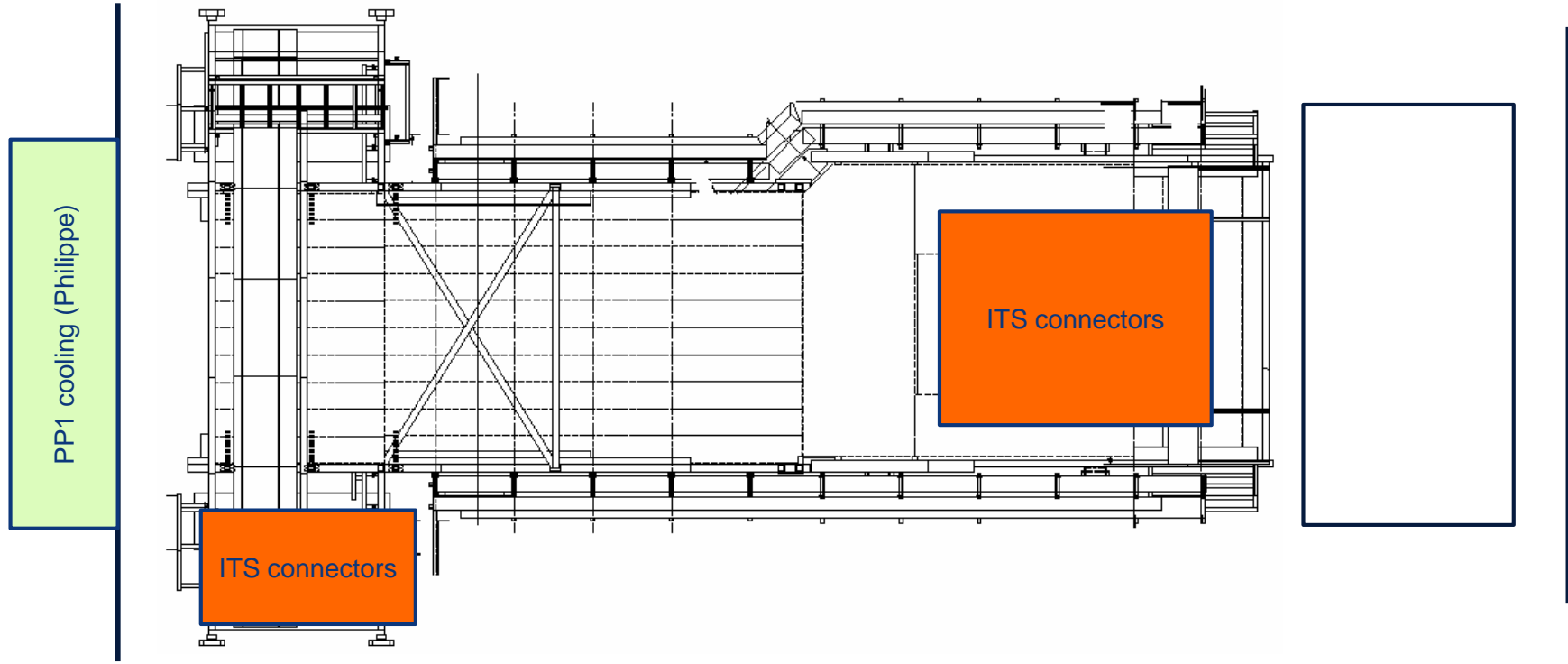
Miniframe activities w9 – Tue 25 Feb 2020



Miniframe activities w9 – Wed 26 Feb 2020



Miniframe activities w9 – Thu 27 Feb 2020



Miniframe activities w9 – Fri 28 Feb 2020

