

# LS2 preparatory meeting

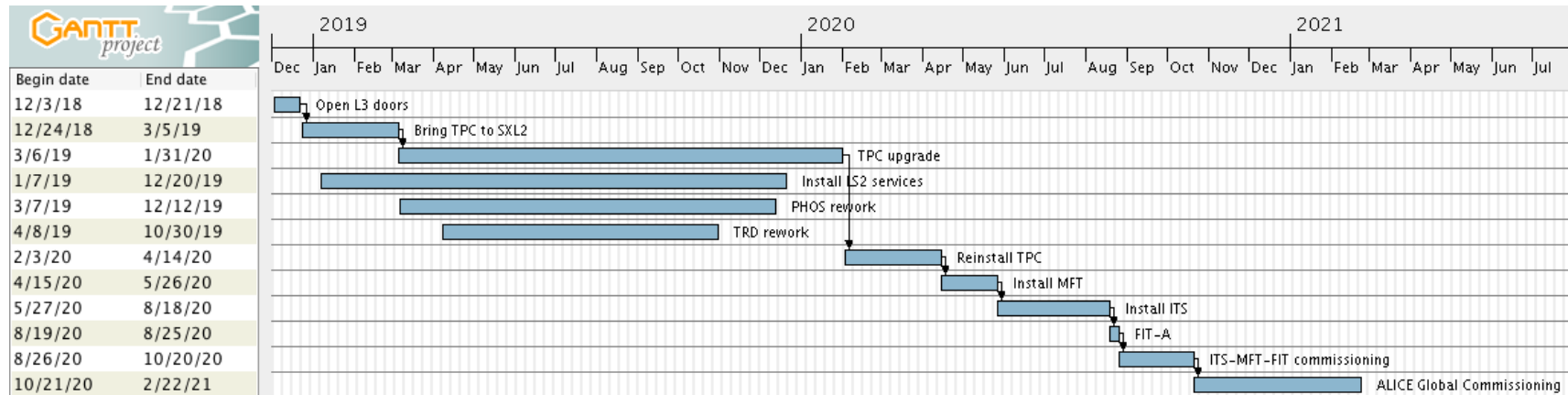
A.Tauro



# General information

- LS2 duration: 27 months
- Access mode: general
- Underground visits: possible from 16 December 2018 (no visits during Xmas closure)
- IMPACT requests: possible to make one request per activity (e.g. TPC disconnection).  
Not possible to make generic request to cover 1 year...
- RP: personal dosimeter needed (no declassification)

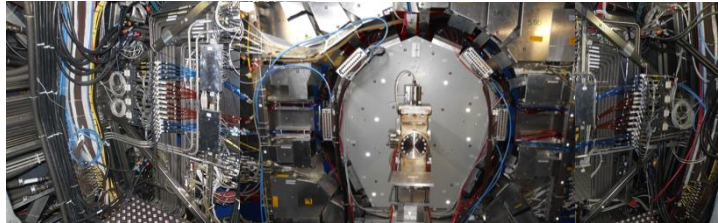
# LS2 master plan



# December timeline



**Remove shieldings**

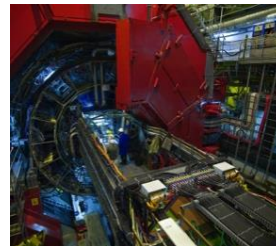


**Disconnect PP0/PP1**

**Remove forward detectors and beampipe**



**Open L3 doors**



**Extract TRD SM6**



**LS2 starts**  
**3 Dec '18**

**10 Dec**

**13 Dec**

**19 Dec**

**21 Dec '18**

# December key dates

- ✓ **ZEM** removal: 3 Dec
- ✓ **BLM** removal: 4 Dec
- ✓ **PMD** removal: 7 Dec
- ✓ **FMD1-V0A** and **T0A** removal: 10 Dec
- ✓ **ADA** removal: 10 Dec
- ✓ **TPC** disconnection: from 3 Dec
- ✓ **ITS** disconnection: from 11 Dec
- ✓ Open **L3 doors**: Friday 14 Dec
- ✓ **TRD6** disconnection: 17-18 Dec
- ✓ **TRD6** extraction: 19 Dec

# LS2 planning meetings

- Daily meetings (from Mondays to Fridays) at 16h30 (P2) – No Vidyo
- Weekly meetings, every Friday at 10:00 (P2) – Vidyo and INDICO

# Underground access in December

- w49:
  - **No access** between 6:00 AM and 10:00 AM (ALTEAD only)
  - **Restricted access** between 10:00 AM and 17:00 PM (Miniframe disconnection)
  - **Normal access** after 17:00 PM
- w50:
  - **No access** between 6:00 AM and 10:00 AM (ALTEAD only)
  - **Normal access** after 10:00 AM
- w51:
  - **Normal access**
- No activities foreseen during Xmas closure

# EN-EL interventions

- Test secours: 19 Dec 2018 6:00 AM to 6:10 AM – no access from 5:00 AM to 8:00 AM
- AUG on Monday 25 March 2019 - no access on site (both surface and underground)
- Diesel maintenance: 1 Apr 2019
- CERN wide 66kV maintenance: 28 May 2019 to 19 July 2019 – reduced consumption (i.e. no magnets)
- 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)
  - Thu 23 to Fri 24 Jan 2020: 2 days “Limited access” → details being worked out
- AUG on Monday 27 January 2020 - no access on site (both surface and underground)
- Auto transfer test: 11 Apr 2020
- BIW test: 5 and 6 Oct 2020 from 18:00 to 00:00 – no access underground



# 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 40/2019 (October).
  - 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**.
- **Ventilation:**
  - Maintenance SXL2 cleanroom before April 2019. Procedure to be established (CV).
  - SG2: w7/2019
  - Gas extraction: w8/2019
  - UX25 cavern: May 2020 (tbc)
  - MCH and MTG: Apr 2020 (tbc)
  - L3: Apr 2020 (tbc)
  - ITS: Apr 2020 (tbc)
- **Raw water:**
  - Test after Apr 2019. Short interruption (1 day), can be used tap water during the test.

# Gas systems status

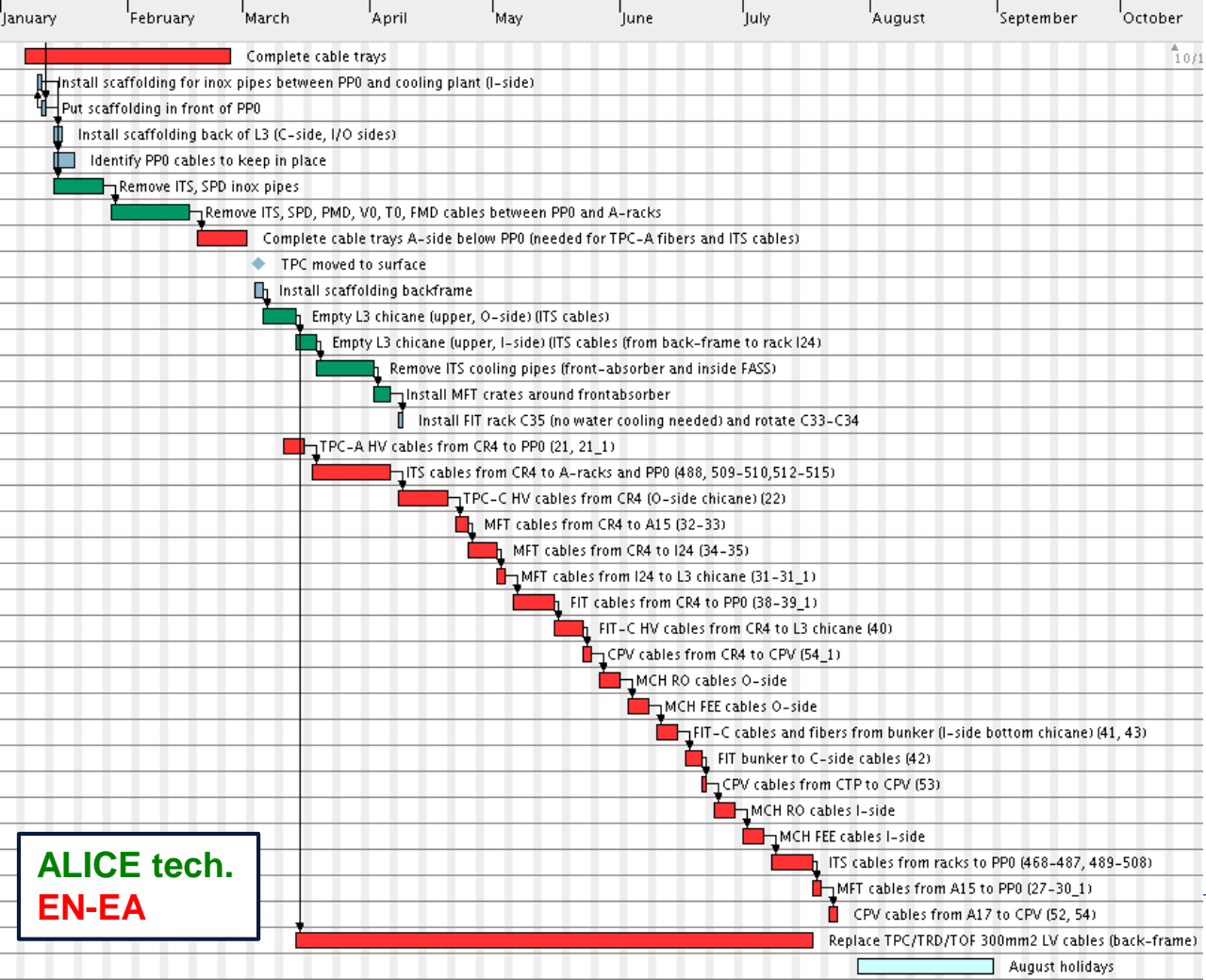
	Xmas status	LS2 status
TPC	TPC disconnected	Detailed plan exists
TRD	Xe recuperation early Jan-19	Run CO2 till Oct-19, and with Xe from Nov-19
TOF	Back-up with R134a	Back-up with R134a until late 2020. Need a few weeks with system ON in late 2019 or 2020 (tbc)
HMP	Always under Ar backup; stop CH4 3-Dec-18	Always under Ar backup
PHO	Keep N2 until 14-Dec-18, then OFF	OFF till Oct-19, then need N2
CPV	OFF	OFF till Oct-19, then need gas (Ar/CO2 80/20) Need humidifier in RUN3
PMD	OFF	Dismounting
MCH	OFF	OFF till May-19, then need gas (Ar/CO2 80/20)
MTR	OFF; stop i-buthane 3-Dec-18	missing info

# Safety systems maintenance

- Fire detection: w2-3/2019
- Gas detection: w7/2019 (in parallel to SG2 ventilation maintenance)
- Red emergency phones: 20/2/2019
- Fire detection (racks): w10/2019

# CERN Open Days

- 14 and 15 September 2019



ALICE tech.  
EN-EA

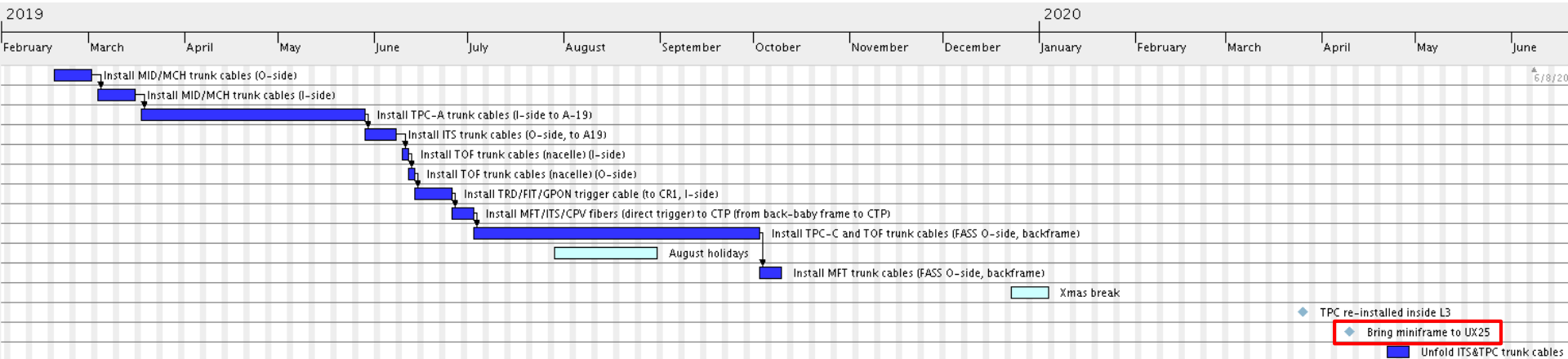
# Planning copper cables (EN-EA)



ALICE

Mar to Aug: pull cables

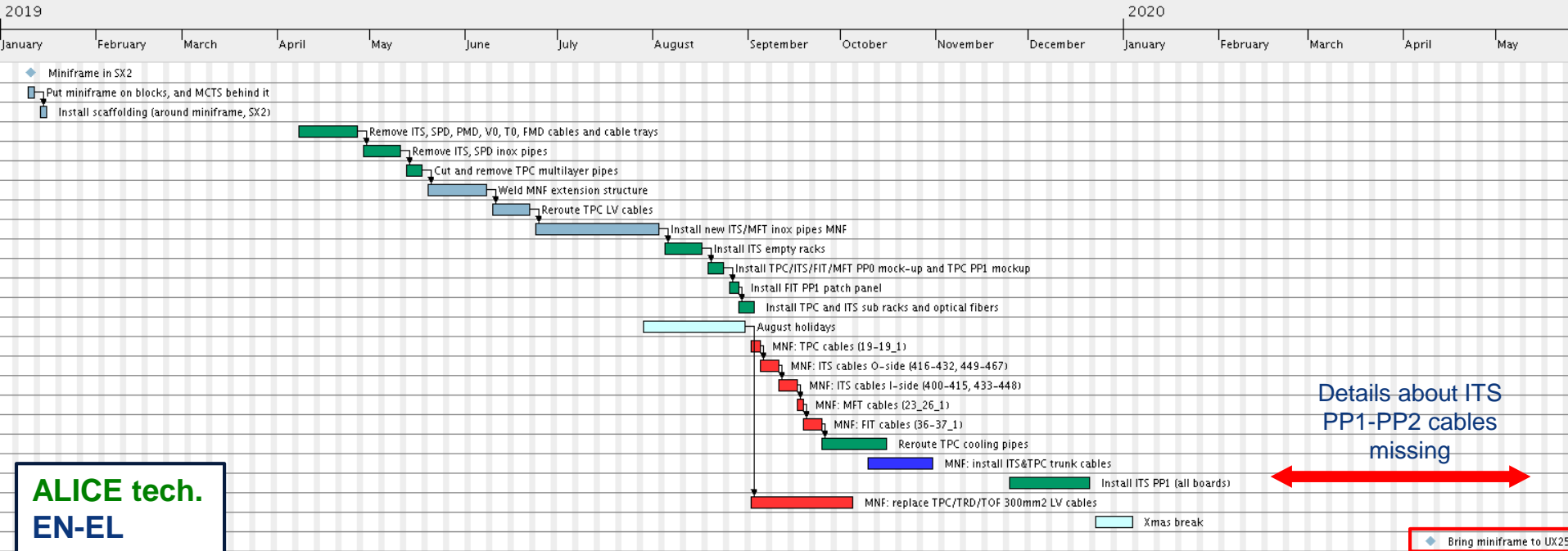
# Planning optical fibers (EN-EL)



Feb to October: install and test all trunk cables

April 2020: install TPC/ITS fibers after Miniframe installation

# Miniframe planning (rework in SX2)



ALICE tech.  
EN-EL  
EN-EA

# Day-by-day sequence w50





# UX25 activities w50 – Mon 10 Dec 2018

**Cavern access from 10:00**

**All racks locked-out**

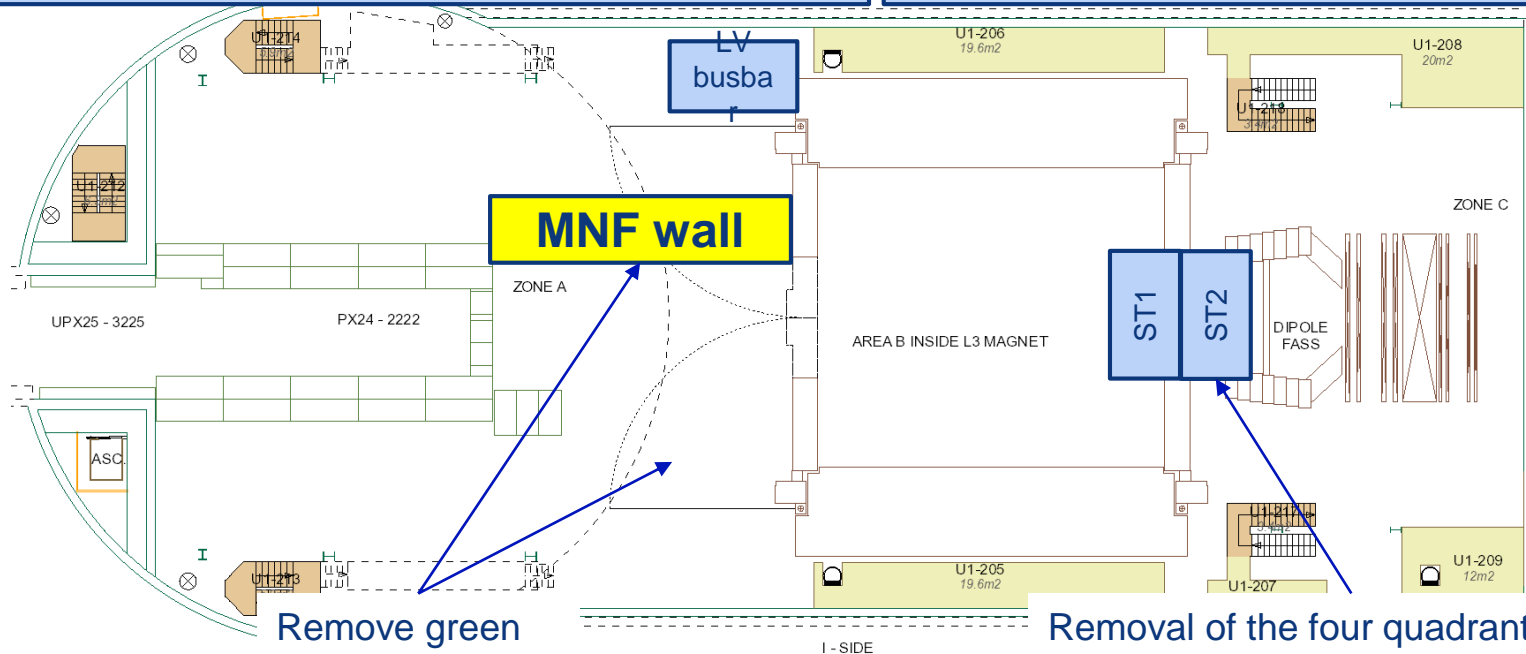
**Guide training (15:00 to 16:00)**

**EN-CV: empty ITS/SPD cooling plant tanks + lockout**

**Start emptying CR1, switch off CR1 by end week**

**EN-CV: put TRD cooling plant in stand-by and drain water**

**ALTEAD transport 4 ST2 quadrants to SX2**

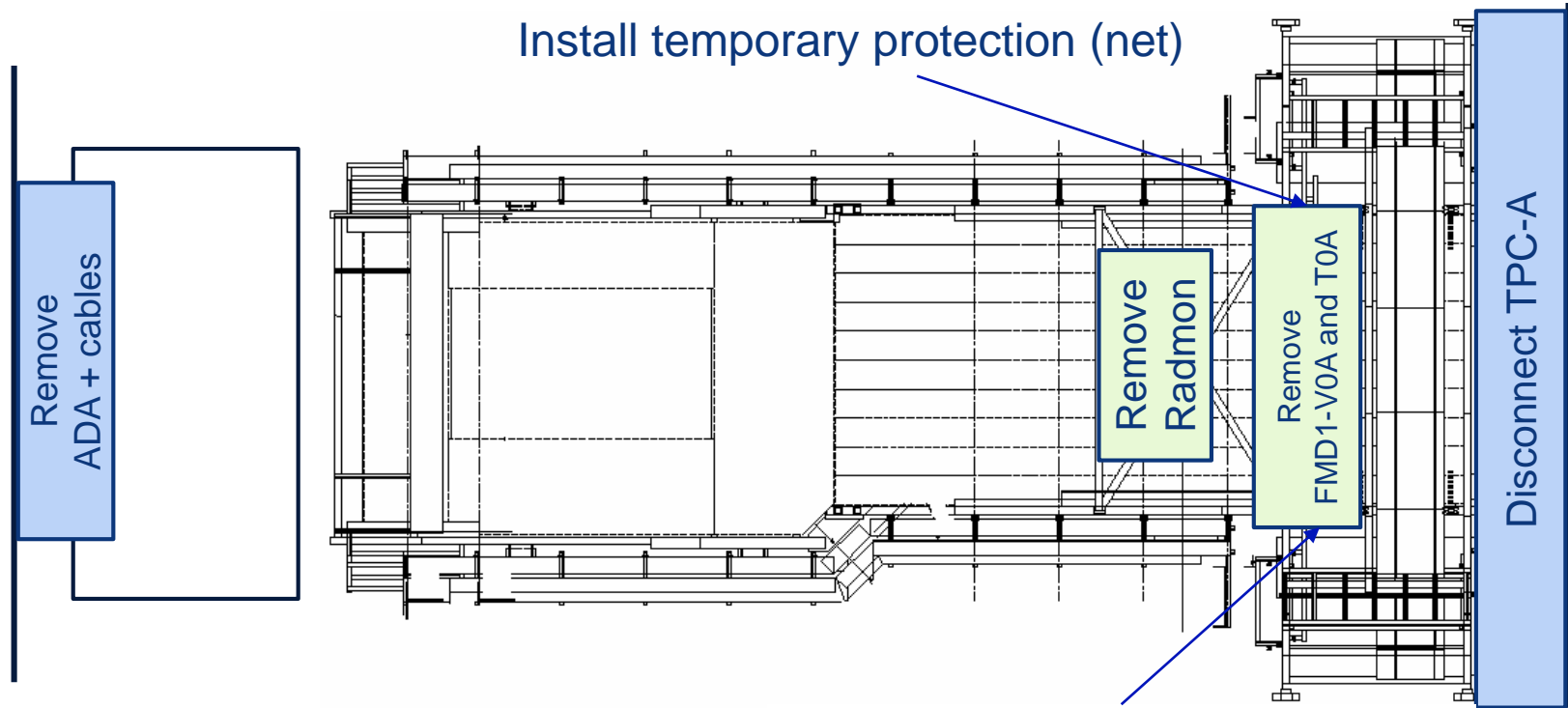


**Remove green fences**

**Removal of the four quadrants from the Cradle → ALTEAD + Jaap**

# Miniframe activities w50 – Mon 10 Dec 2018

Cavern access from 10:00



T0A: remove crates in racks C33-34

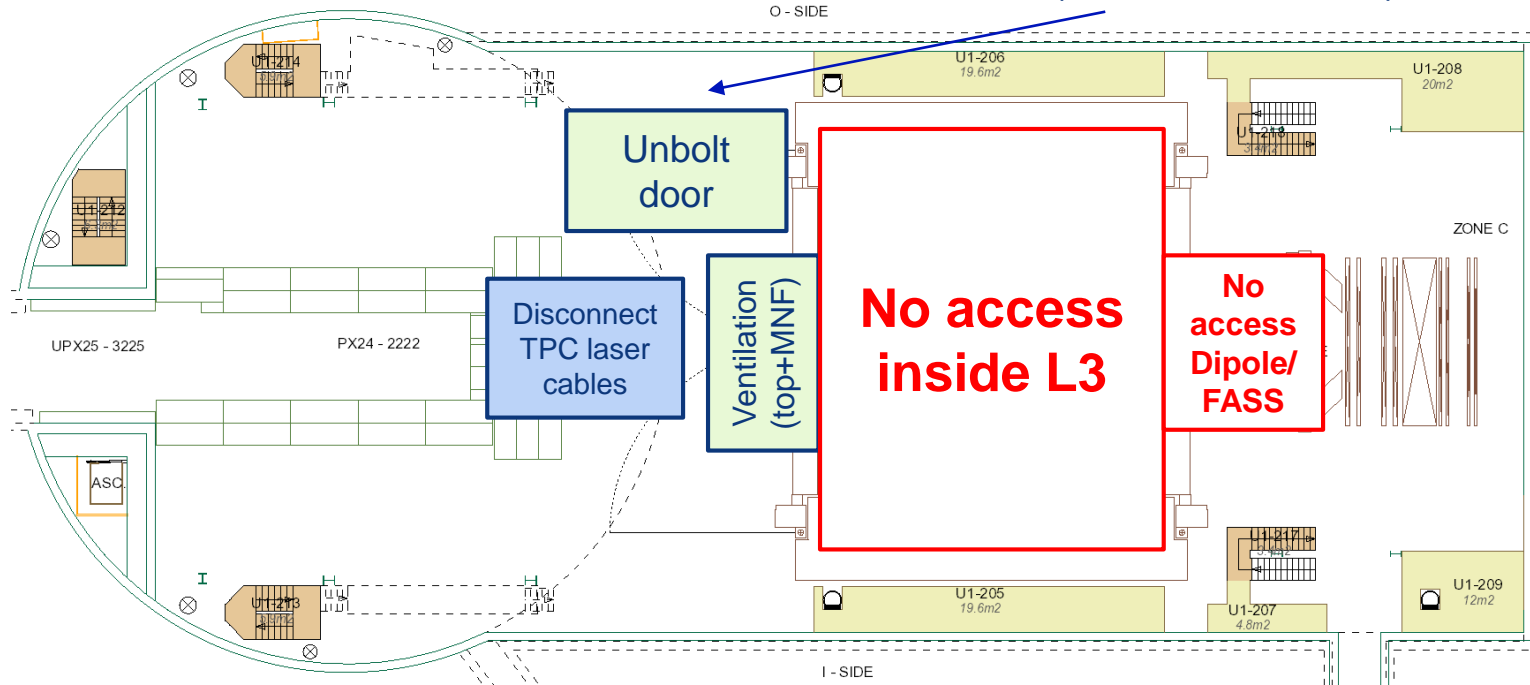
# UX25 activities w50 – Tue 11 Dec 2018

Unrestricted cavern access

ALTEAD transport 4 ST2 quadrants to SX2

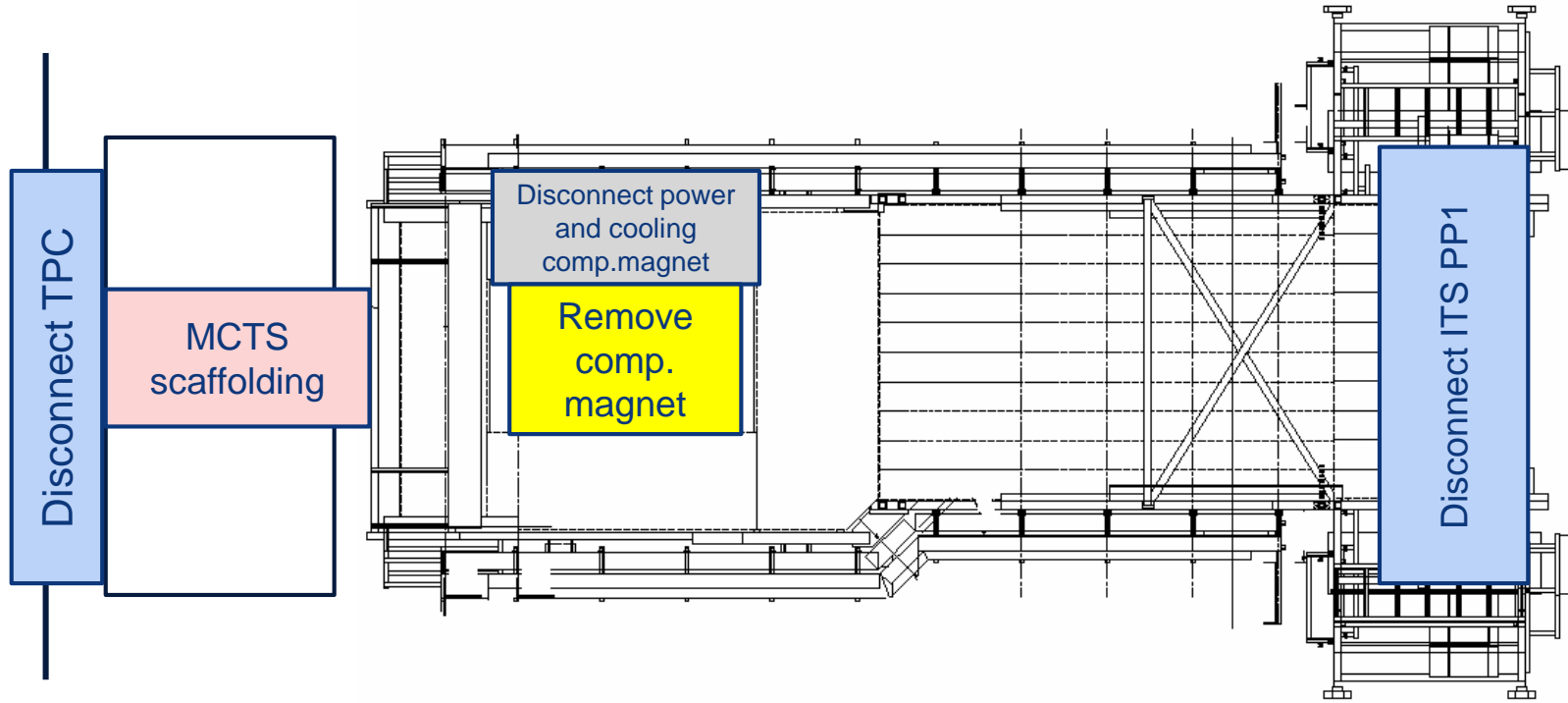
VIP visit (A.Knospe, 16:50 to 17:20) – surface only

Start at 6:00 (Didier + ALTEAD)



# Miniframe activities w50 – Tue 11 Dec 2018

Unrestricted cavern access

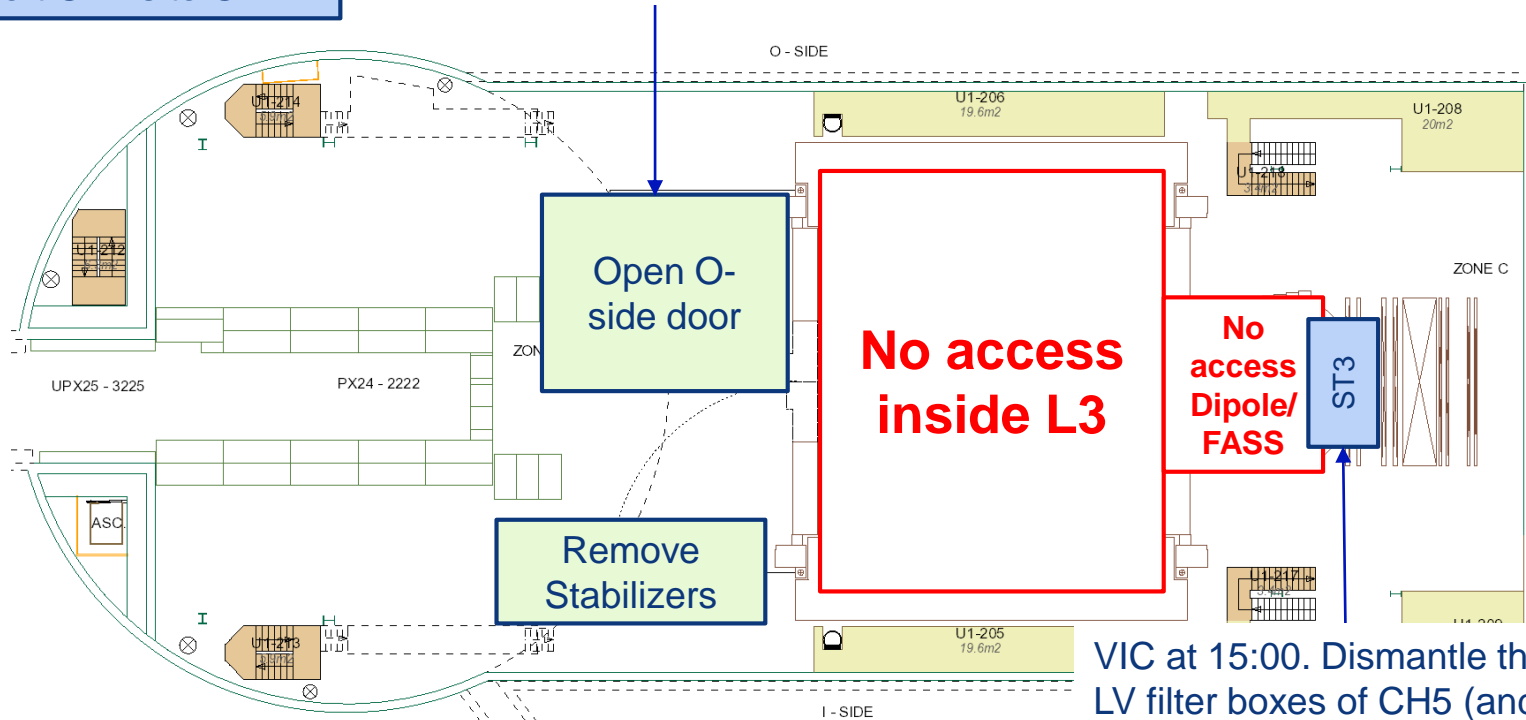


# UX25 activities w50 – Wed 12 Dec 2018

Unrestricted cavern access

Transport GEMs to GIF++

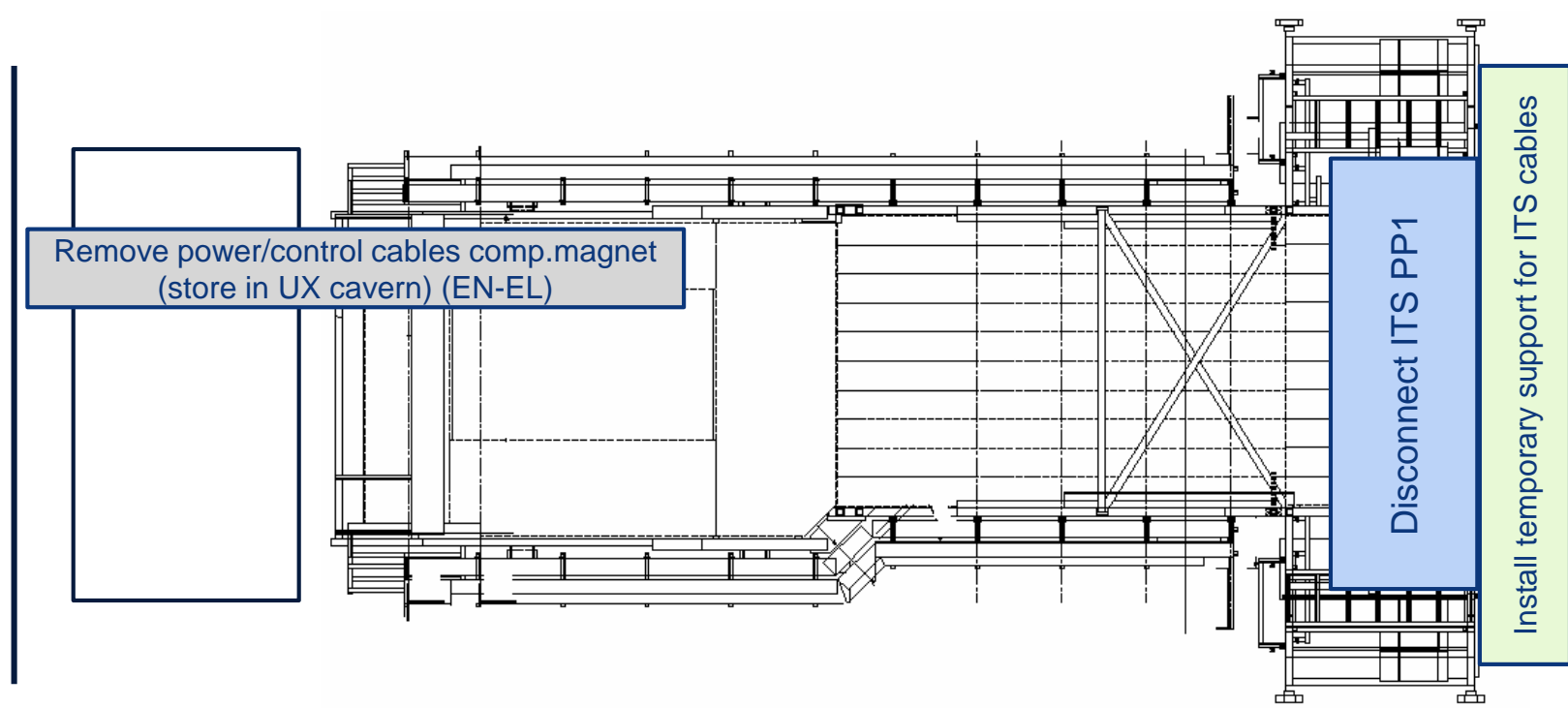
Start at 6:00



VIC at 15:00. Dismantle the LV filter boxes of CH5 (and perhaps CH6)

# Miniframe activities w50 – Wed 12 Dec 2018

## Unrestricted cavern access

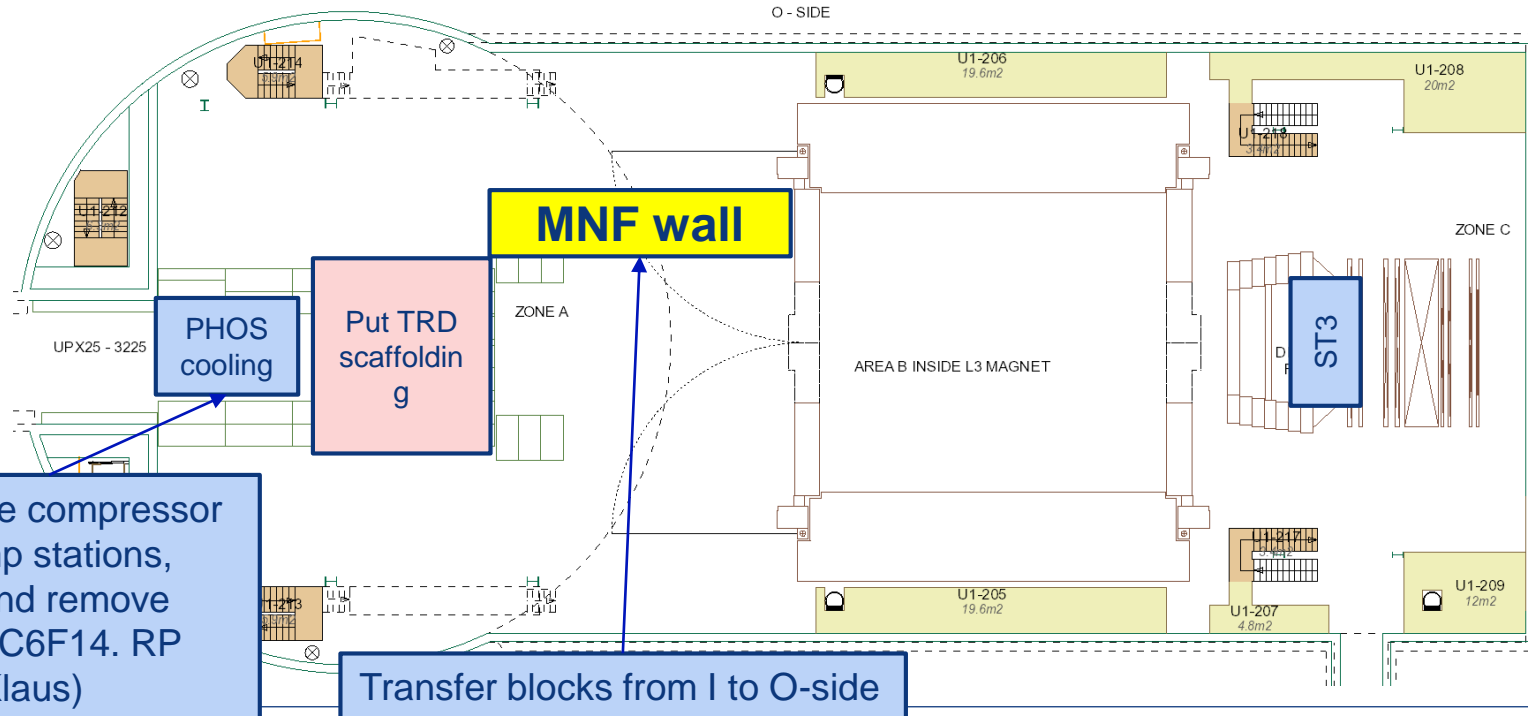


# UX25 activities w50 – Thu 13 Dec 2018

**Cavern access from 10:00**

**Start L3 access without watcher**

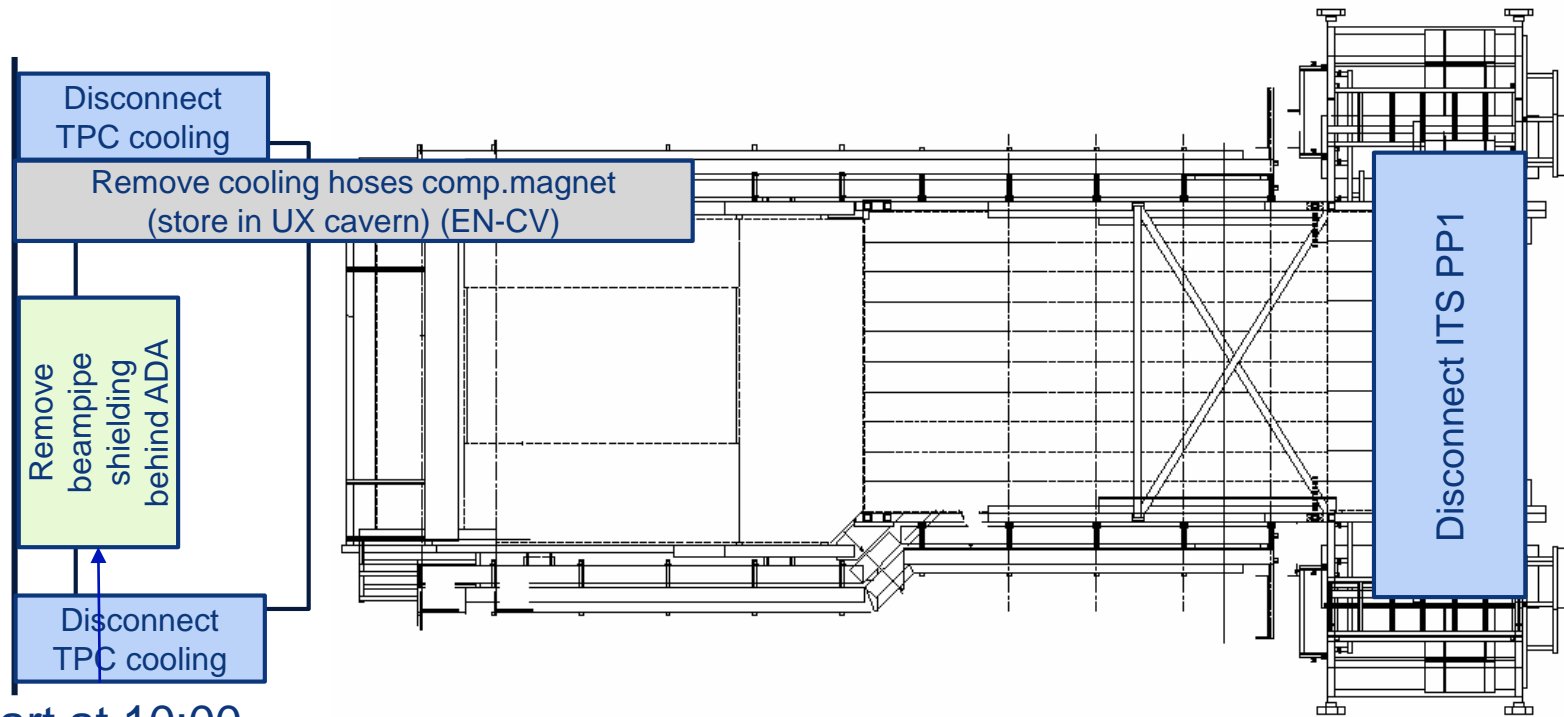
**Start LHC tunnel access**



Clean the compressor and pump stations, collect and remove residual C6F14. RP check (Klaus)

# Miniframe activities w50 – Thu 13 Dec 2018

**Cavern access from 10:00**



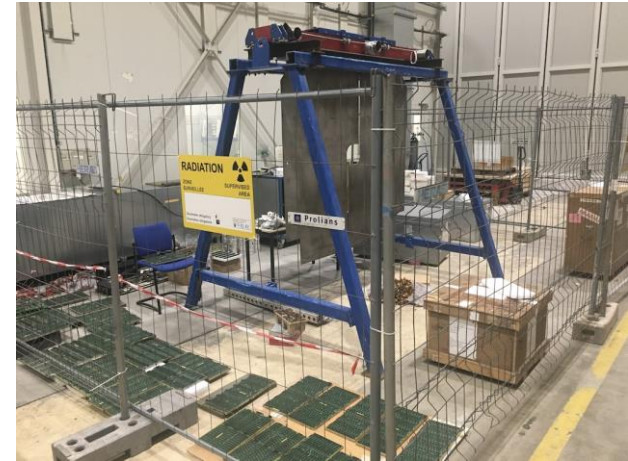
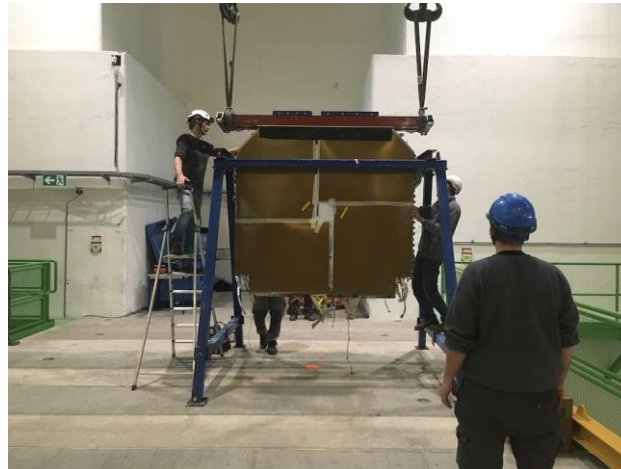
Start at 10:00



# Status 14 Dec

- All HV and LV racks are locked out
- TPC A-side and ITS PP1 are fully disconnected
- ADA, V0A-FMD1/2 and T0A removed on Monday
- PP0 disconnection: TPC done, ITS next week
- Compensator magnet removed on Tue (services as well)
- L3 doors: O side was opened on Wednesday and I side will be opened between today and tomorrow
- 8 quadrants ST2 extracted and moved to Meyrin

# Photos w50 - PMD



# Photos w50 – V0-A & FMD1/2



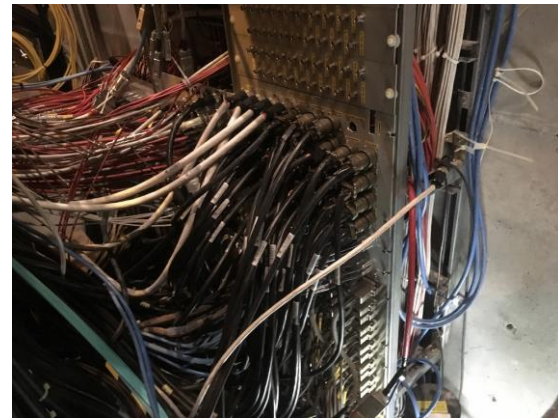
# Photos w50 – ITS PP1



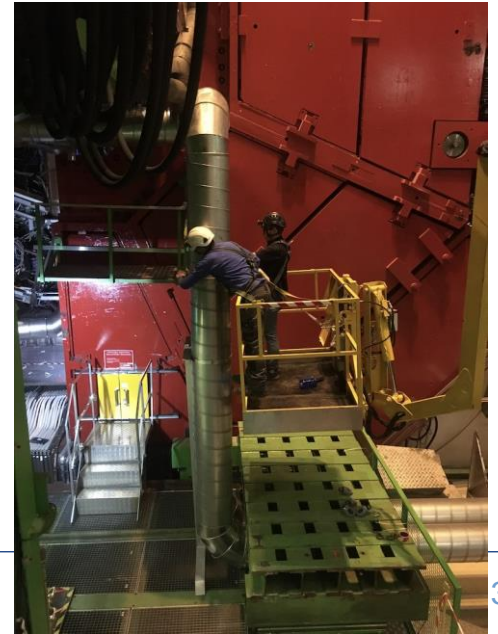
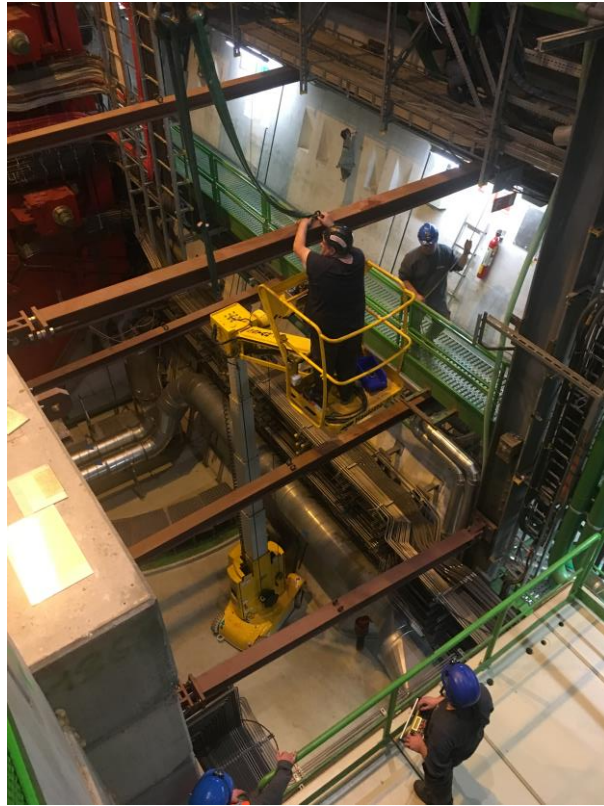
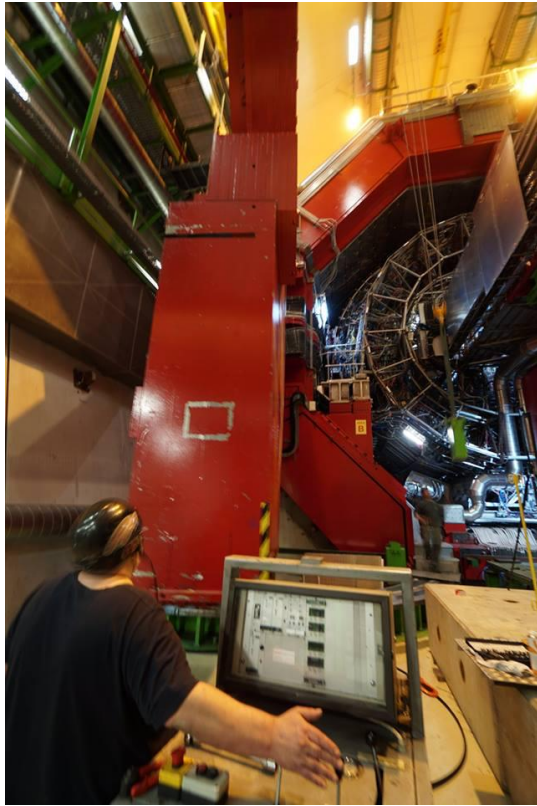
# Photos w50 – ITS PP1



# Photos w50 – PP0



# Photos w50 – L3 doors



# Photos w50 – TRD scaffolding



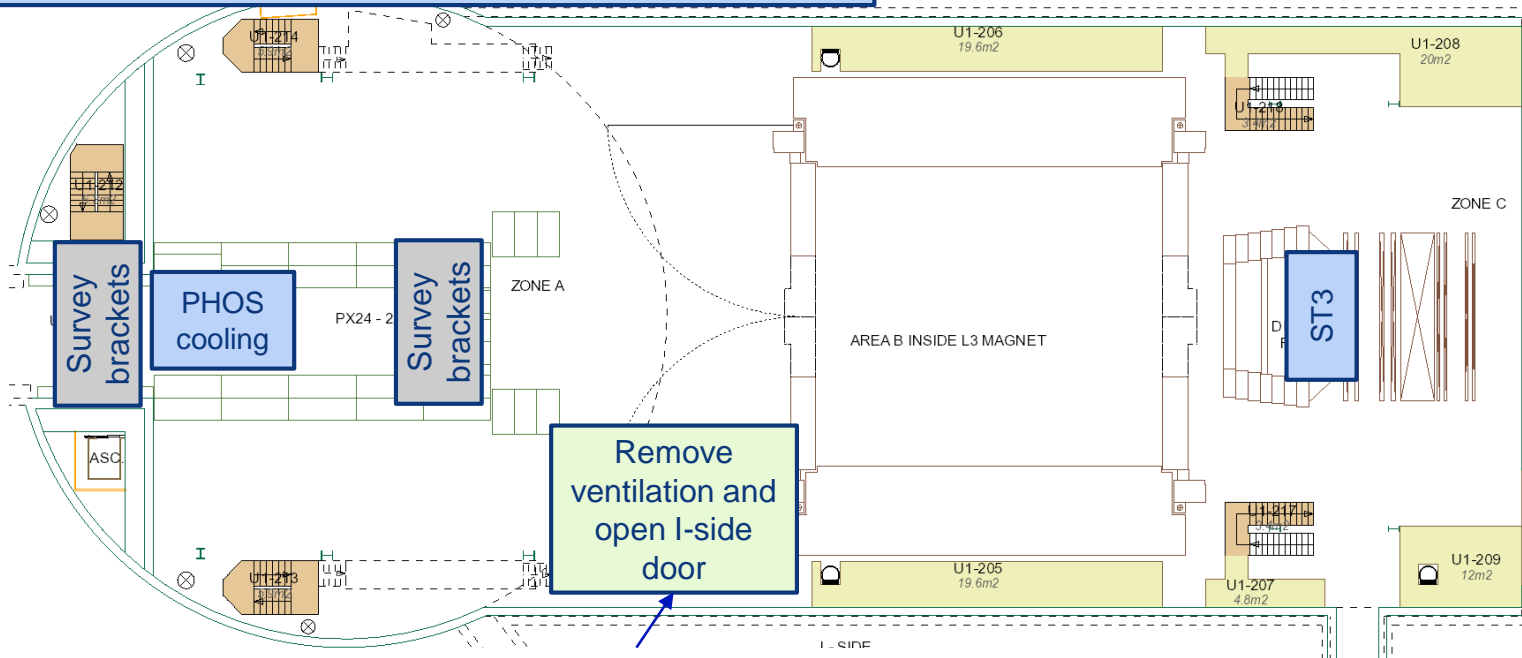


# UX25 activities w50 – Fri 14 Dec 2018

## Unrestricted cavern access

ALTEAD + P2 tech (SX2): load test Miniframe lifting jig

ALTEAD: transport compensator magnet to UX25 (O-side)

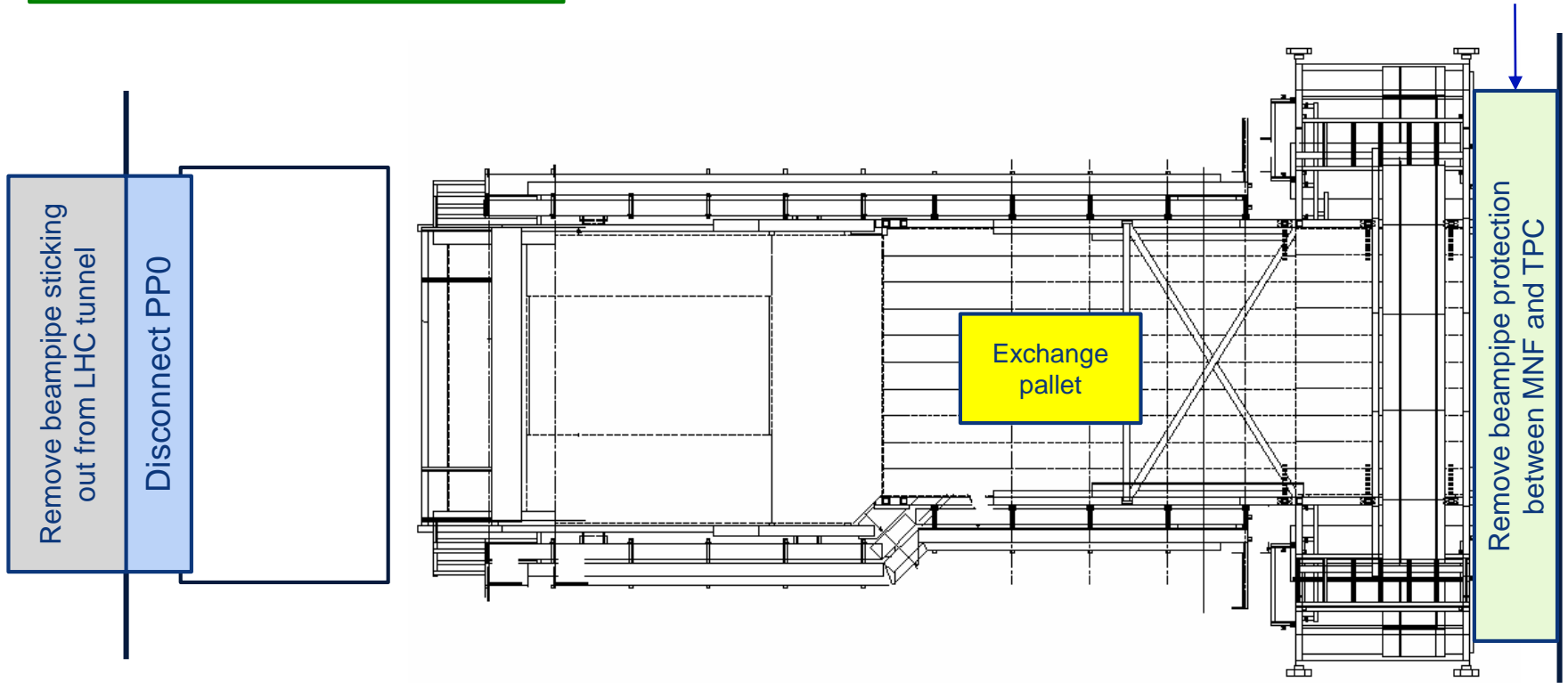


Open door on Saturday (1 crane driver ALTEAD needed)

# Miniframe activities w50 – Fri 14 Dec 2018

Unrestricted cavern access

Yannick



# Day-by-day sequence w51



# UX25 activities w51 – Mon 17 Dec 2018

Unrestricted cavern access

Start UX visits (Sunday 16 December)

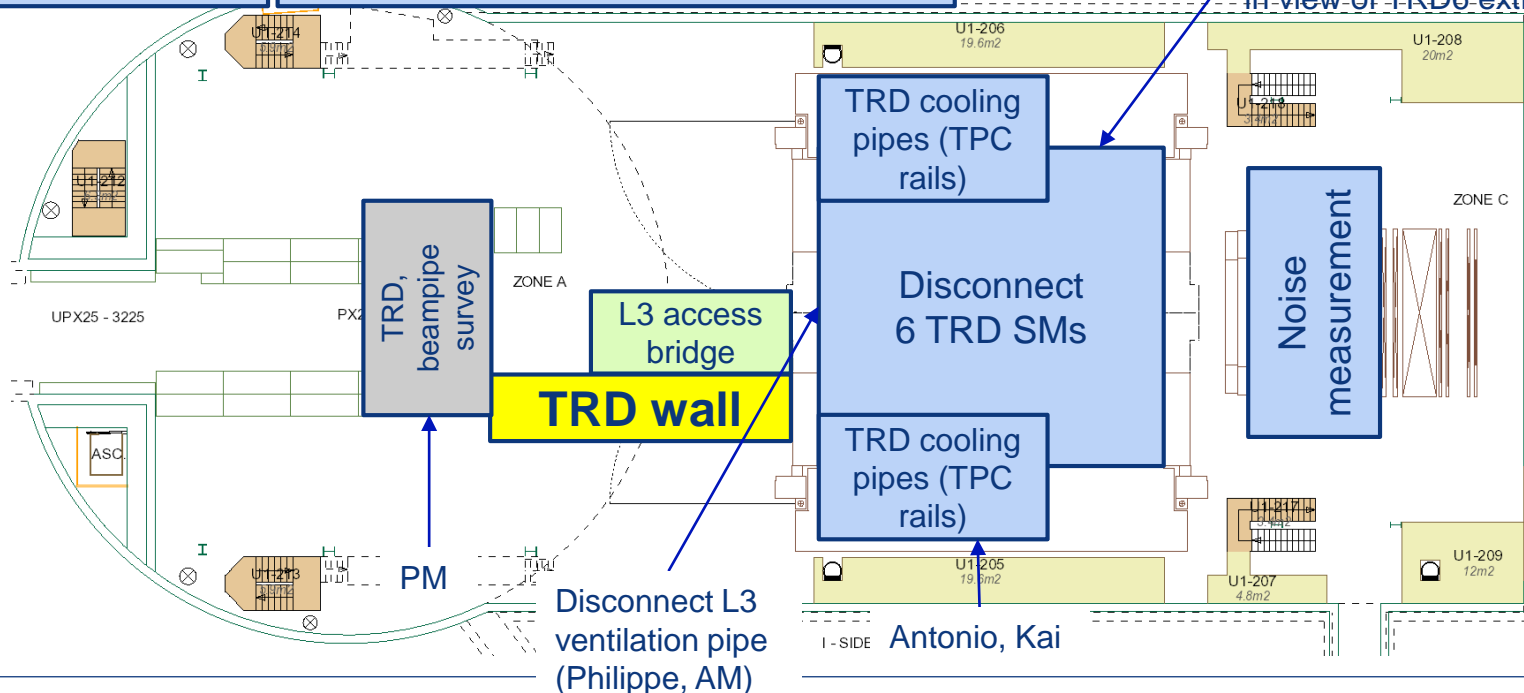
Visit (77 people, 13:30): Despina

SMB: asphalt road between SX2 and SU2

Switch-off CTP crates

ALTEAD: transport VSC box to Meyrin

TOF: disconnect services in-view of TRD6 extraction



# Miniframe activities w51 – Mon 17 Dec 2018

## Unrestricted cavern access

Philippe

Fabio

Yannick

Luciano, Oscar,  
Giuseppe, Fabio

Disconnect  
optical fibers  
(nacelle)

Disconnect  
ITS/SPD/TPC  
cooling hoses  
(nacelle)

Kai, Arturo

TRD patch  
panel

Remove PP0 cables

Pieter

Put plate to  
close shielding  
opening

Remove beampipe beam

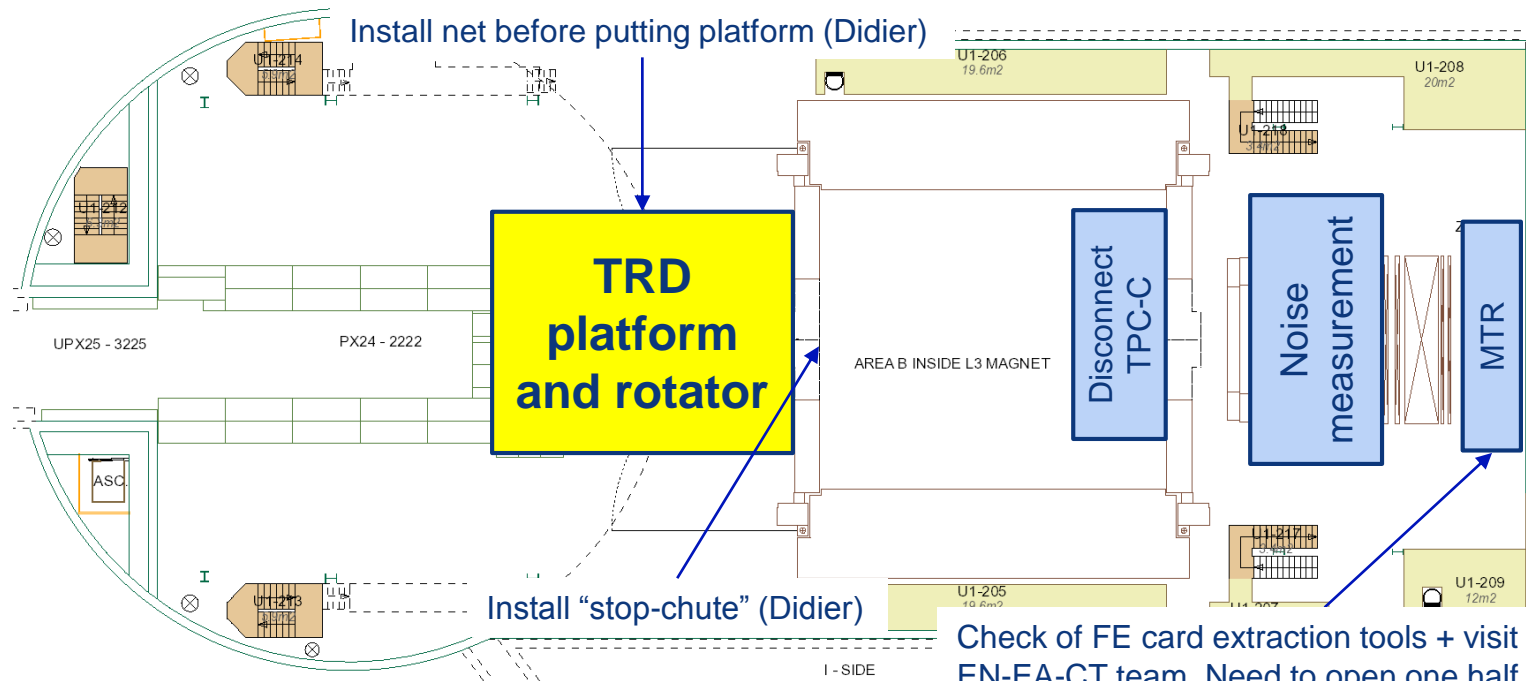
Remove PP0 cables

Unfold/cut  
signal/HV  
cables

# UX25 activities w51 – Tue 18 Dec 2018

**Cavern lift maintenance from 6:00 AM to 8:00 AM, cavern access from 8:00 AM**

**Unrestricted cavern access**

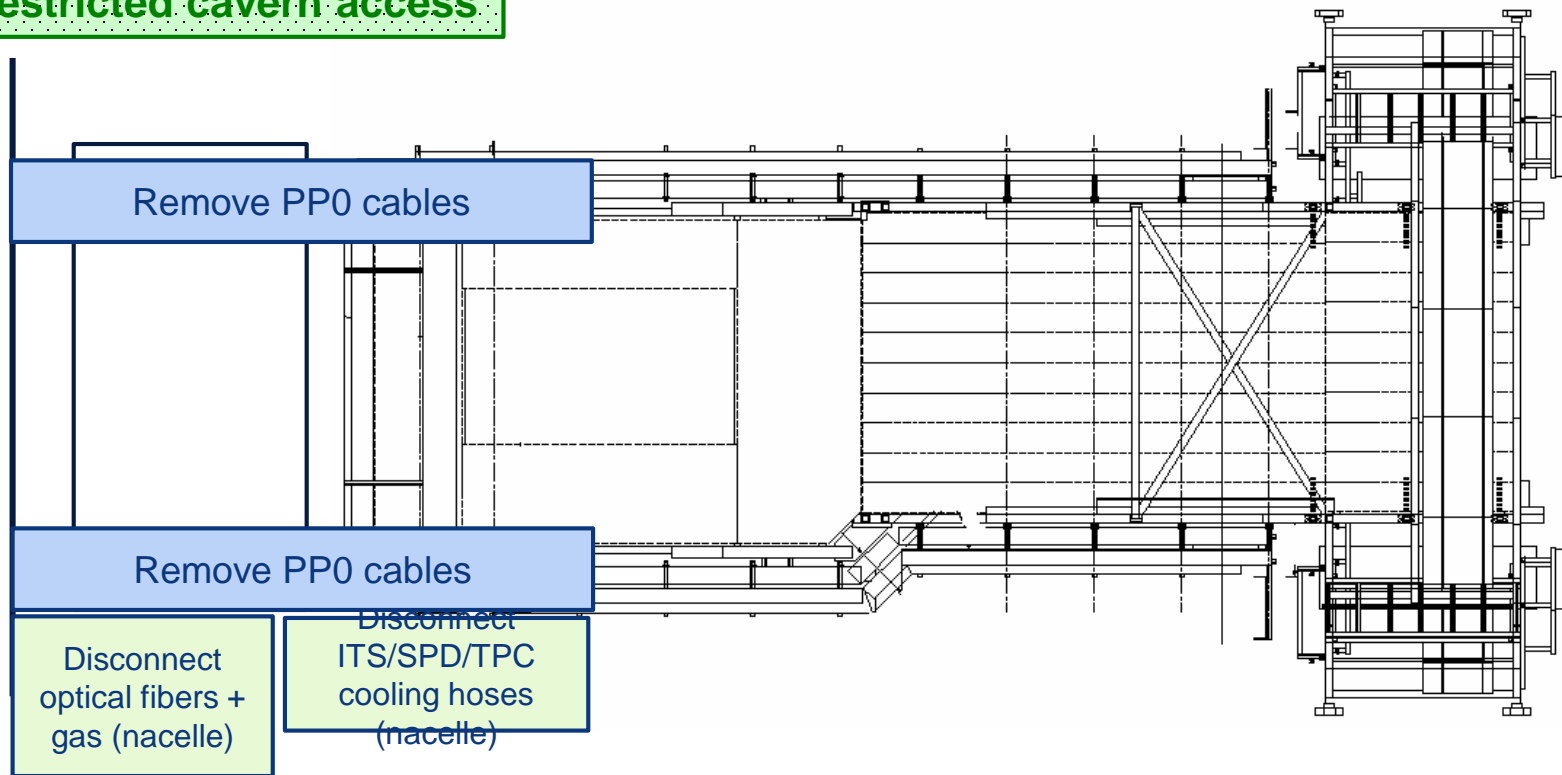


Check of FE card extraction tools + visit of CERN EN-EA-CT team. Need to open one half plane

# Miniframe activities w51 – Tue 18 Dec 2018

**Cavern lift maintenance from 6:00 AM to 8:00 AM, cavern access from 8:00 AM**

**Unrestricted cavern access**



# UX25 activities w51 – Wed 19 Dec 2018

**Unrestricted cavern access**

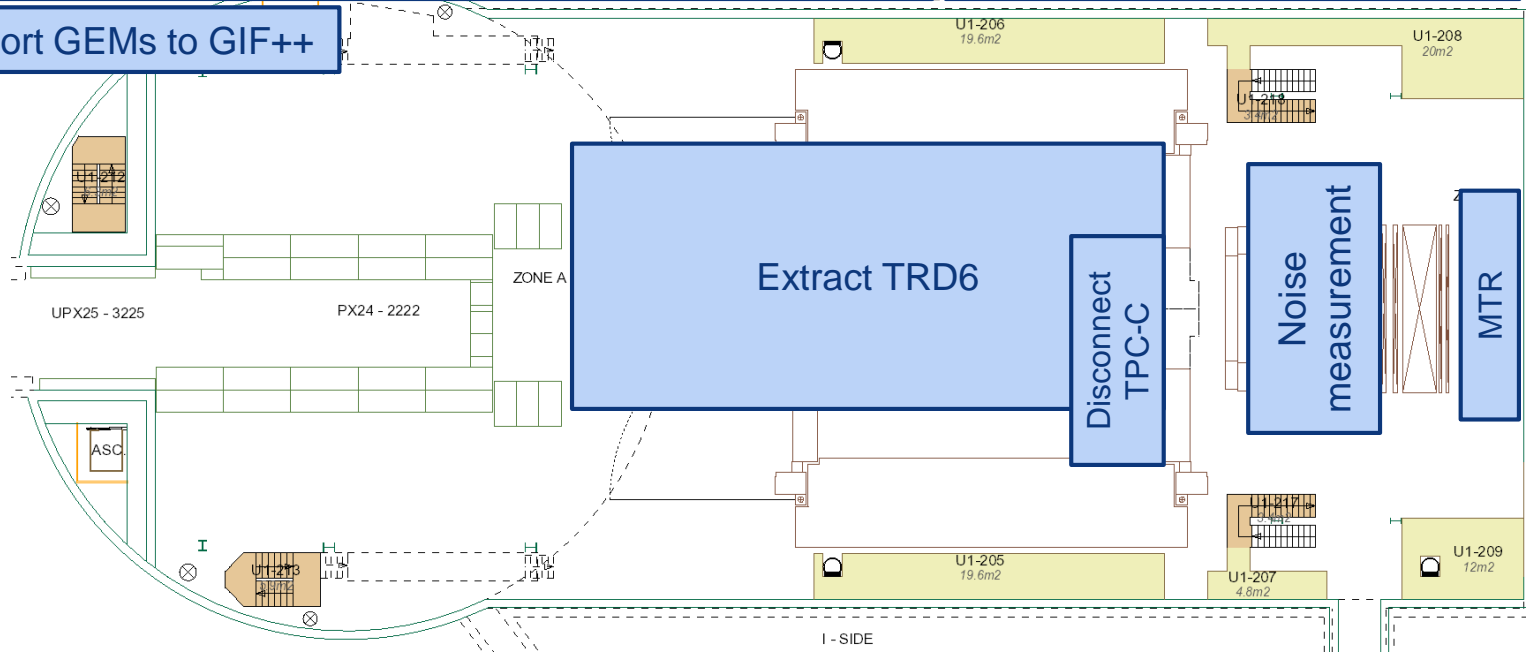
ALTEAD (SX2): bring big PX24 beams outside

**EN-EL: test secours. Cut general-services (6:00 AM – 6:06 AM). No access from 5:00 to 8:00**

ALTEAD: bring TRD6 into SXL2 tent (transfer into blue frame)

Switch-over to ARCAL 10 (SG2)

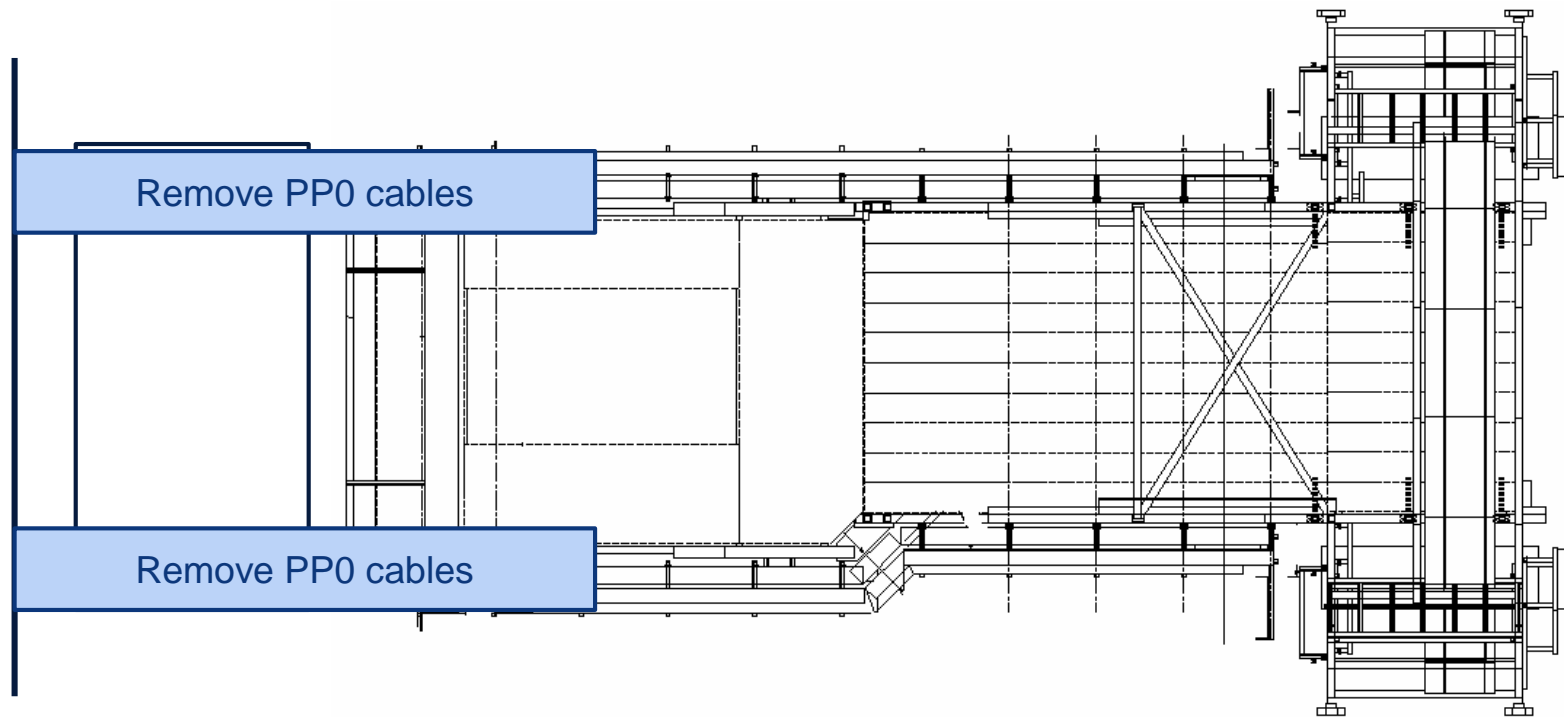
Transport GEMs to GIF++





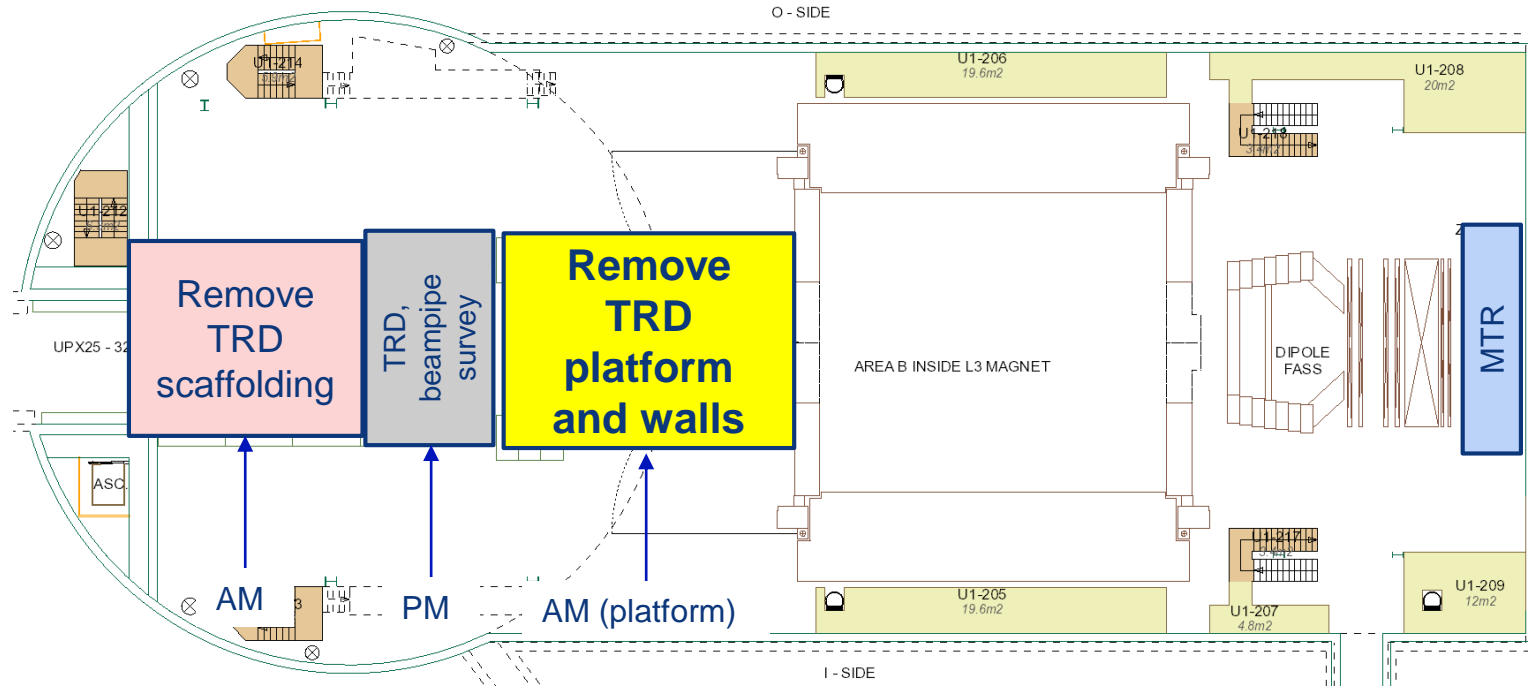
# Miniframe activities w51 – Wed 19 Dec 2018

Unrestricted cavern access



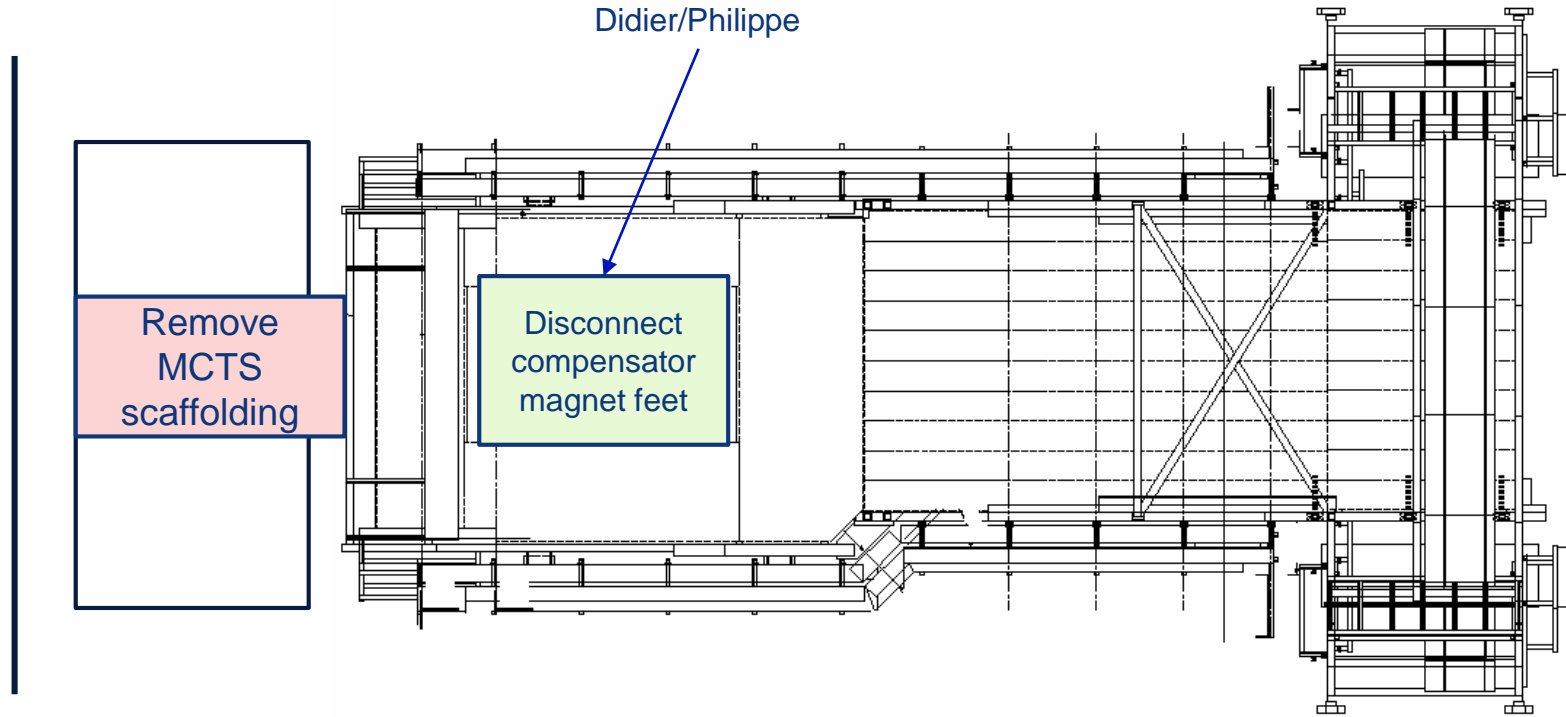
# UX25 activities w51 – Thu 20 Dec 2018

Unrestricted cavern access



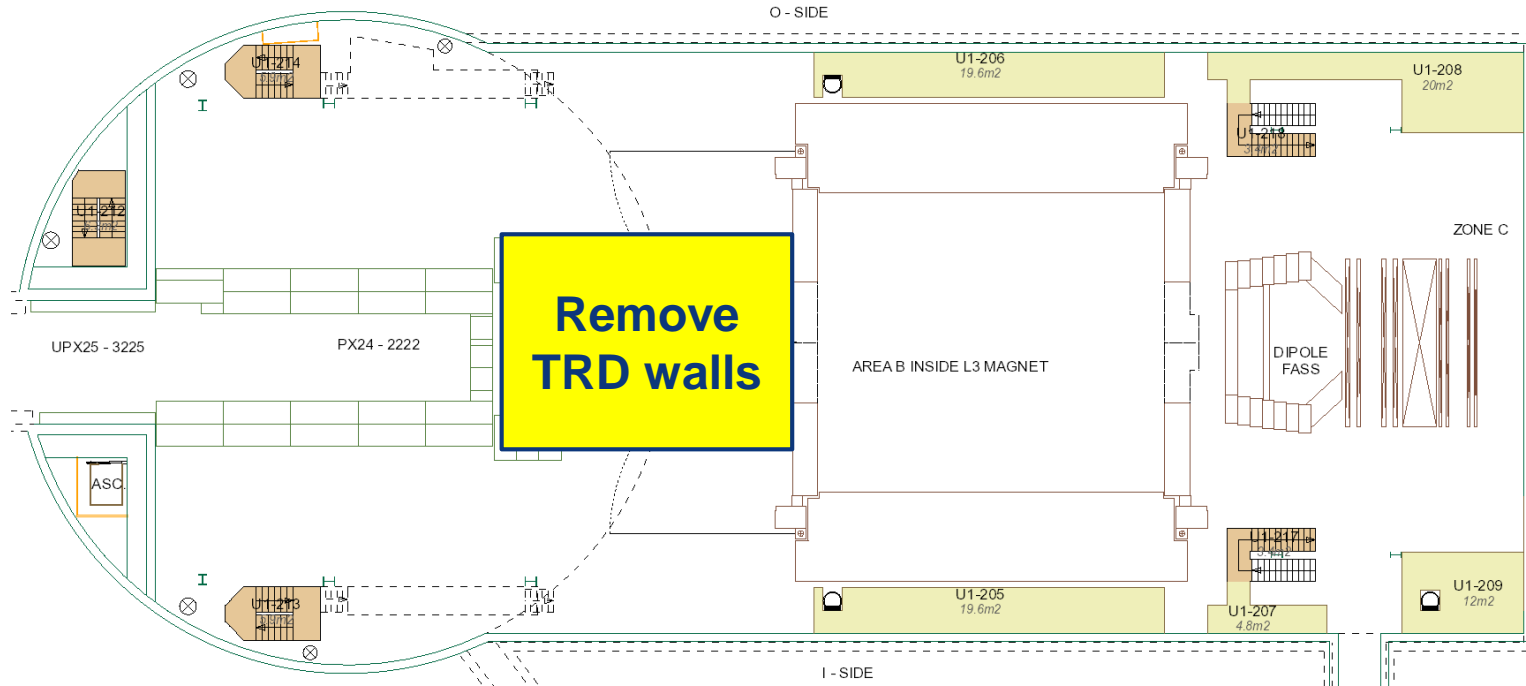
# Miniframe activities w51 – Thu 20 Dec 2018

Unrestricted cavern access



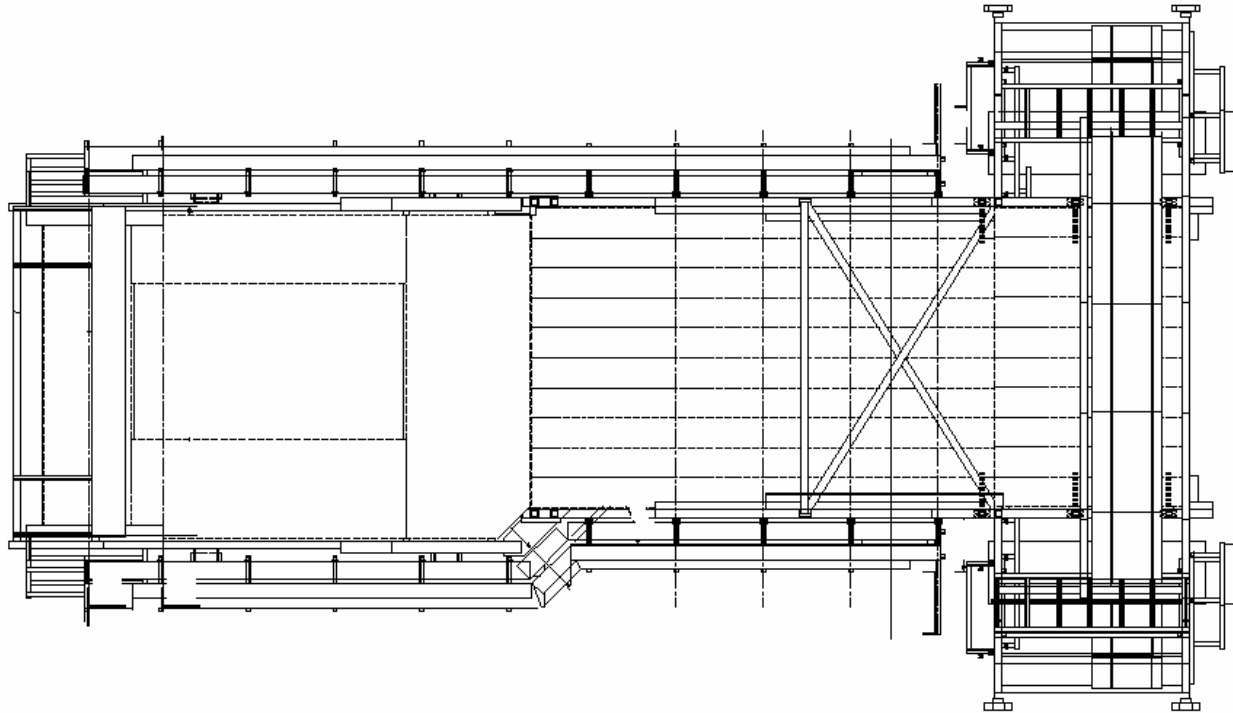
# UX25 activities w51 – Fri 21 Dec 2018

**No access cavern whole day (ALTEAD starts at 6:00 AM)**



# Miniframe activities w51 – Fri 21 Dec 2018

**No access cavern whole day (ALTEAD starts at 6:00 AM)**



# Activities Xmas closure

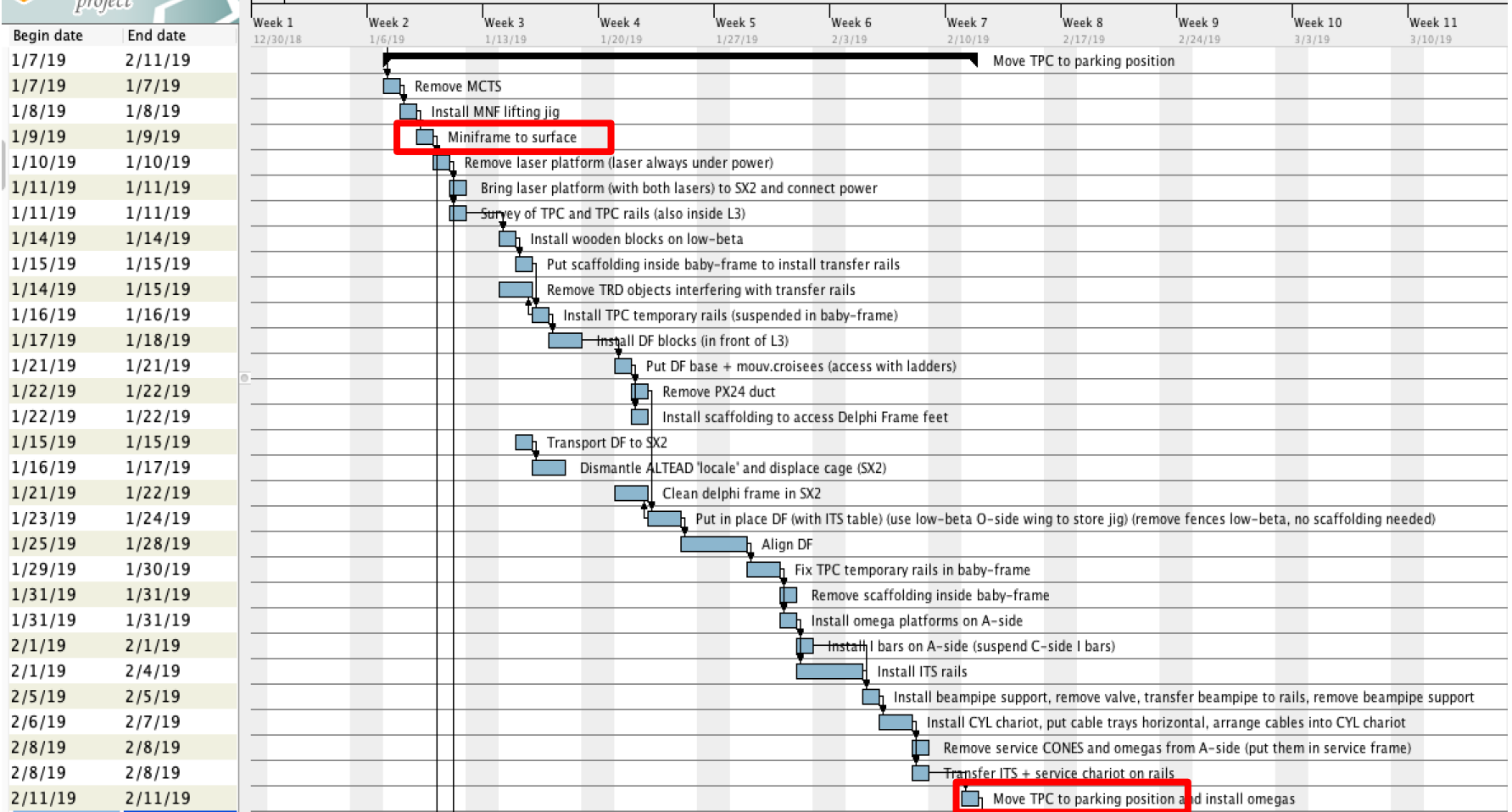
# Activities Xmas closure

- No access to CERN during Xmas closure. Please send an email to us (Arturo/Andre) before Wednesday 19.12 if you plan to access CERN.
- Round schedule:
  - Sat 22.12           Sasha
  - Mon 24.12           Renato
  - Wed 26.12           Renato
  - Fri 28.12           Arturo
  - Sun 30.12           Chilo
  - Tue 01.01           Chilo
  - Thu 03.01           Andre
  - Sat 05.01           Andre
- EN-HE: installation camera UX25 lift. Lift unavailable the 26<sup>th</sup> between 8:30 AM and 11:30 AM
- BE-ICS: evacuation sirens tests – 27.12 from 8:00 to 12:00

# Jan-Feb activities 1/2



2019



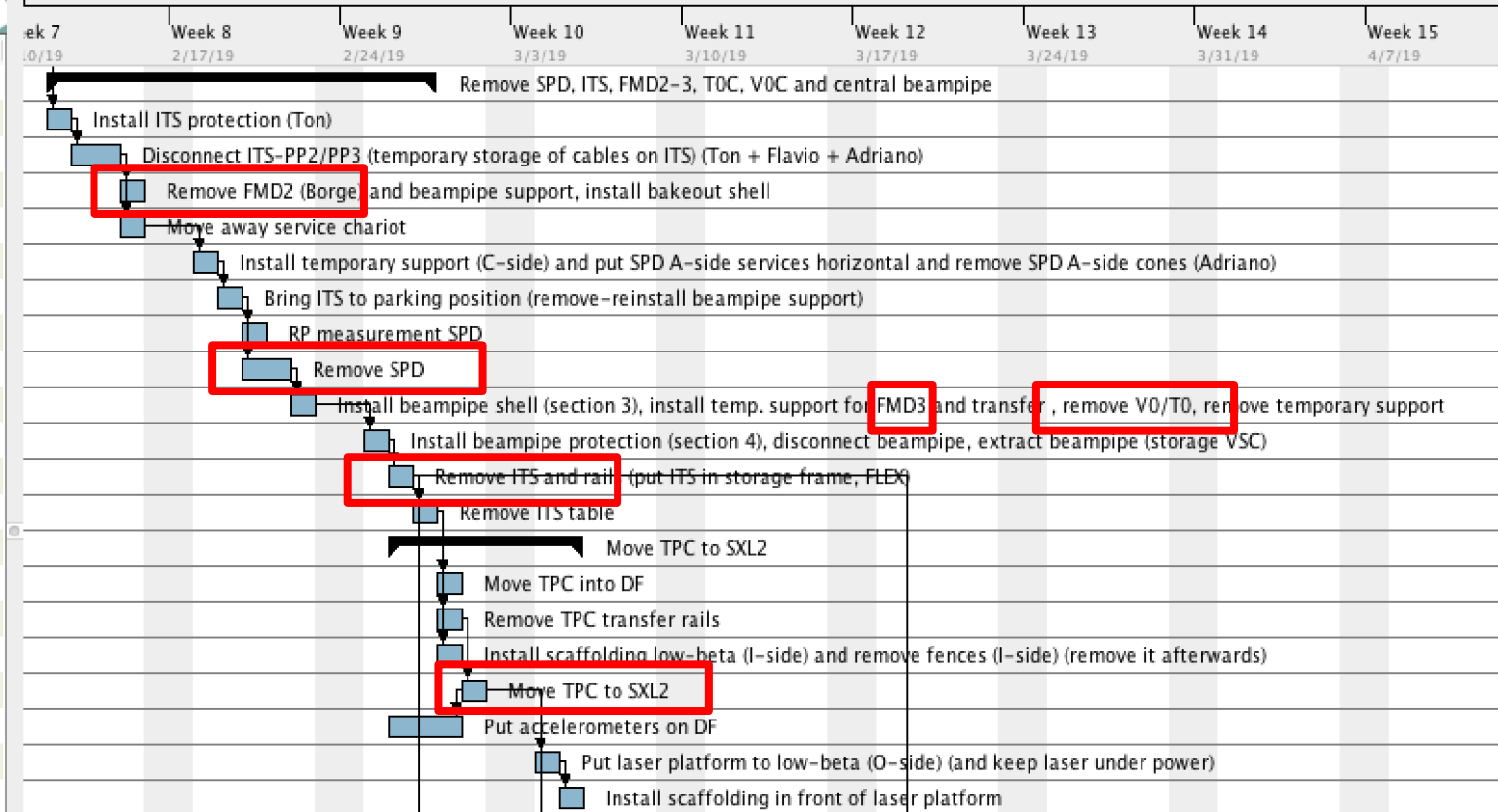


# Jan-Feb activities 2/2



2019

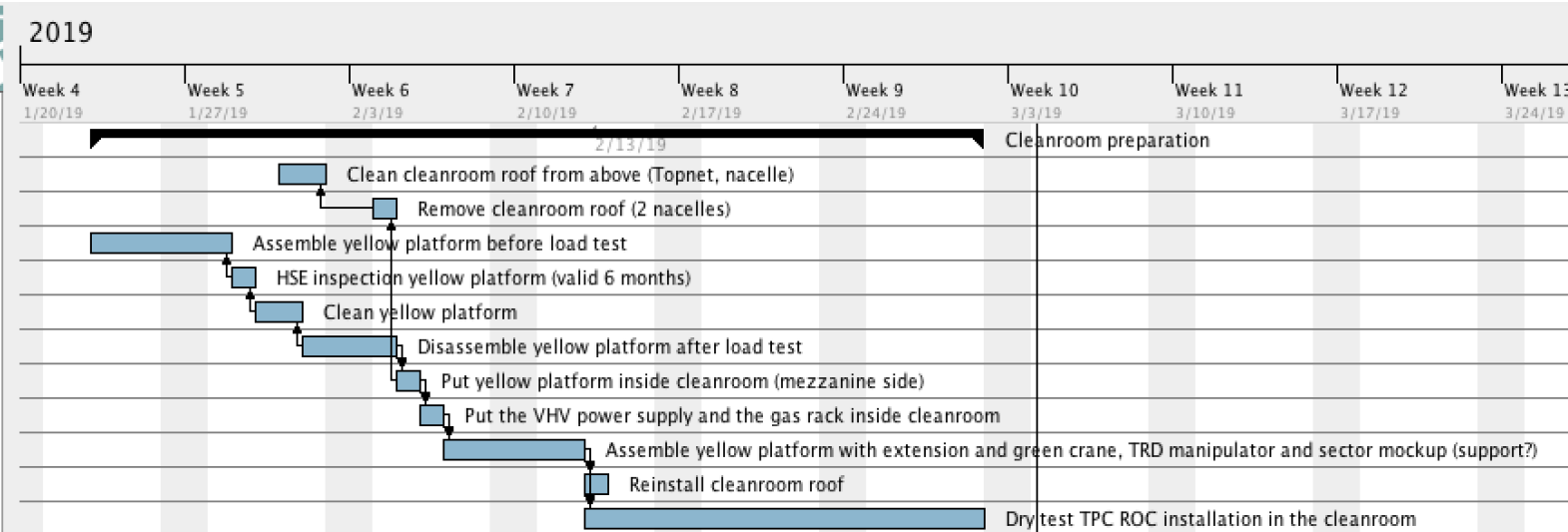
Begin date	End date
2/12/19	2/27/19
2/12/19	2/12/19
2/13/19	2/14/19
2/15/19	2/15/19
2/15/19	2/15/19
2/18/19	2/18/19
2/19/19	2/19/19
2/20/19	2/20/19
2/20/19	2/21/19
2/22/19	2/22/19
2/25/19	2/25/19
2/26/19	2/26/19
2/27/19	2/27/19
2/26/19	3/5/19
2/28/19	2/28/19
2/28/19	2/28/19
2/28/19	2/28/19
2/28/19	2/28/19
3/1/19	3/1/19
2/26/19	2/28/19
3/4/19	3/4/19
3/5/19	3/5/19



# TPC preparation (cleanroom)



Begin date	End date
1/23/19	3/1/19
1/31/19	2/1/19
2/4/19	2/4/19
1/23/19	1/28/19
1/29/19	1/29/19
1/30/19	1/31/19
2/1/19	2/4/19
2/5/19	2/5/19
2/6/19	2/6/19
2/7/19	2/12/19
2/13/19	2/13/19
2/13/19	3/1/19



# Day-by-day sequence w2



# UX25 activities w2 – Mon 7 Jan 2019

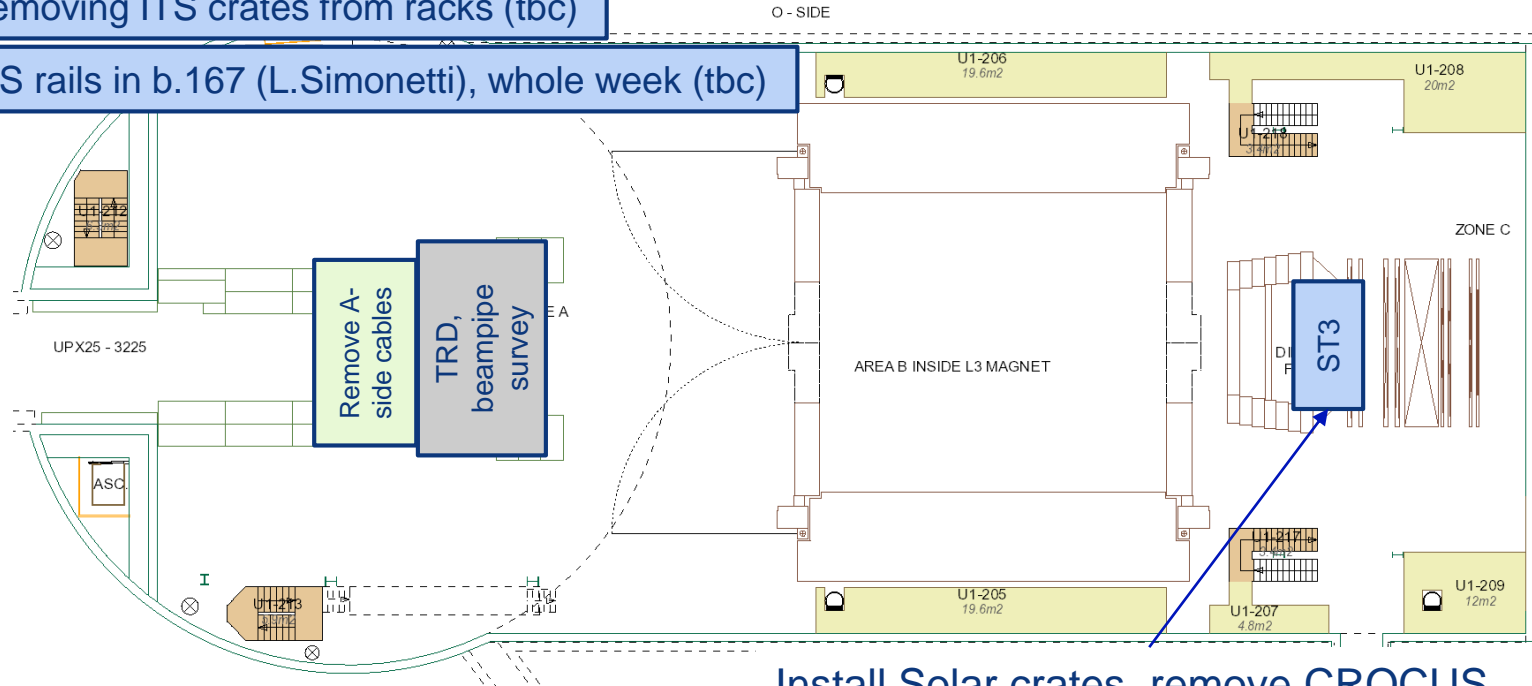
Arrival 5 Pakistani team

P2 tech (SXL2): disassemble PMD and cradle

Maintenance fire detection, whole week

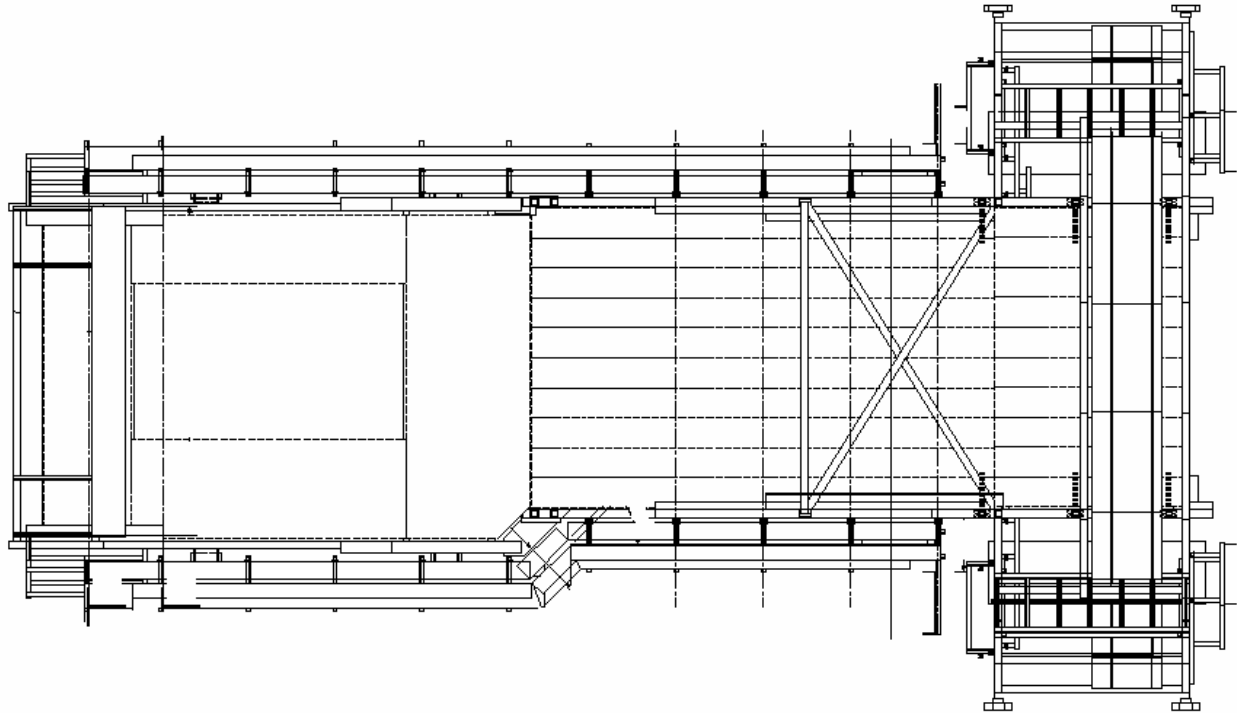
Start removing ITS crates from racks (tbc)

Test ITS rails in b.167 (L.Simonetti), whole week (tbc)



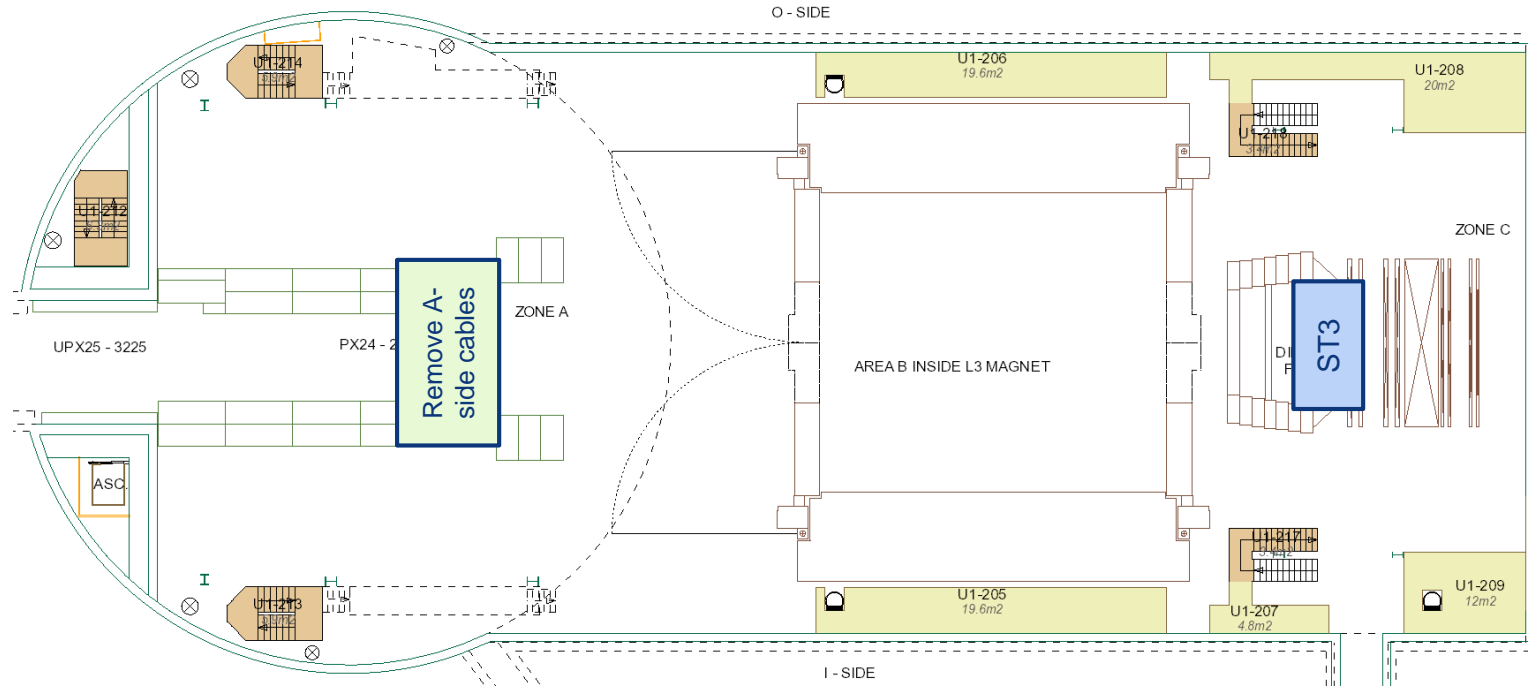
Install Solar crates, remove CROCUS,  
cables, boxes (nacelle, scaffolding)

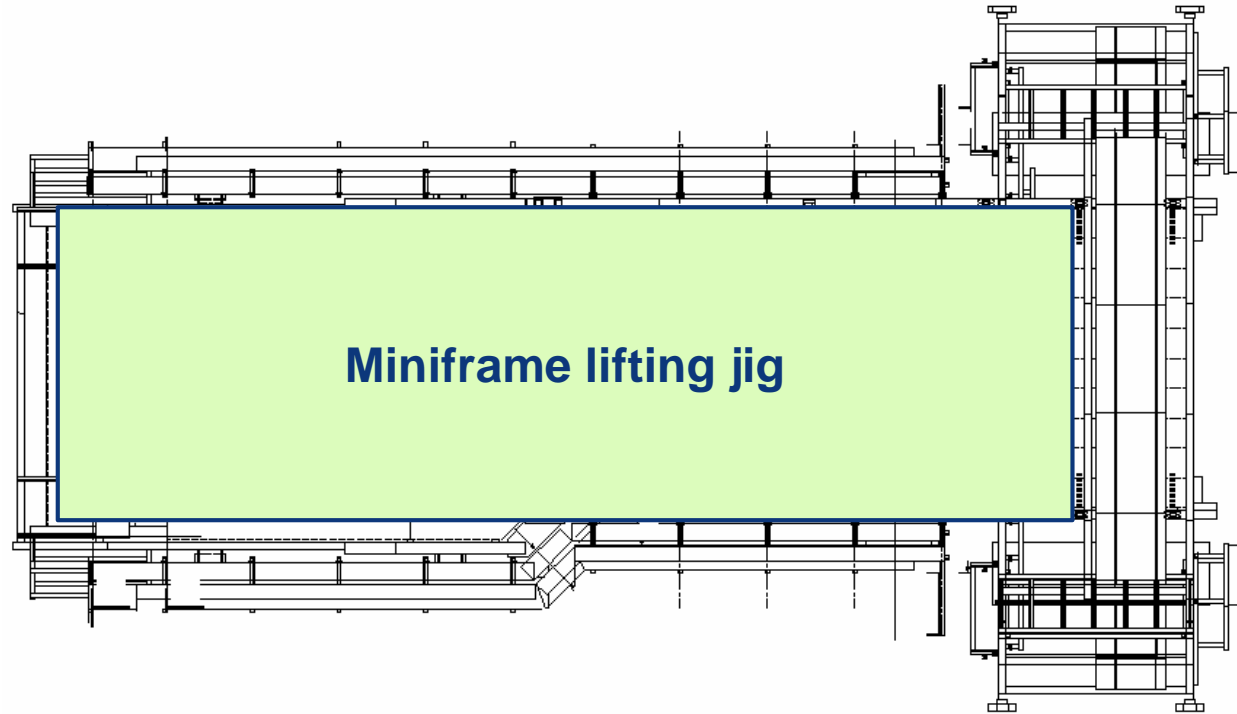
**Remove  
MCTS**



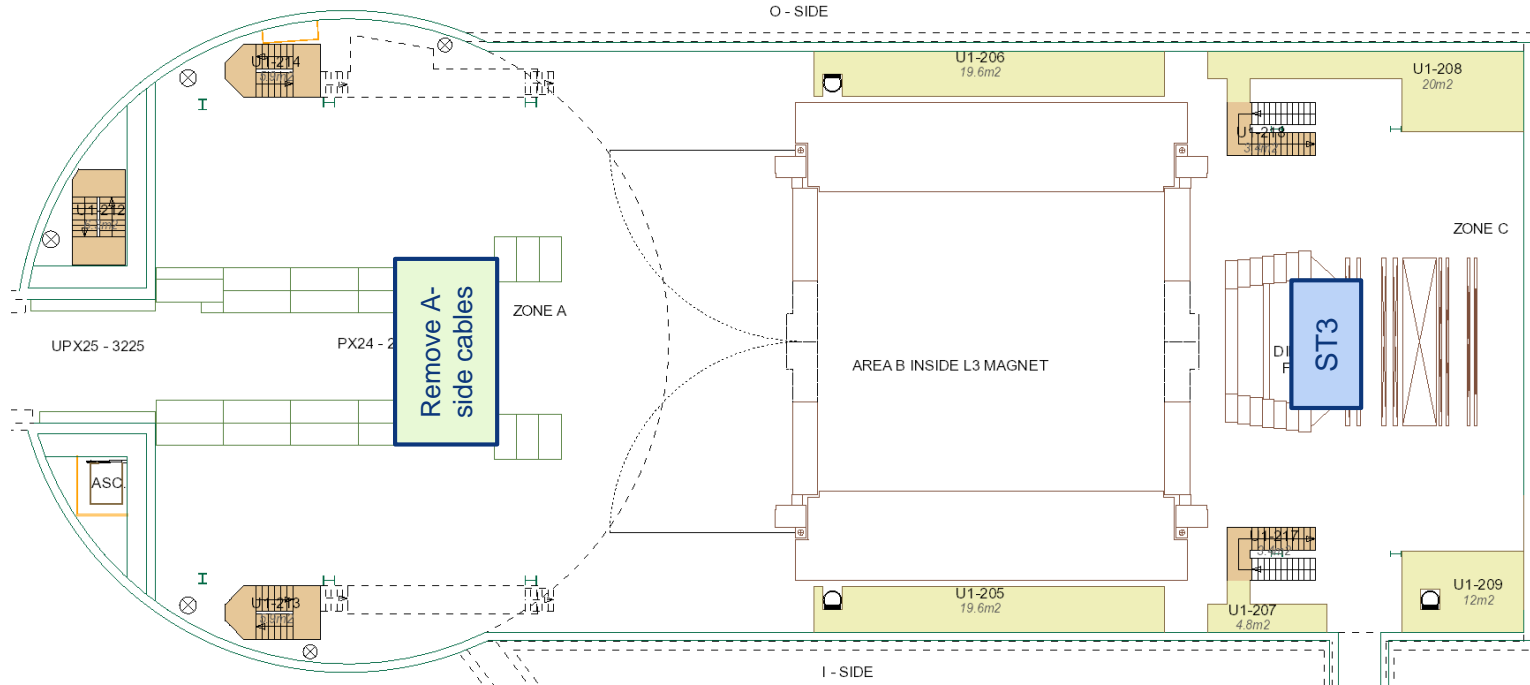
# UX25 activities w2 – Tue 8 Jan 2019

ALTEAD: load test UX25 crane





# UX25 activities w2 – Wed 9 Jan 2019





# Miniframe activities w2 – Wed 9 Jan 2019

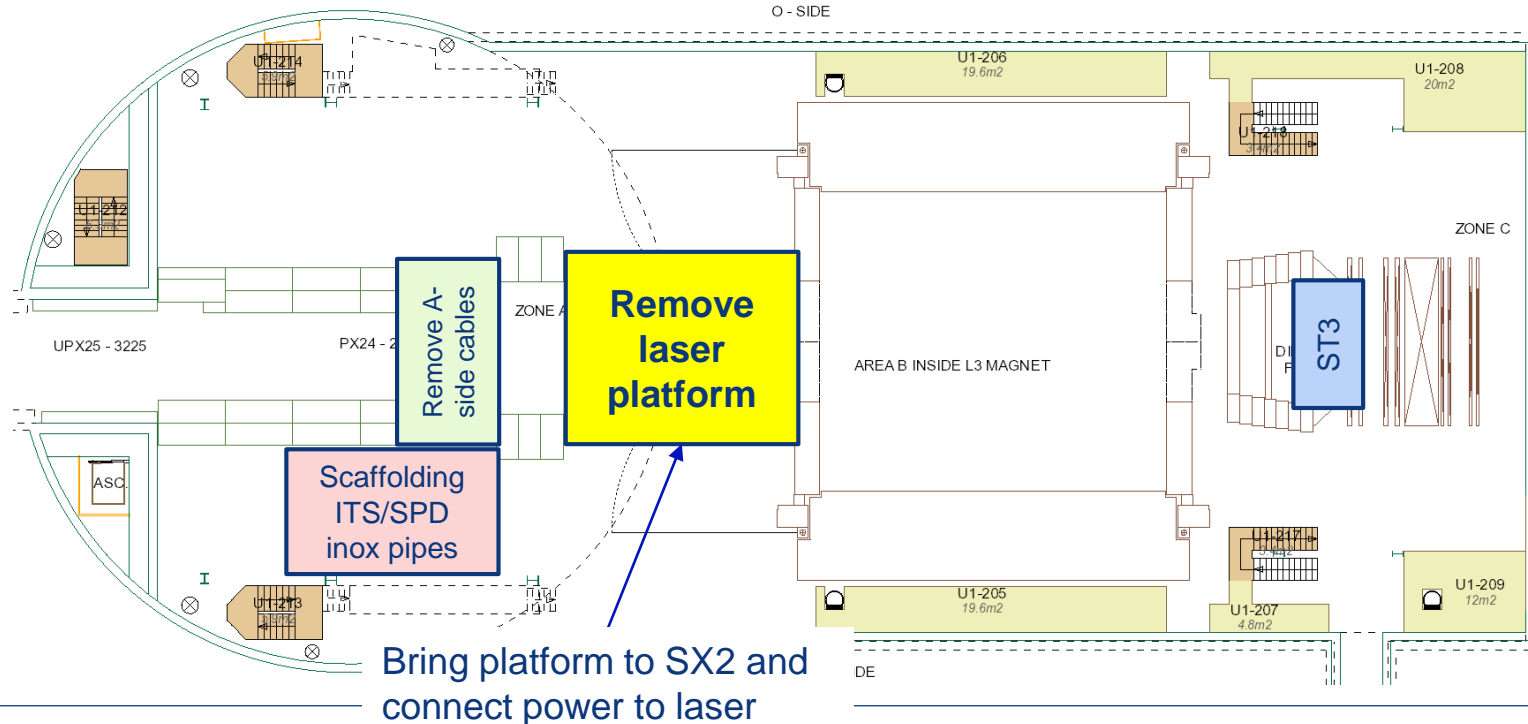
SX2: put Miniframe and MCTS on blocks

Remove  
staircase +  
fence

**Miniframe to surface**

# UX25 activities w2 – Thu 10 Jan 2019

EN-EL: install CR0 UPS switchboard





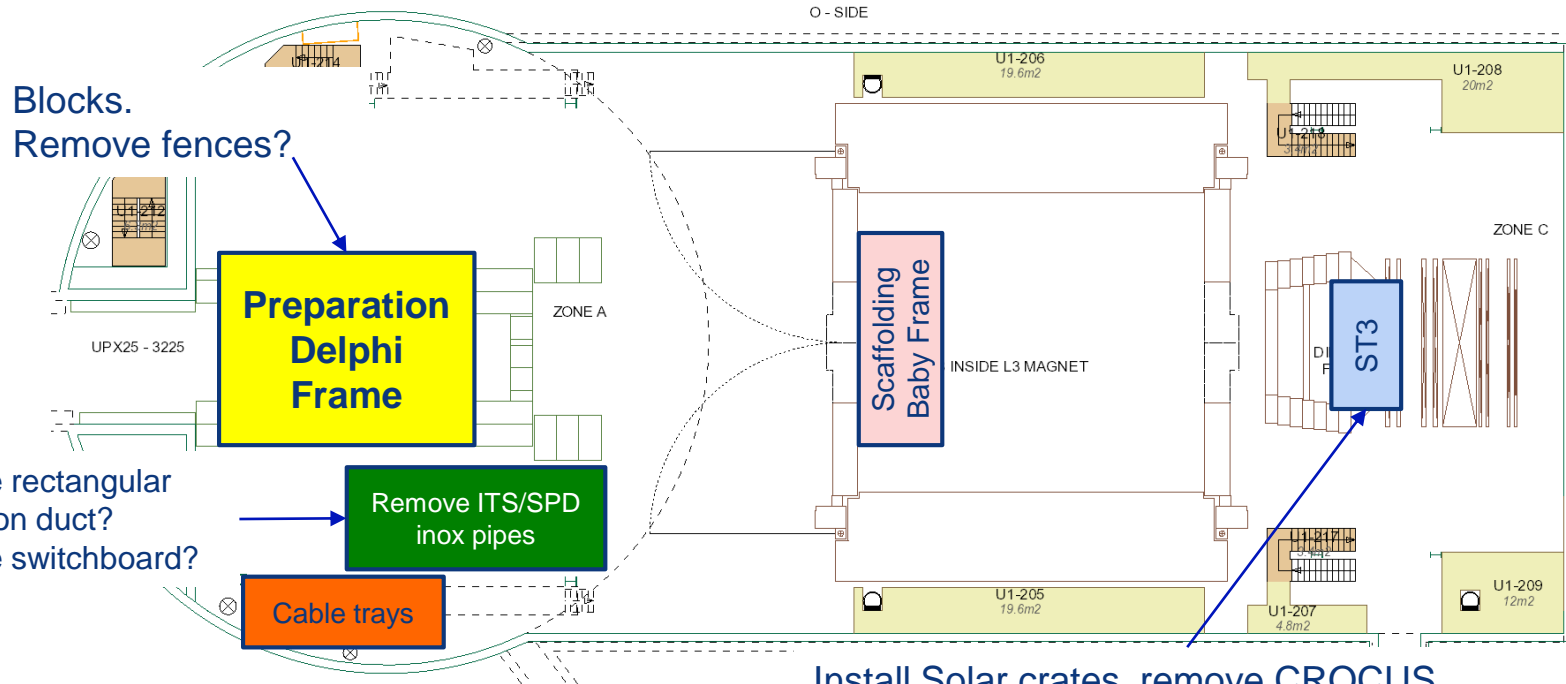
# Day-by-day sequence w3



# UX25 activities w3 – Mon 14 Jan 2019

Maintenance fire detection, whole week

Mount ITS table inside Delphi Frame in SXL2 (L.Simonetti), whole week (tbc)

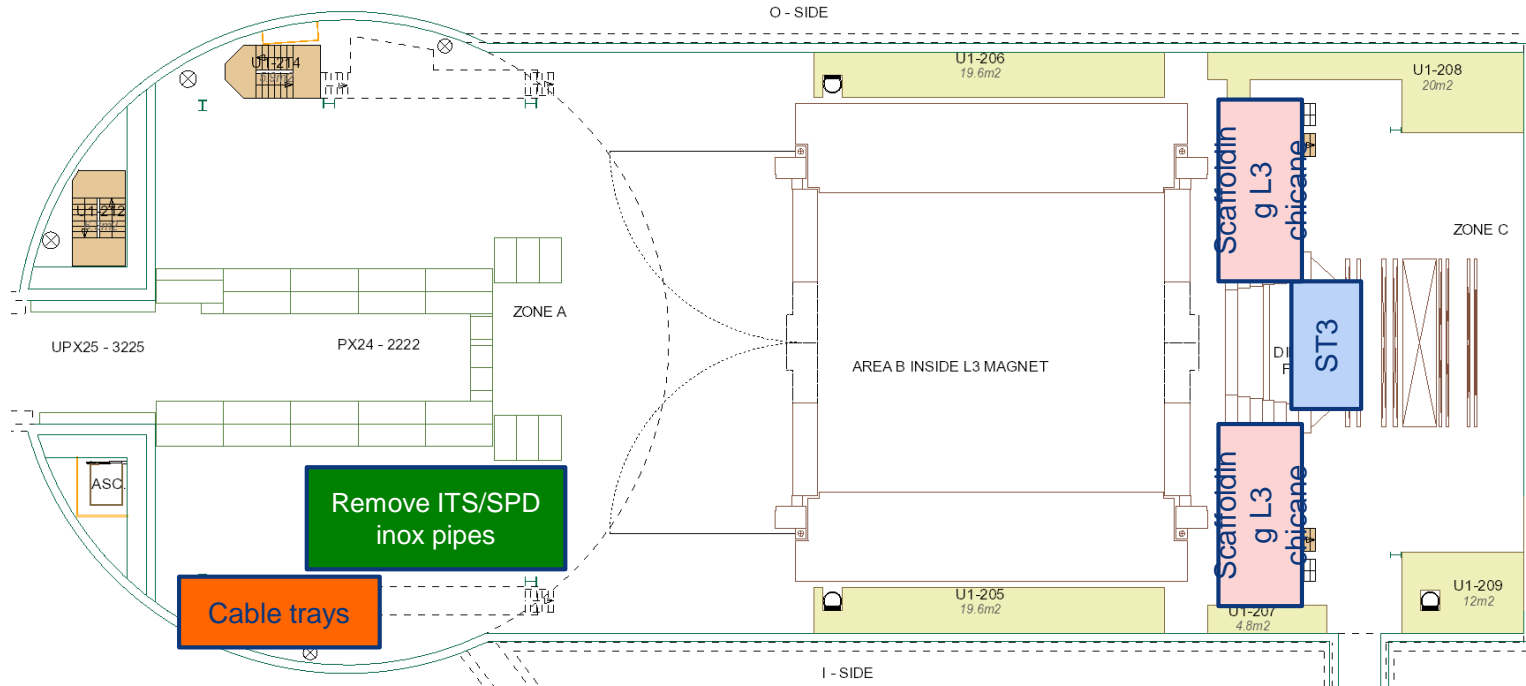


Install Solar crates, remove CROCUS, cables, boxes (nacelle, scaffolding)

# UX25 activities w3 – Tue 15 Jan 2019

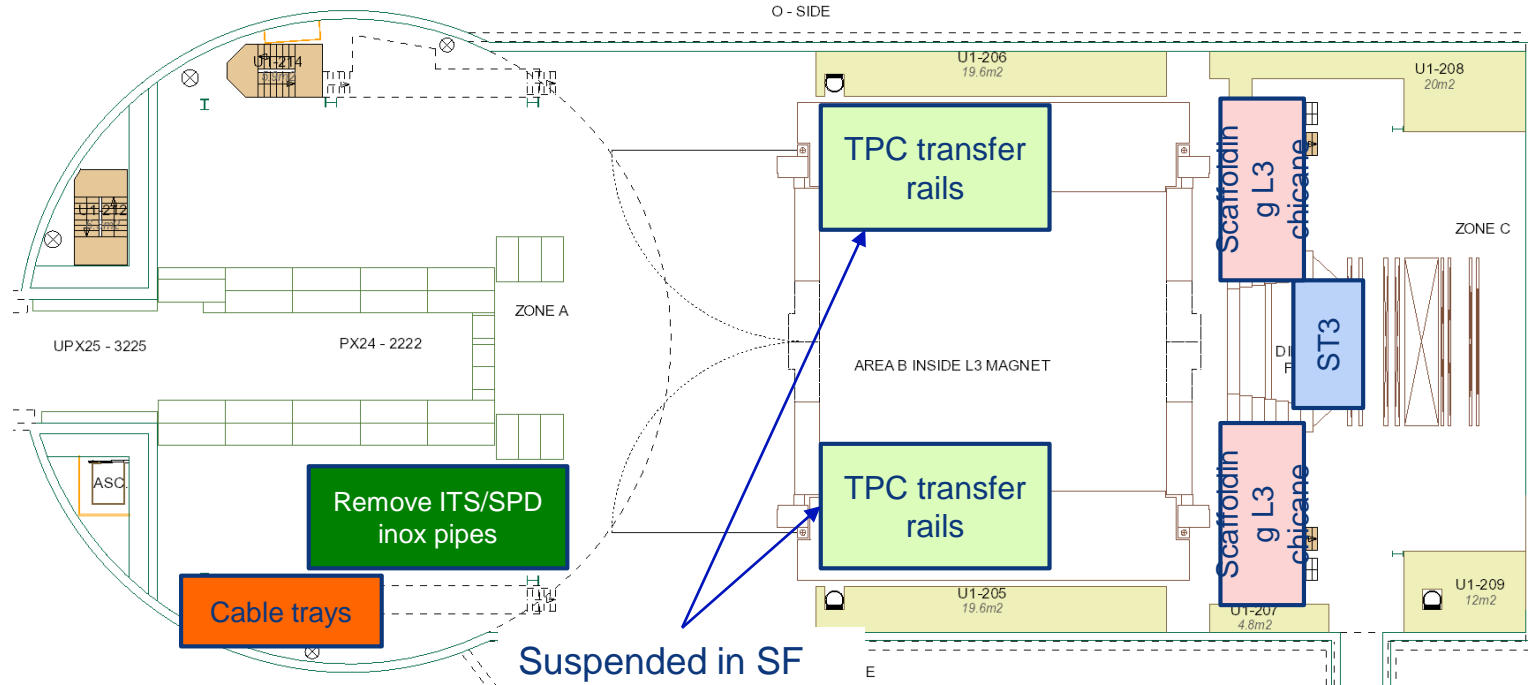
ALTEAD: transport Delphi Frame to SX2

ALTEAD: remove 13<sup>th</sup> PX24 beam (interference with Miniframe)



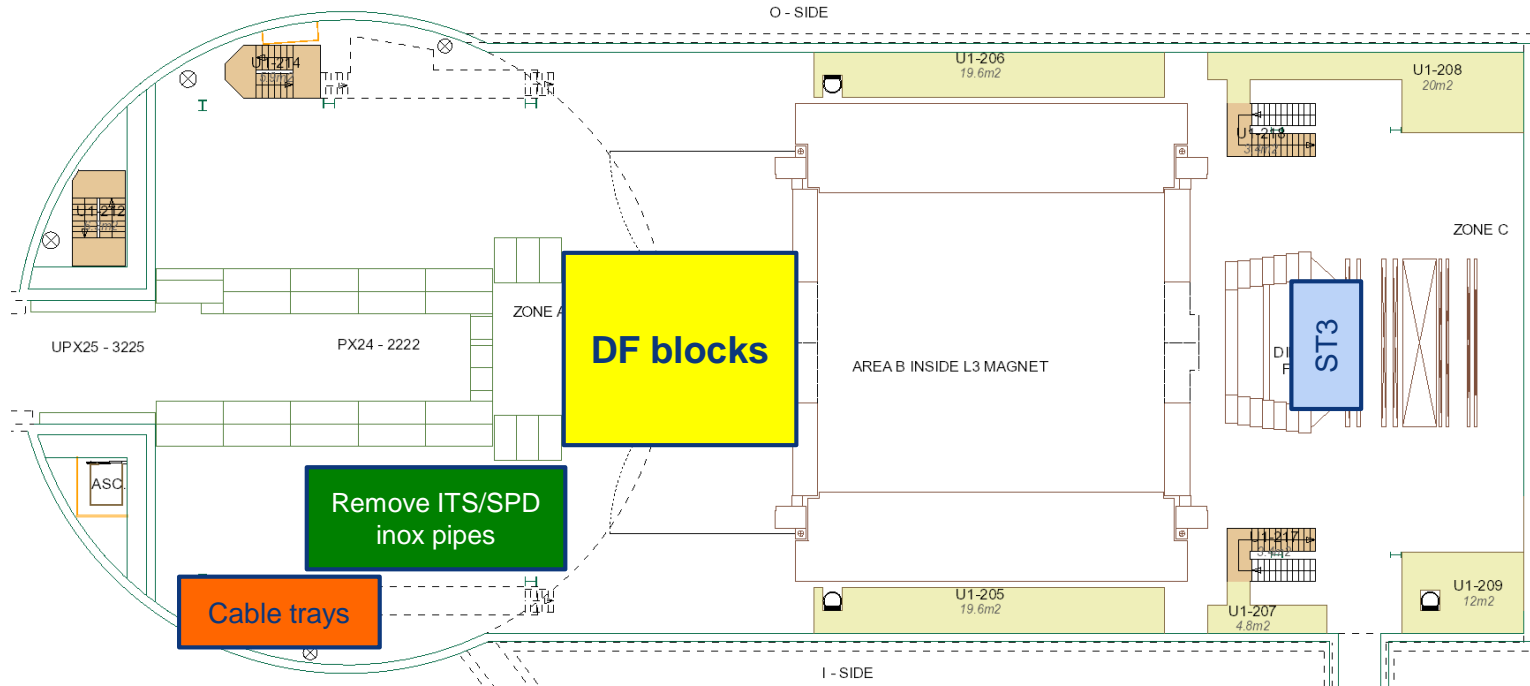
# UX25 activities w3 – Wed 16 Jan 2019

ALTEAD (SX2): dismantle ALTEAD room and displace cage



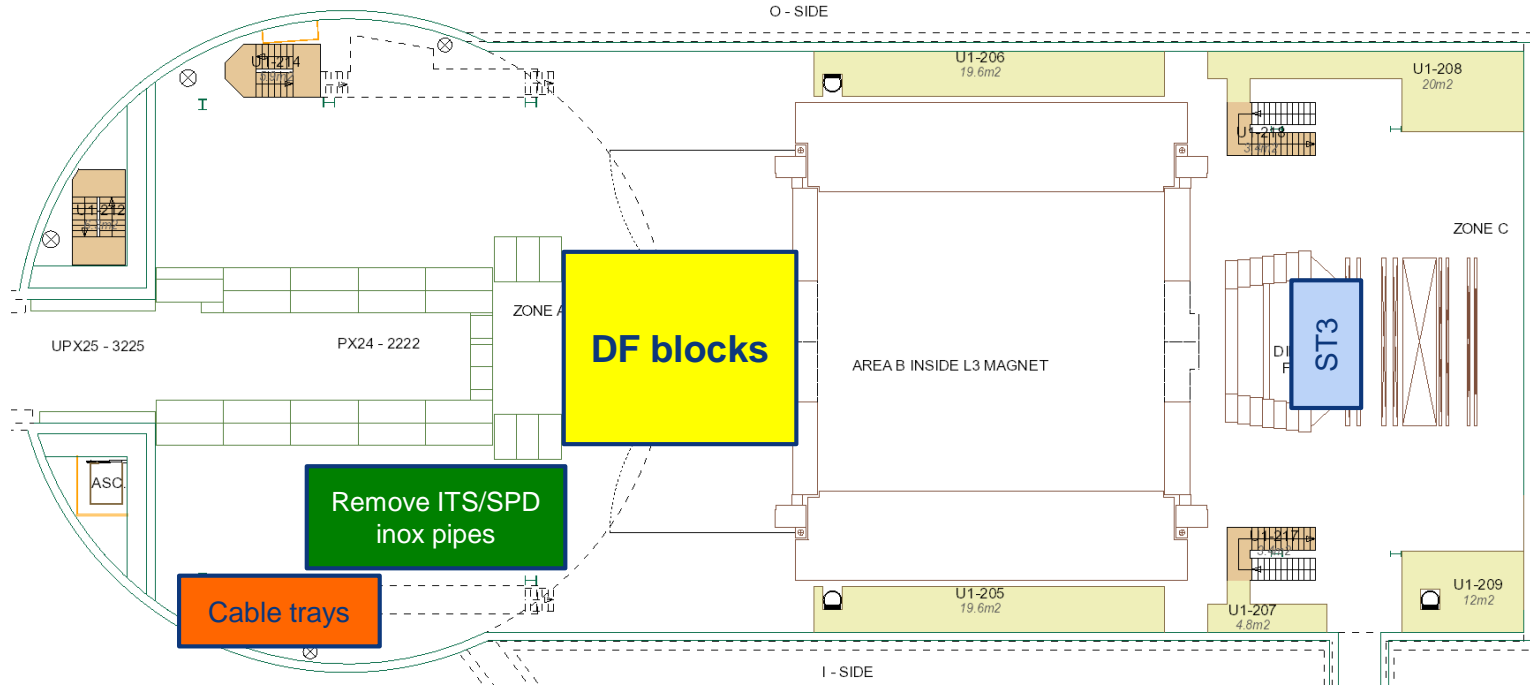
# UX25 activities w3 – Thu 17 Jan 2019

Ouvaroff: install scaffolding Miniframe (SX2)





# UX25 activities w3 – Fri 18 Jan 2019



# AOB

- No meeting next Friday, 21<sup>st</sup> December
- No daily meetings on Thu-Fri 20-21 December (restart 7<sup>th</sup> January)