

LS2 planning meeting

A.Tauro



CERN access in September

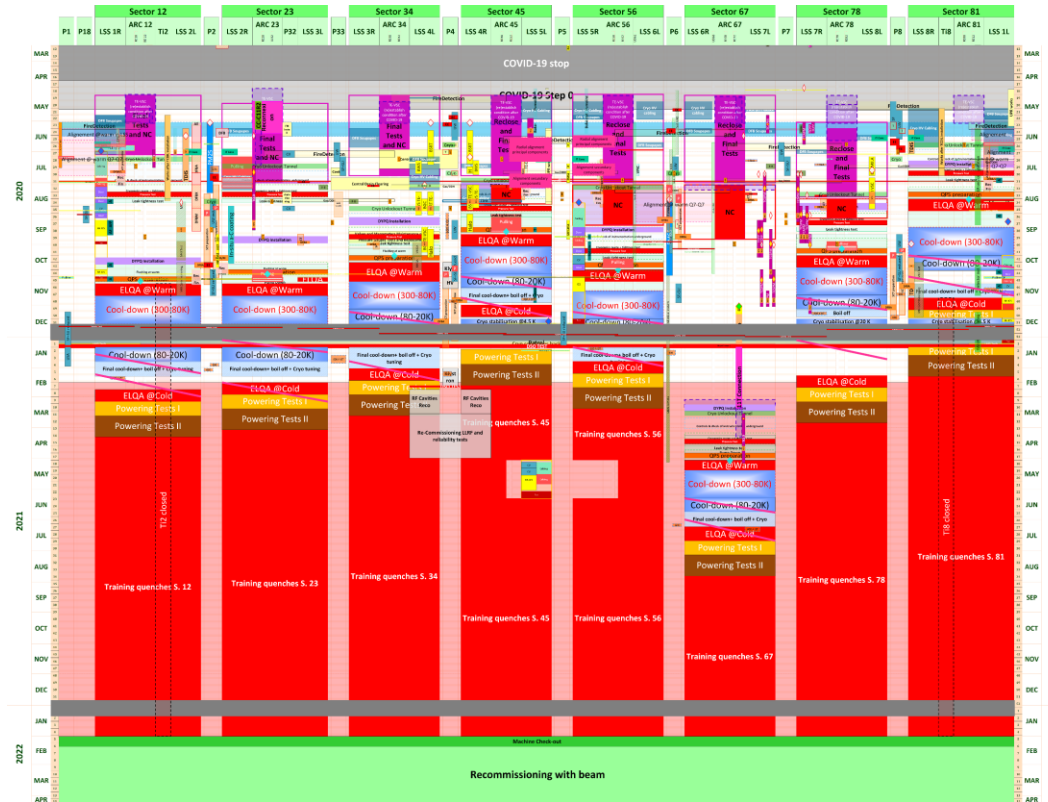
The access list will be replaced in a few weeks by a blocking list (containing: Retirees, club Members, family Members, anyone over 65, Colleagues in quarantine, confirmed/suspected cases). Exceptions (e.g. for 65+) will be possible through a standard EDH Access Request.

- Badging when entering and leaving the sites remains mandatory, to monitor the number of people at CERN.
- CERN continues the ramping up of the on-site presence with the aim of coming back to the pre-covid situation.
- The presence at CERN is required for at least 50% of the time. Telework is still possible at up to 50% over a week if it is compatible with the work program.

For any question related to access to CERN and white list please write to ALICE-covid19-coordination@cern.ch

LHC LS2 Baseline V3.0

LHC-PM-MS-0018 v.3.0



28.8.2020

LS2 planning meeting

Photos w32-35

Cleanroom roof opening (Mon 3 Aug)



TPC loaded on truck (Tue 4 Aug)



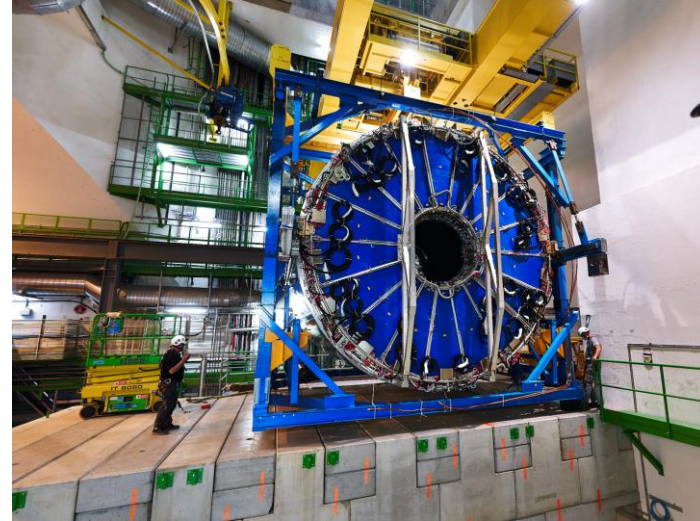
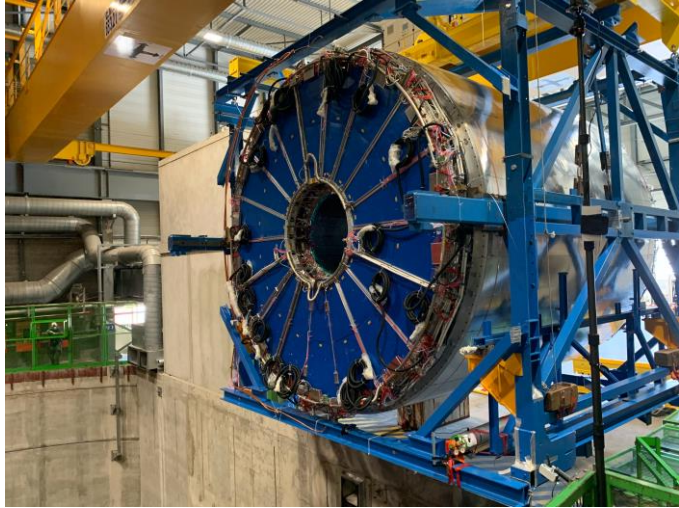
TPC moved to SX2 building (Tue 4 Aug)



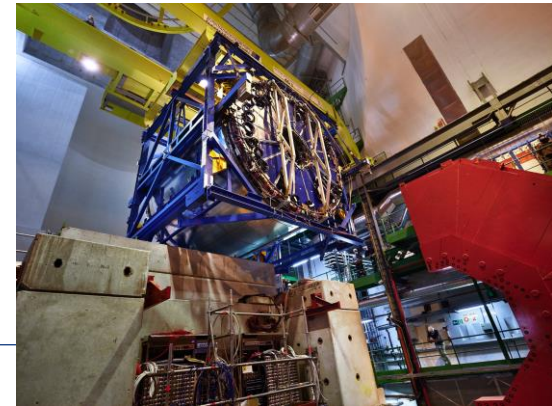
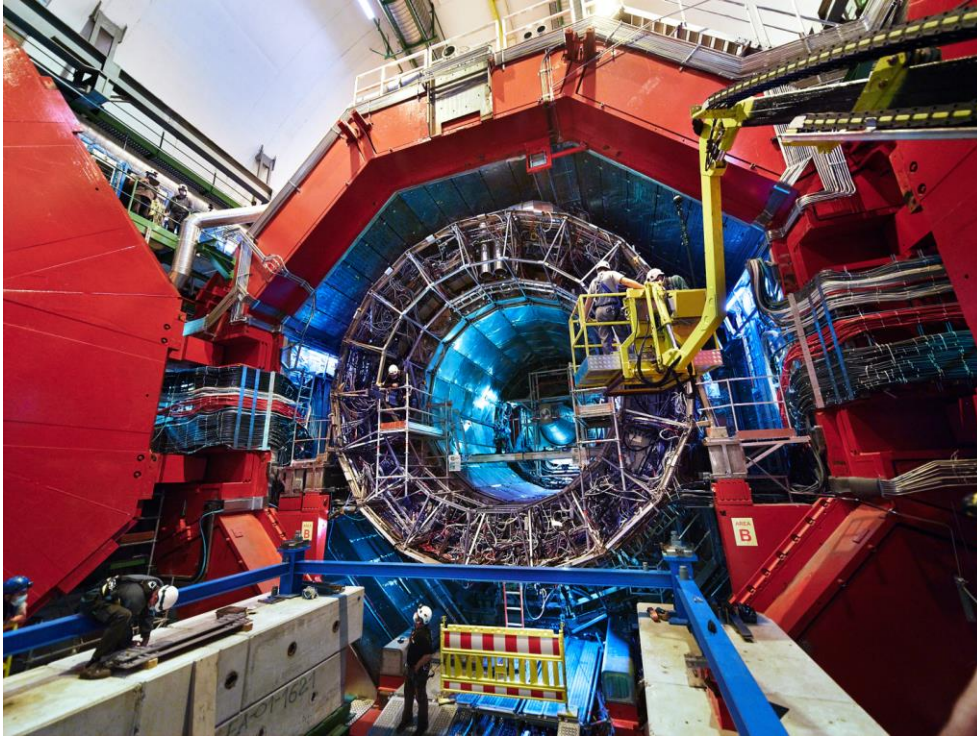
Remove PX24 ventilation duct (Wed 5 Aug)



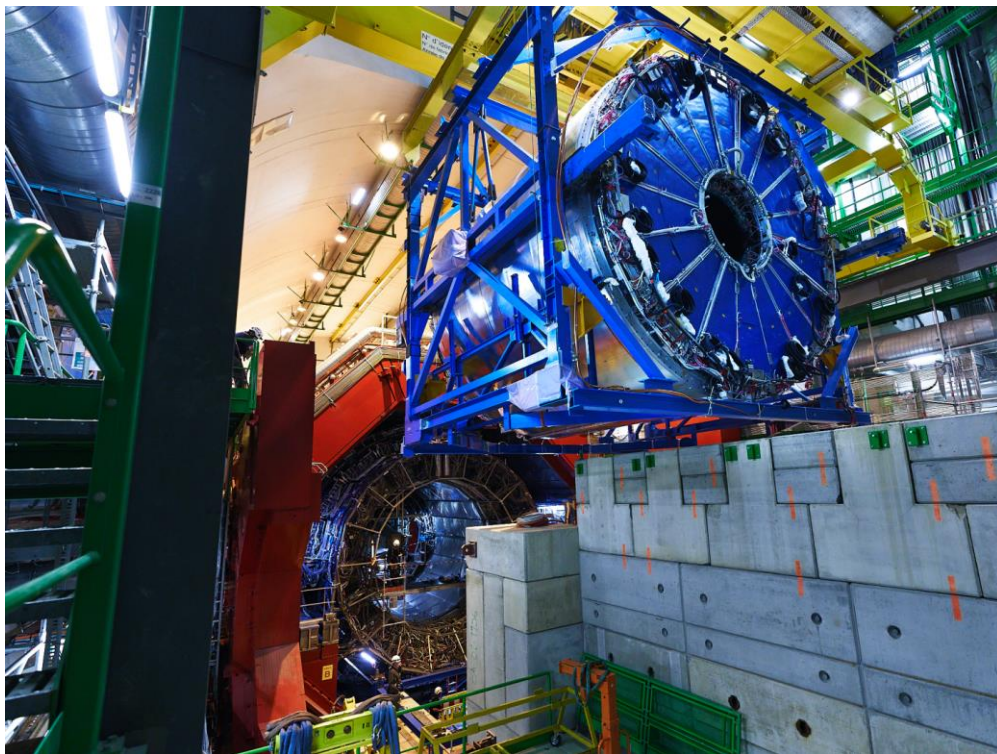
TPC lowered into PX24 shaft (Wed 5 Aug)



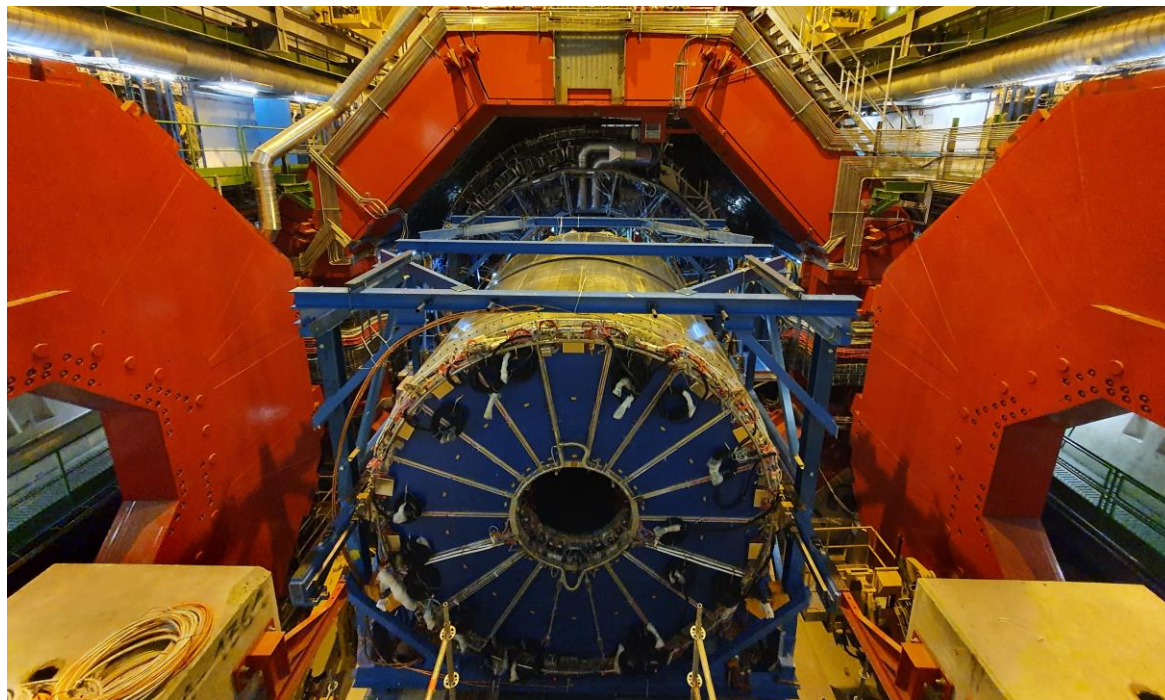
TPC moved in front of L3 (Thu 6 Aug)



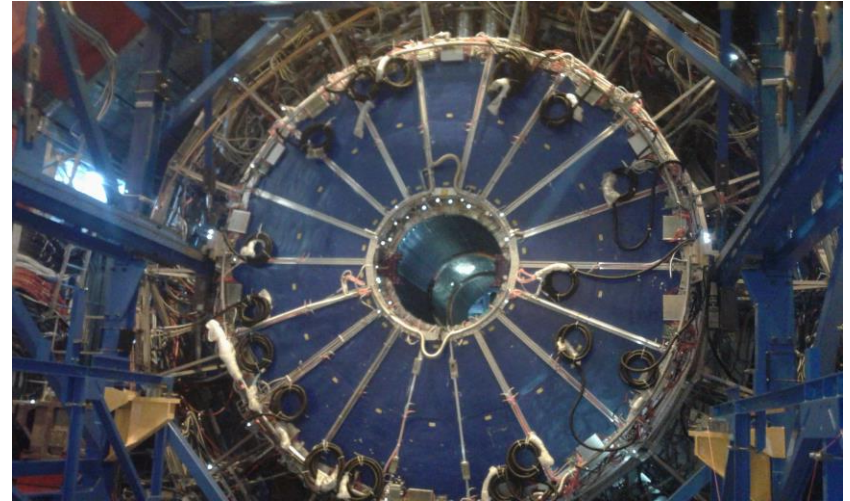
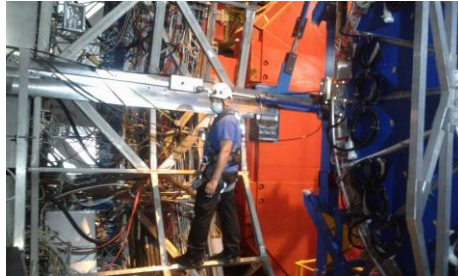
TPC moved in front of L3 (Thu 6 Aug)



TPC in place in front of L3 (Thu 6 Aug)



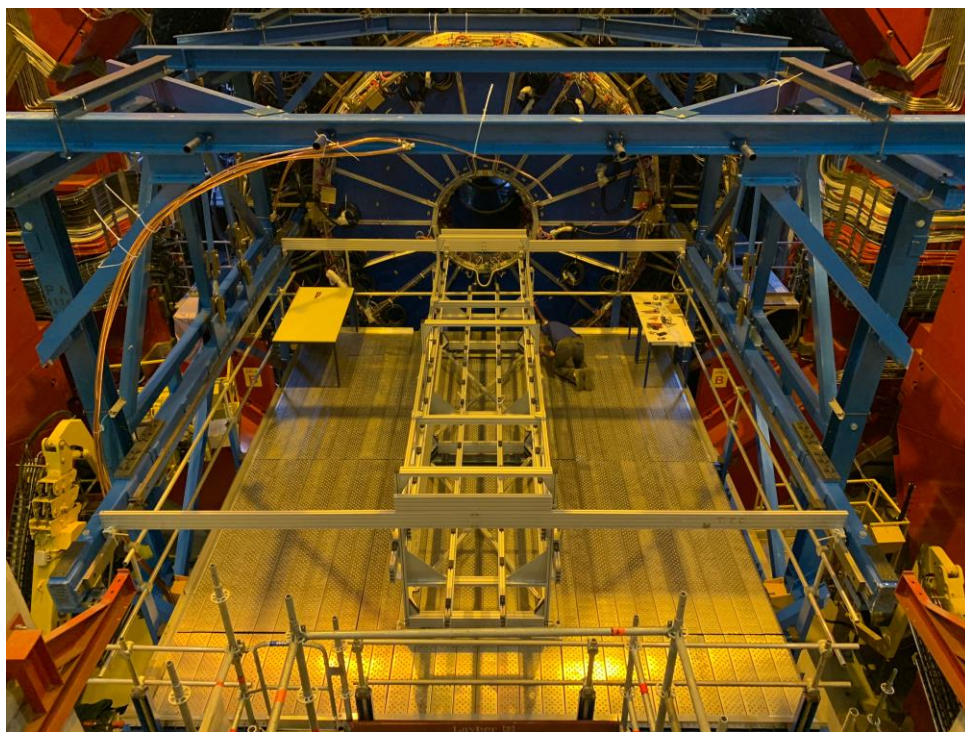
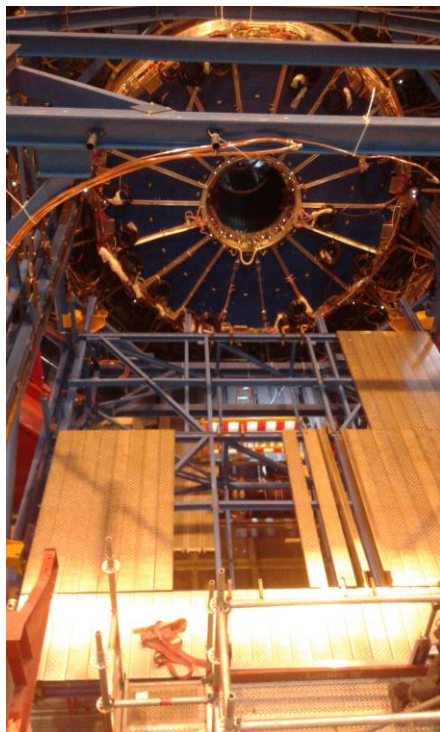
Delphi Frame alignment, move TPC to parking position (10-14 Aug)



TPC in parking position on Fri 14 Aug 18:30

One hydraulic jack broke during these operations, the TPC rested on a mechanical stop which Yannick had wisely foreseen.

Installation Delphi Frame floor and ITS table (17-21 Aug)



Cage transportation to P2 (17-21 Aug)



Packing in b.167

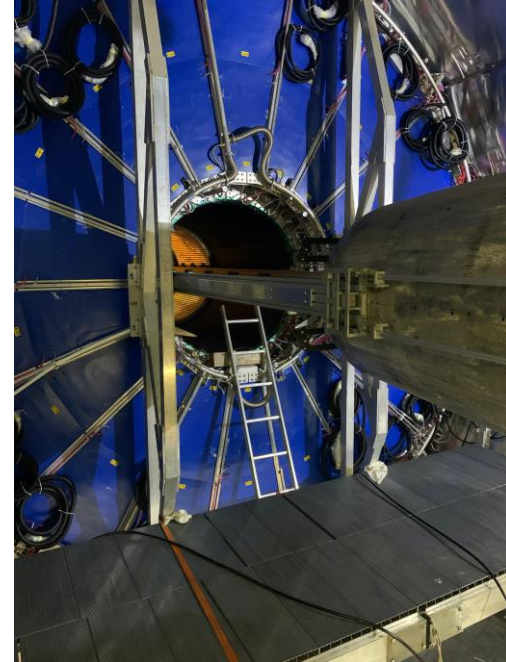


Opening at P2

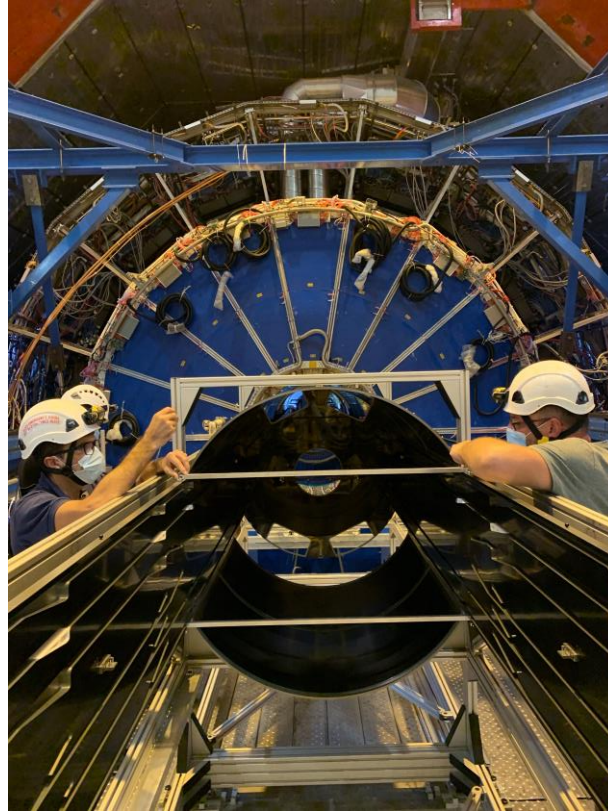
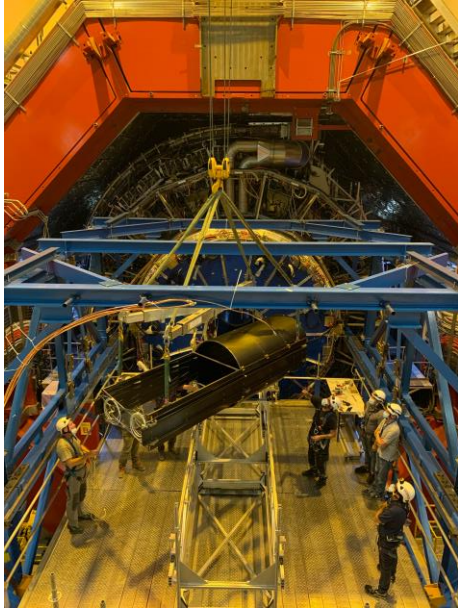


Cage sitting on low-beta platform after final checks

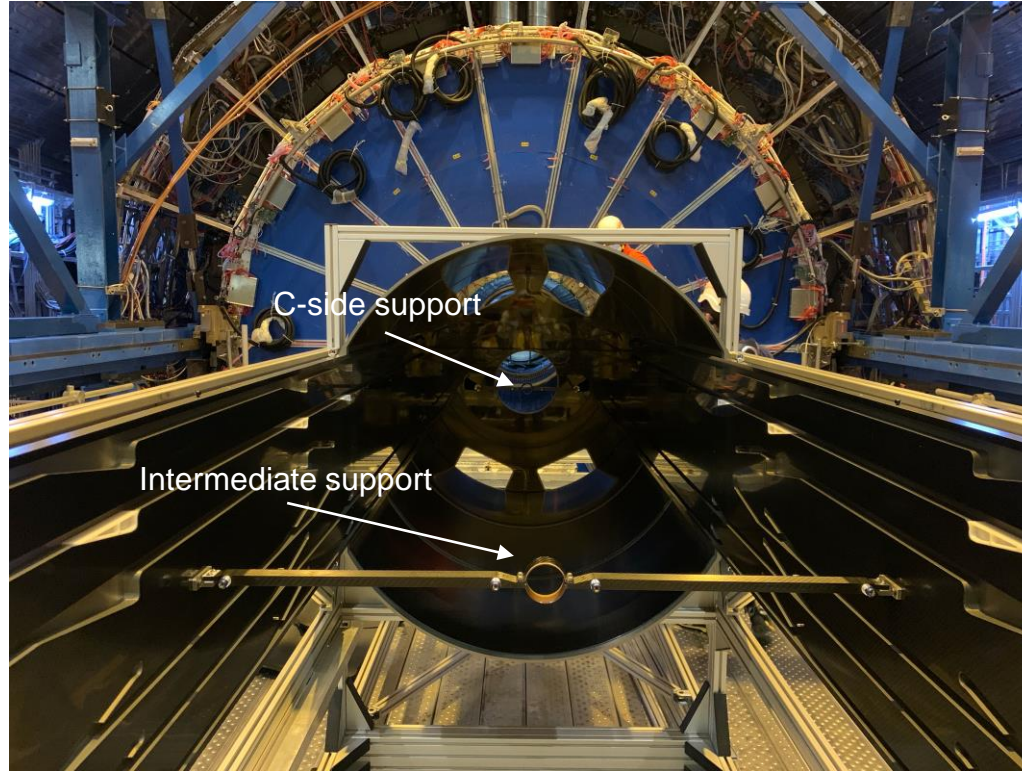
Installation ITS temporary rails (Tue 25 Aug)



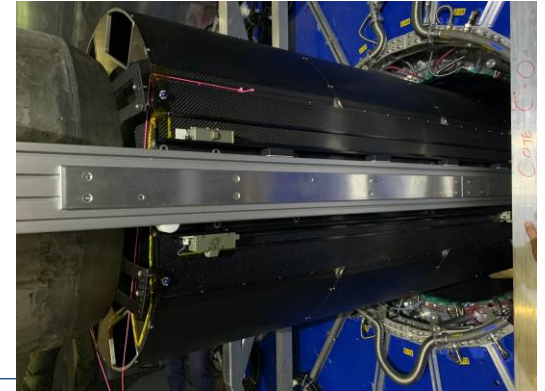
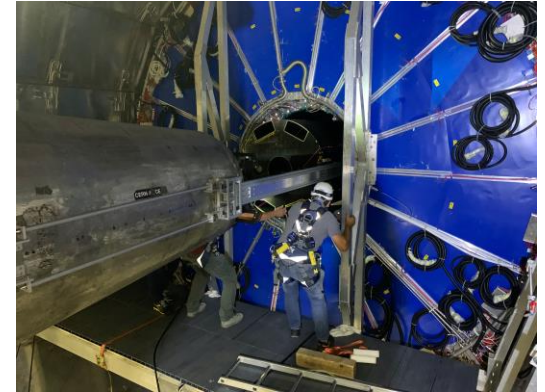
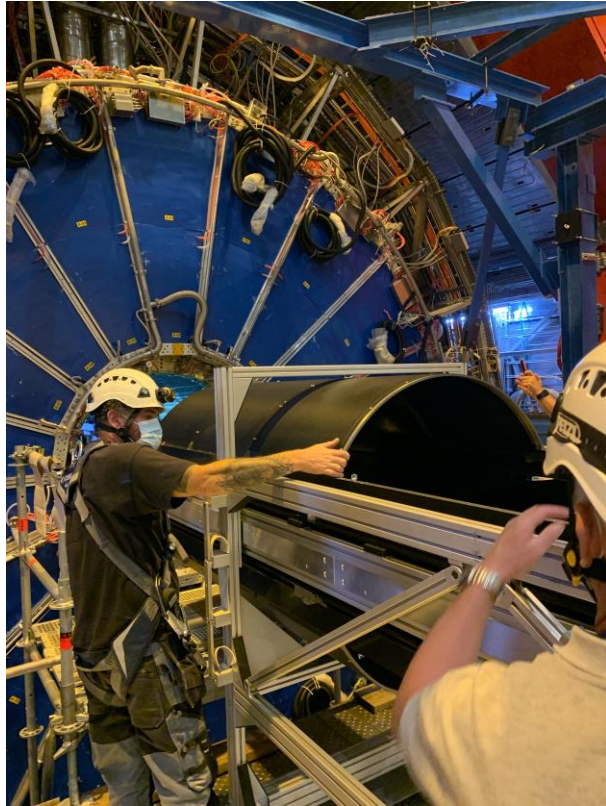
Cage installation inside ITS table (Tue 25 Aug)



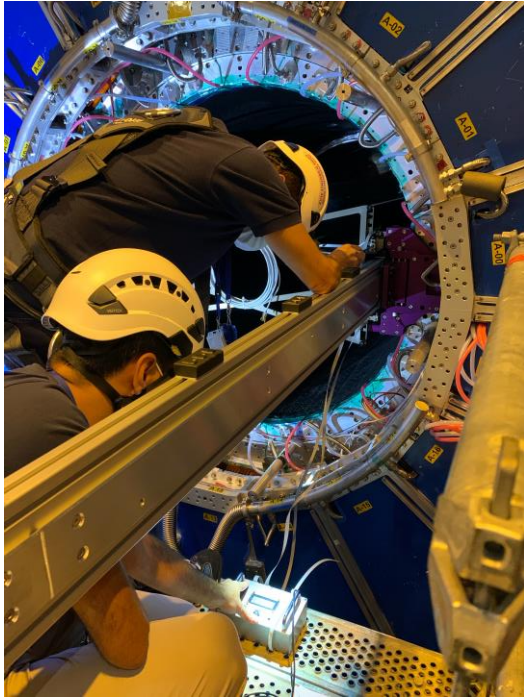
Central beampipe supports in place (Tue 25 Aug)



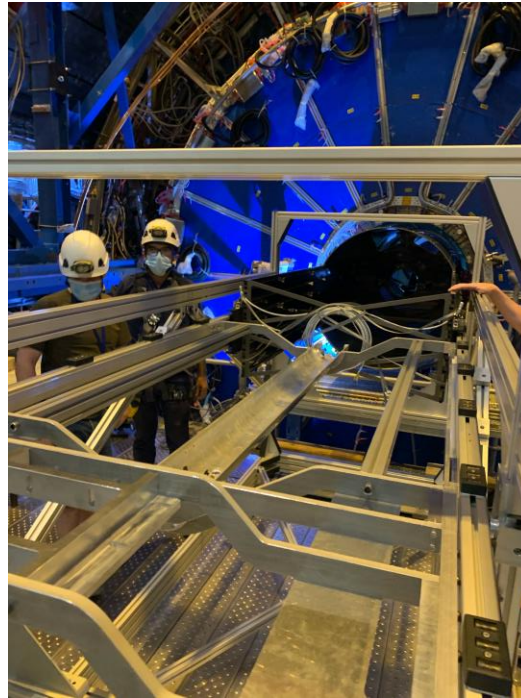
Cage insertion test (Tue 25 Aug)



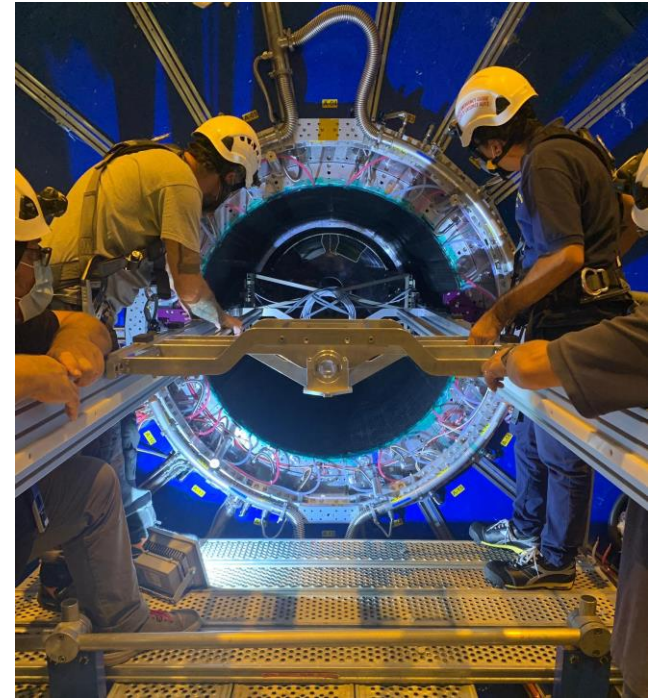
Installation cage at IP (Wed 26 Aug)



Cage resting inside TPC (test)



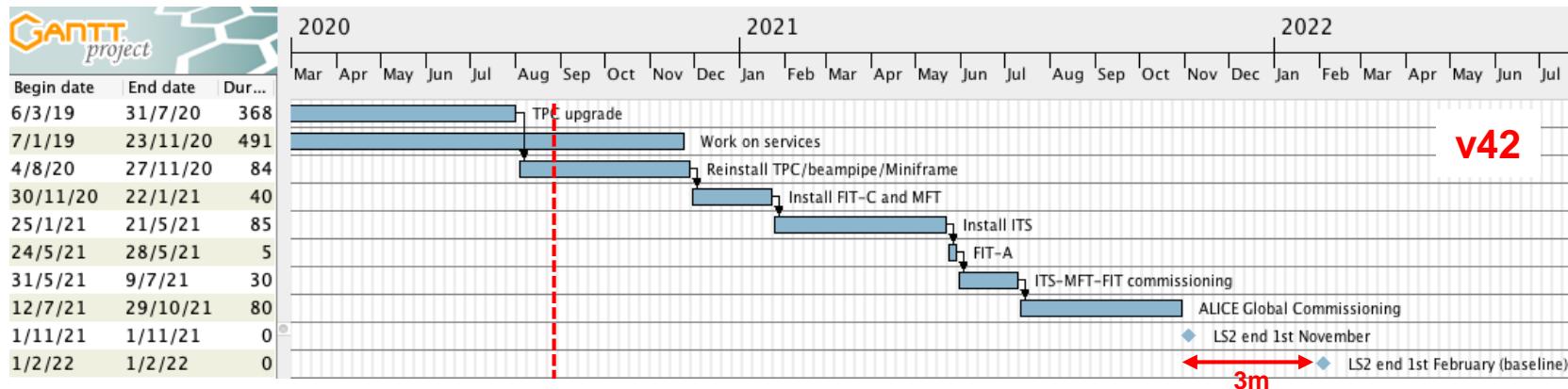
Temporary A-side beampipe support



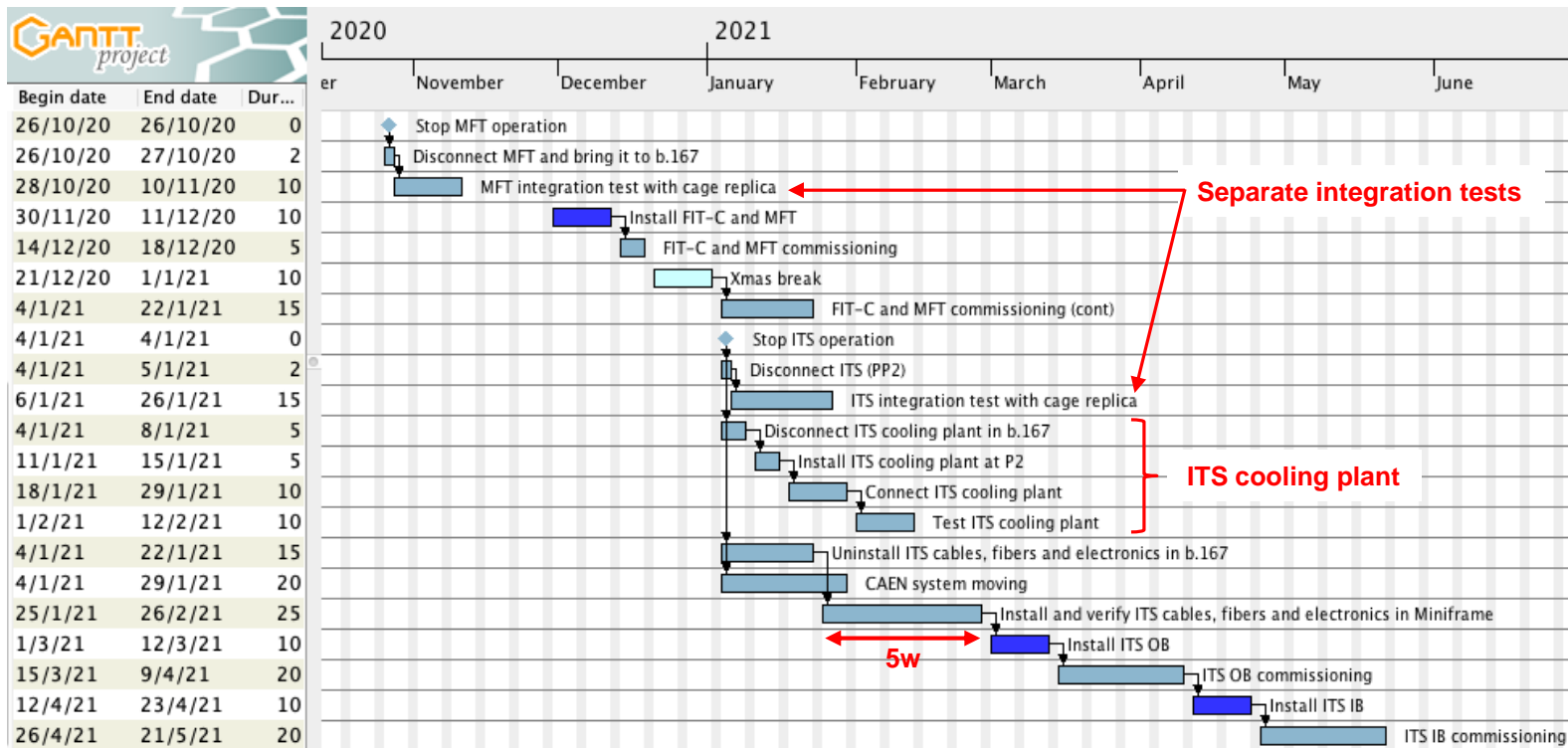
Move cage to IP

Detector installation sequence v42

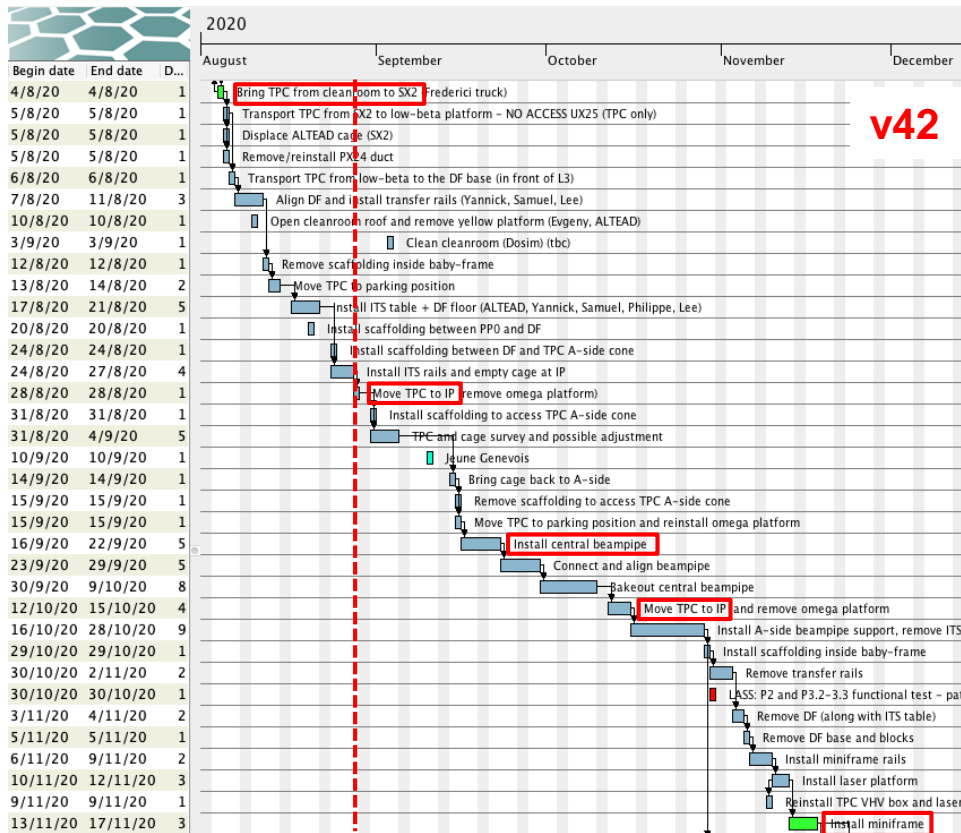
- **Schedule v42:**
 - Stop ITS operation on Mon Jan 4th 2021 → ITS installation extended by 5 weeks to put ITS services in the cavern (85d vs 60d)
 - Stop MFT operation on Mon Oct 26th
 - 16w global commissioning at the end
- RB24 beampipe reinstalled in June 2021 → OK to inject low intensity beam by September 2021
- This plan foresees no contingency and **3 months contingency** with respect to the LS2 end date of 1st November 2021 and **1st February 2022** respectively



Detailed MFT and ITS installation plan



Detector installation sequence



Aug 4th – transportation TPC to SX2

Aug 5th – Sep 15th – reinstall TPC
Cage insertion test, TPC moved to IP, adjusted and put back to parking position

Sep 16th – Oct 9th install central beampipe

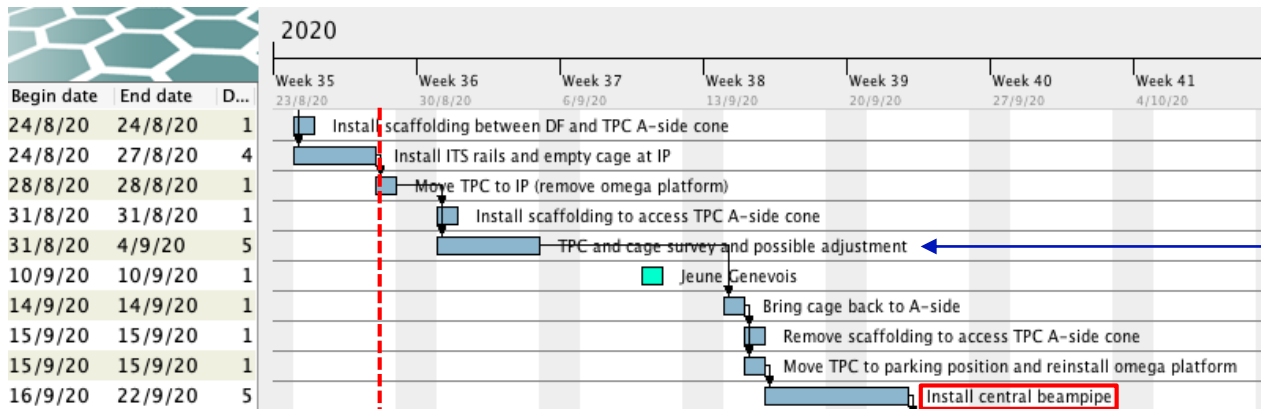
Oct 12th – 15th – move TPC to IP – start TPC connections

Oct 16th – Nov 12th – prepare miniframe installation

Nov 13th – 17th – reinstall miniframe



Zoom on coming weeks



Today (ongoing):

- Move **TPC to IP**

Next week (w36):

- Install scaffolding
- Rest cage to TPC
- Remove temporary rails
- Survey TPC and cage
- TPC (and cage) adjustment (if needed)
- Cage adjustment (if needed)
- Load cage and repeat survey
- Cage unloading

Week 38:

- Bring cage back to A-side
- Remove scaffolding
- Move TPC to parking position
- Install **new central beampipe**

Key dates



Activity	v42
Move TPC to SX2	4 Aug 2020
Install TPC (parking position), cage insertion test	5 Aug – 15 Sep
Install central beampipe	16 Sep – 9 Oct
Move TPC to IP	12 – 15 Oct
Install Miniframe	13 – 17 Nov
FDD-C installation	4 – 15 Jan 2021
FDD-A installation	4 – 15 Jan 2021
MFT & FIT-C installation and checks	30 Nov 2020 – 22 Jan 2021 Disconnect MFT 26 Oct
ITS installation and checks	25 Jan – 21 May Disconnect ITS 4 Jan
FIT-A installation	24 – 28 May
ITS & MFT commissioning time	1 ½ months (6w)
ALICE global commissioning time	3.5 months (16w)
End of LS2 – stop UX25 access - baseline (contingency baseline option)	1 Feb 2022 (3 months)
End of LS2 – stop UX25 access - option 1 (contingency option 1)	1 Nov 2021 (0 months)



Other TPC items

- Cleanroom emptied (yellow-platform, blocks, etc)
- Laser 1 brought to cleanroom (to be serviced)
- Preparations for TPC chamber irradiation test ongoing
- Preparation to reinstall green crane (on blocks) ongoing
- Cleaning (Dosim) will be done after putting back the green crane

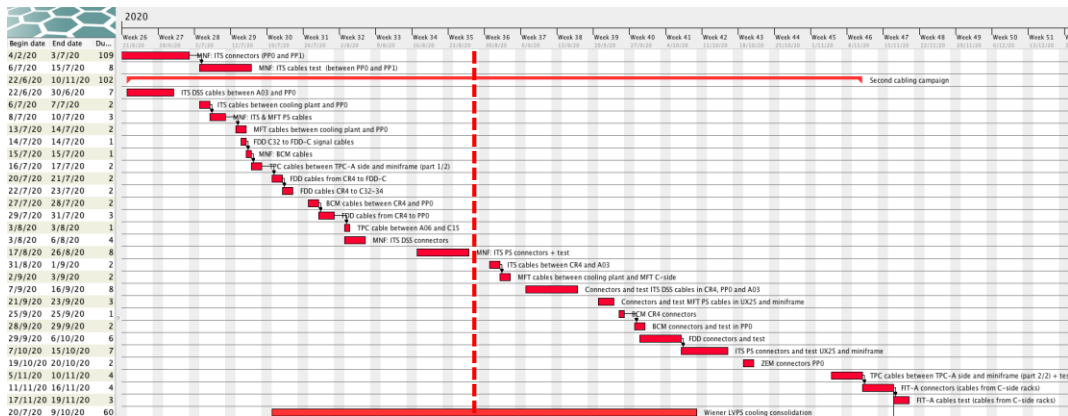


EN-EL interventions

- 18kV, 3.3kV and LV network maintenance: 20-24 Jan 2020 – Done
- AUG P2: Monday 27 Jan 2020 – Done
- Auto transfer test: 20 Jul 2020 → Done
- Test secours (10 min at 6:00 AM): 30 Jul 2020 → Done
- Maintenance 66kV transformer (P2): 3-7 Aug 2020 → Done
- AUG Meyrin (zone administrative): 4 Sep 2020 (tbc)

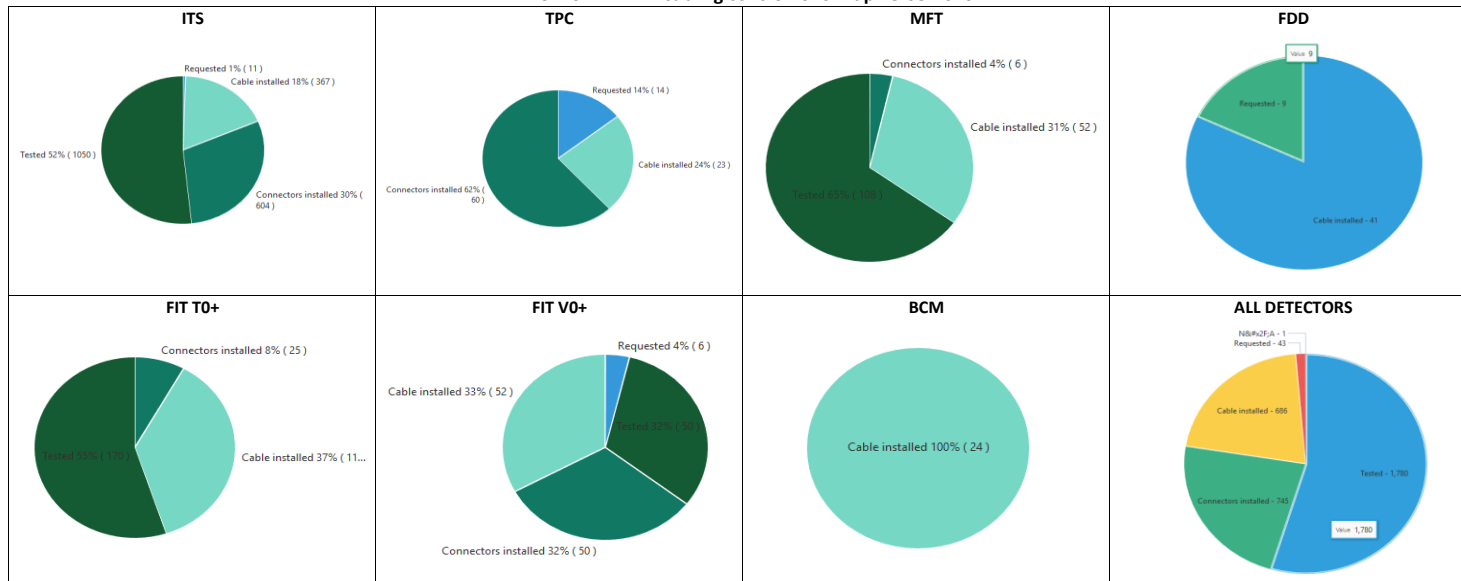
Cabling status

- Miniframe:
 - All cables pulled
 - ITS/MFT P sensor connectors ongoing → completion by mid September
 - All cables/fibers will be folded back inside the Miniframe in October, in preparation for the Miniframe installation in the UX25 cavern
- Cavern:
 - 98% pulled
 - Still some connectors and test remains to be done → completion by October-November



Cabling progress

ALICE LS2 - EN-EA cabling control follow-up 28-08-2020



3254 cables in total:
 Tested: 55%
 Connectors wo test: 23%
 Cable only: 21%
 Cables to be installed: 2%

ITS and MFT inox pipes

- Installation of 8 MFT pipes (MFT RO crates) → ongoing
- Things to be done:
 - Rinse cavern and Miniframe pipes with water
 - Connections to ITS cooling plant will be done by Rampower after installation of ITS cooling plant in January



Optical fibers (EN-EL)

- Done:
 - Installation and test **TPC** fibers between CR4 and CR1
 - Installation and test fibers for **IT** (for upgraded network) from CR2 starpoint to CR1 and to CR3
 - Procurement 2 x **FDD** optical cables (requested in March 2020) → fibers delivered. To be installed (ALICE)
 - Optical measurement fibers SR2-SX2
- To be done:
 - Test **HMPID** fibers → Giacinto to assess situation
 - Installation 6 trunk cables between IT1-IT2 (CR0) → installation w46 (requires to open 2 blocks)
 - Cleaning **TRD trigger fibers** connectors and replacement of damaged ones → Anastasia to assess situation
 - Installation TPC optical fiber in the cavern between A and C-sides → installation w39
 - Unfold and connect **ITS** and **TPC** trunk cables → after Miniframe installation in November

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 w34 to w37 2020. **Stop UX mixed water on Monday 7 September 2020**
 - SF+SU: weeks 44-47/2020: cleaning towers (stop SF 1 week) + 1 day **stop all cooling UX** + 1 day **stop SXL2 cleanroom ventilation**
- **Ventilation:**
 - ARC: done
 - SG2:
 - UX25 cavern:
 - MCH and MTG:
 - L3: replace extractor → done w31/2020 (cut flammable gas)
 - ITS: → will be done before end October

CR3 status (A.Augustinus)

- February
 - Modify water circuit (add TA valves CR3 and CR4) – kept DCS up and running – DONE (10.02 – 21.02)
 - Additional rack installed for extension of main network starpoint outside CR2
 - Arrival of new racks (25.02)
 - Installation 1st row of racks (26.02)
- March, April, May
 - *COVID closure*
 - Arrival of new servers (28.04, originally foreseen end of March)
 - Installation of the servers in the new racks – DONE (finished 15.05)
 - Remove TOF cluster – DONE (26.05), last racks removed – DONE (28.05)
- June
 - Installation of 2nd row of new racks - DONE (03.06)
 - Re-installation TOF cluster – DONE and tested (08.06)
 - Installation network fibres for network – DONE (25.06)
- July – August – September
 - Adapt electrical installation for (extended) starpoint outside CR2 – DONE week 28
 - Reconnection new racks to electricity – DONE week 30
 - Installation of network infrastructure (some network interruptions to be foreseen, details to be defined with IT-CS) – dates t.b.c.
 - Temporary, network solution available, start commissioning new servers in August
 - Migration from old servers to new servers (first central systems, then detector systems)
- October – November
 - Removal of old servers and last old racks

Racks status

- Racks currently powered on:
 - HMPID: I01, I02
 - PHOS-CPV: A16, A17
 - CTP: C21, C22, C24, C25, C26, C27 (CTP) (and VME crates on)
 - MCH: C08, C09, C10, C11, C36, C37, C38, 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

Consolidation Wiener LVPS

- 193 water cooled power supplies in total (LV and VME)
- 22 LV supplies done (MCH, TRD)
- Rework in batches (~15 units/week), to be started next week (wk 32):
 1. Disconnection and deinstallation → detectors
 2. Conditioning → ALTEAD + P2tech
 3. Transport to EN-EA (Meyrin)
 4. Rework and test → EN-EA + P2tech (Evgeny and Philippe)
 5. Transport to P2
 6. Reinstallation → detectors
- Preliminary plan is drafted, first batches (TRD) are prepared. All supplies would be done by mid-October
 - Andre will contact each detector to establish a detailed planning

	LV	VME
CTP		11
EMC	8	
FIT (AD,T0,V0)		6
HMPID		2
MCH	17	
MTR	8	2
PHOS	9	1
Spare VME		2
TOF		3
TPC	22	
TRD	101	1
	165	28



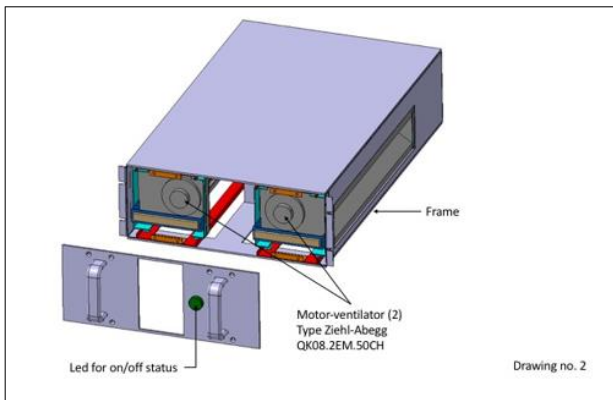
6 modules Wiener LVPS



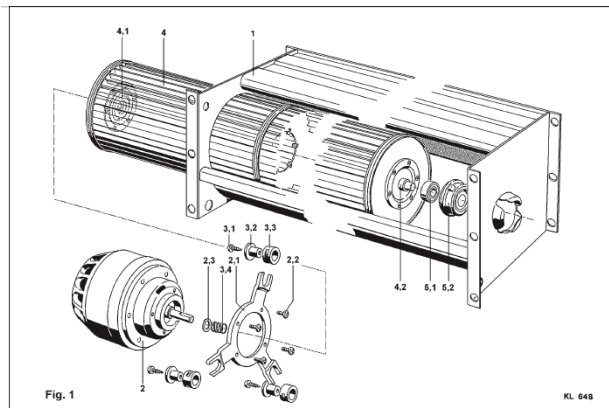
TRD batch already prepared

New rack turbines

- All 85 units (200kCHF) ordered: <https://edh.cern.ch/Document/SupplyChain/MAG/8289388>
- Technical specifications: EDMS 1963491
- ALICE units will be made available in October 2020
- Installation immediately afterwards, transparent for users (ALTEAD + P2 tech.)



Ventilation unit front view



Pluggable motor

Other activities

2020:

- Renovation PX24 access system (PAD-MAD): w33-34 (10-21 Aug) → done
- Renovation PM25 access system (PAD-MAD): w41-43 (5-23 Oct)
- LASS functional test: no access to UX25 on Friday 30 Oct 2020 whole day (weekend 31 Oct /1 Nov as contingency)
- LASS global verification of entire LHC: 1 day no access to UX25 (date tbd)
- BIW test: ~~no access underground on 5 and 6 Oct 2020 from 18:00 to 00:00~~

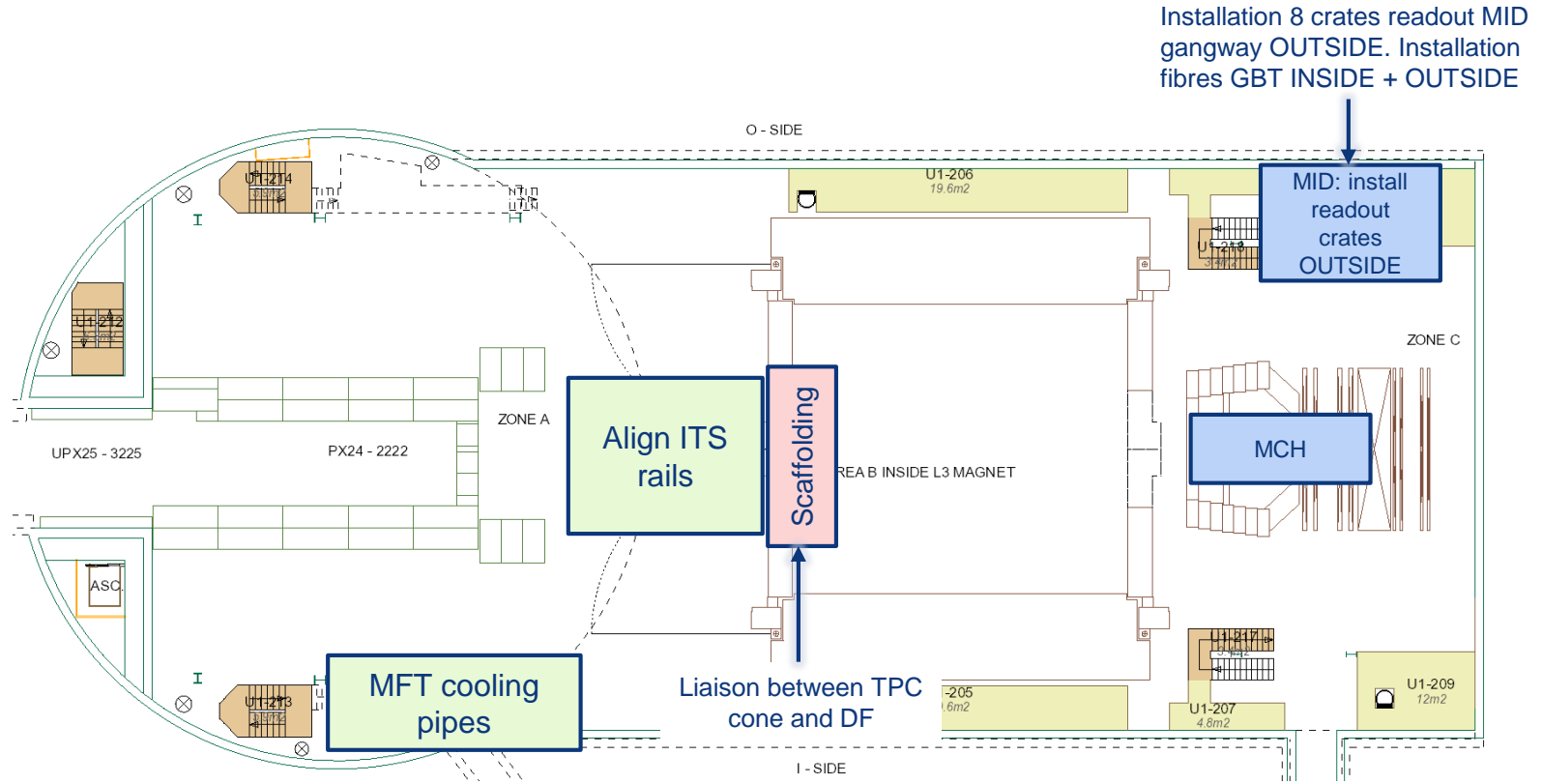
2021:

- DSO test for powering permit: w1 2021 (date tbd) (needed to start LHC powering test)
- DSO test for RF recommissioning LSS4: w7 2021
- DSO test for powering permit, following UPR53 installation: date tbd
- DSO test for beam permit: date tbd
- LHC sector test (beam through ALICE): ~~no access to UX25 from 26 to 29 March 2021 (date tbd)~~

Day-by-day sequence w35



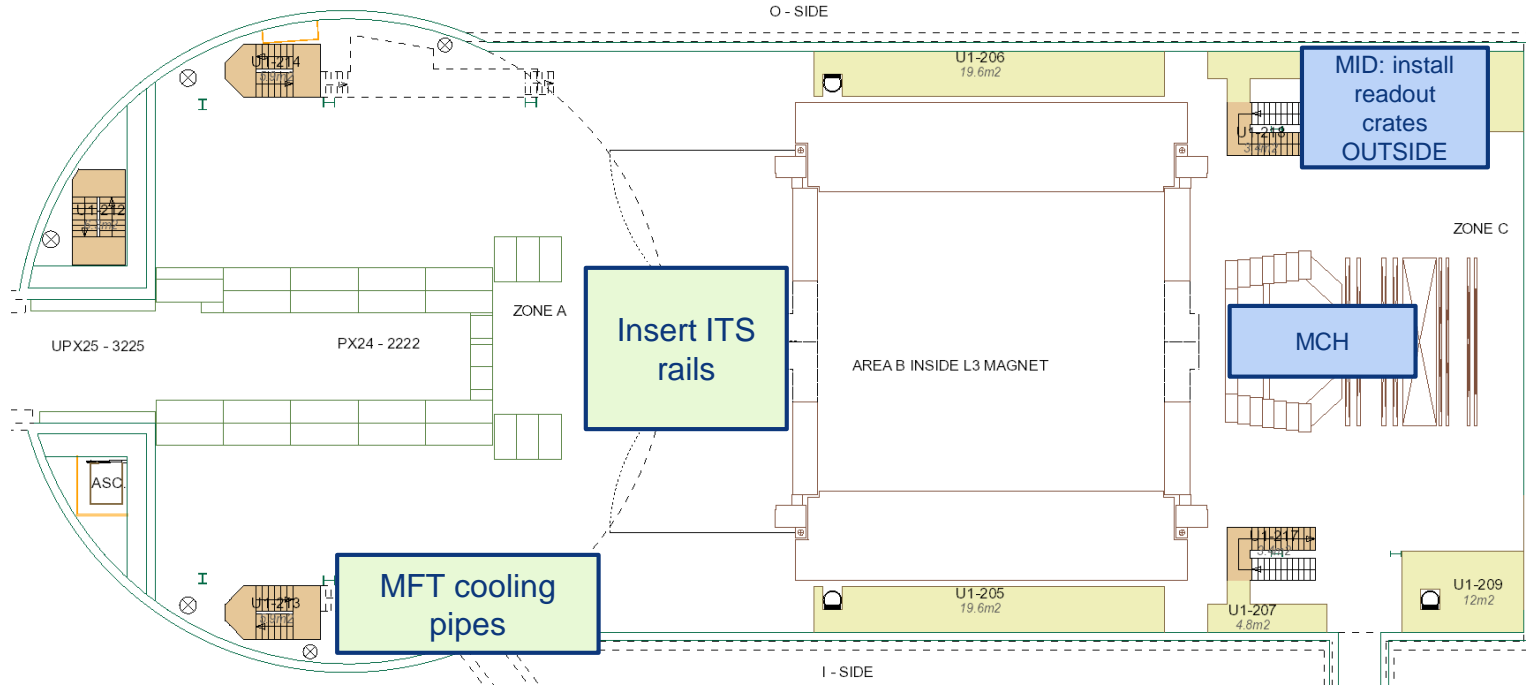
UX25 activities w35 – Mon 24 Aug 2020



UX25 activities w35 – Tue 25 Aug 2020

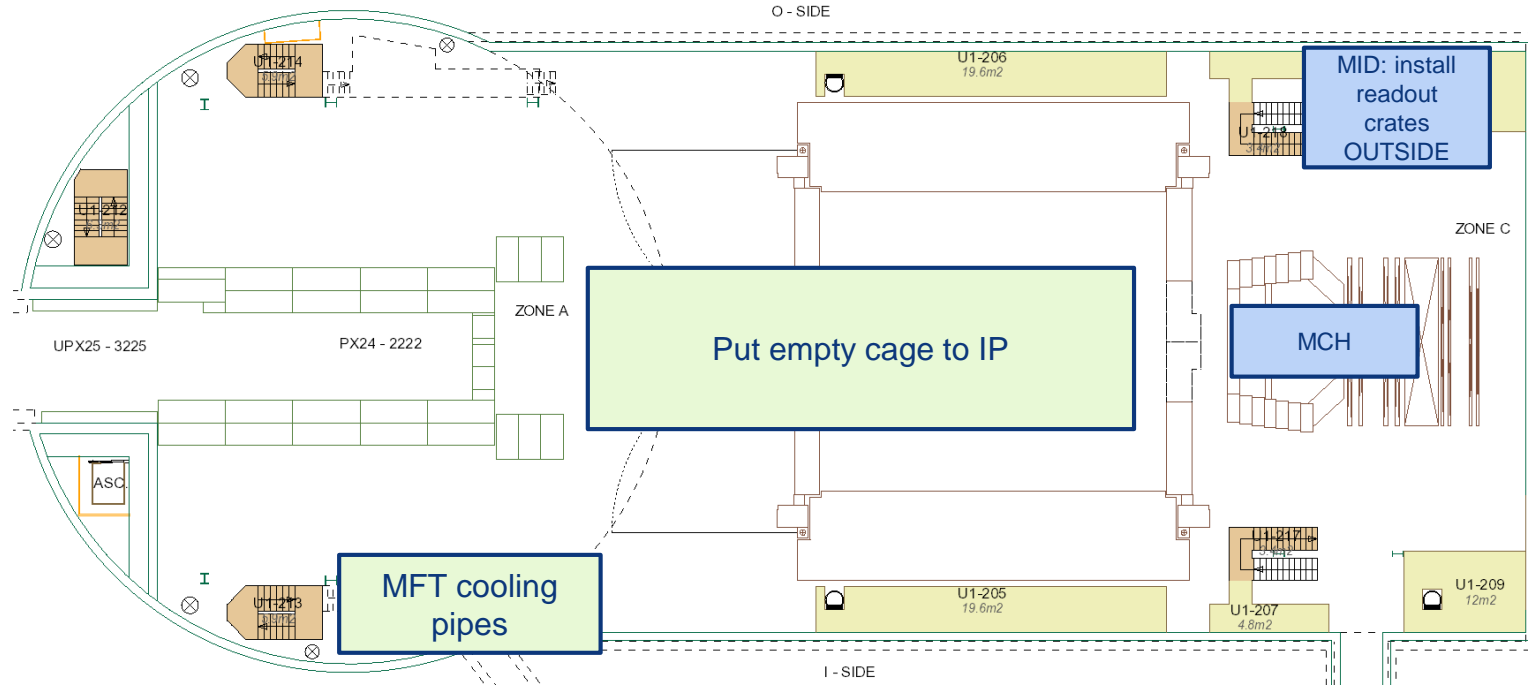
Cleaning cavern (Topnet): 13:00 to 15:00

Maintenance cavern lift (AS-724) – no access to UX25 from 6:00 AM to 8:00 AM

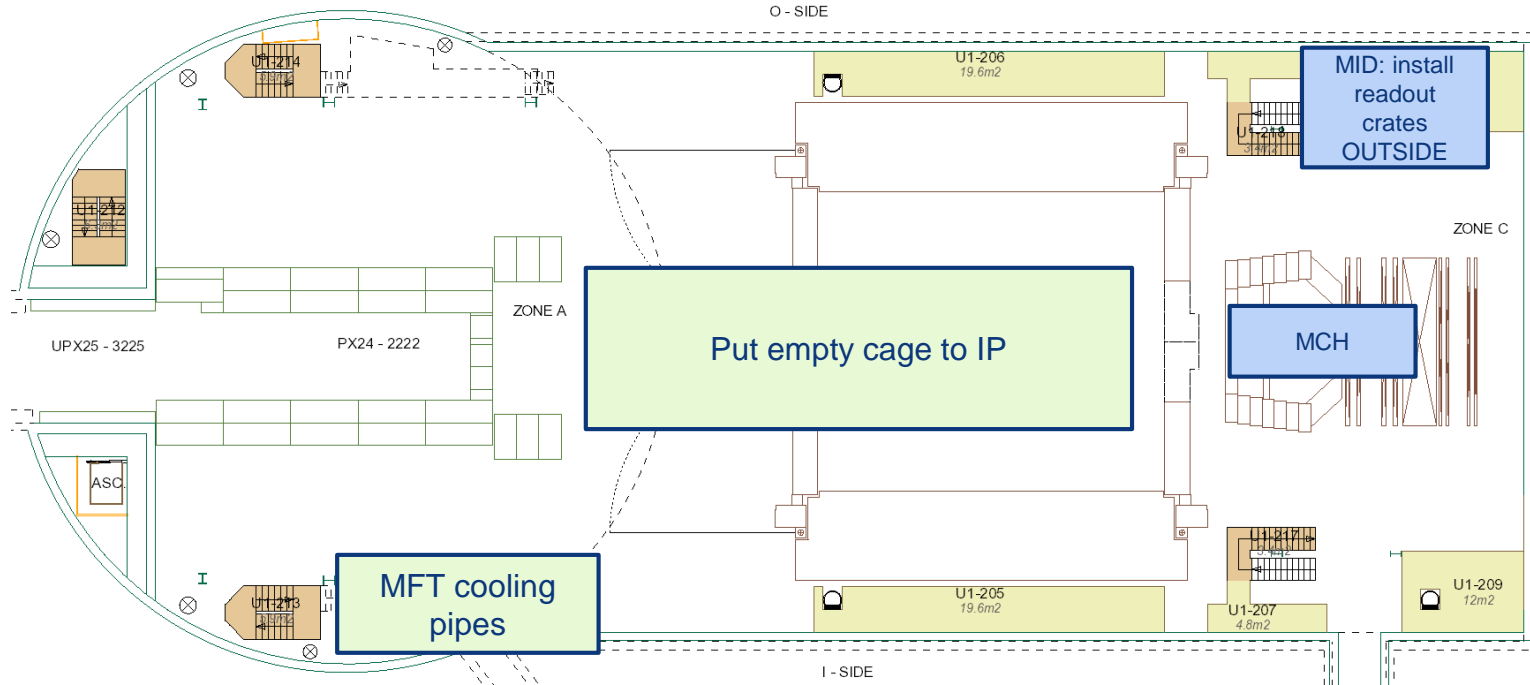


UX25 activities w35 – Wed 26 Aug 2020

CR0: repair A/C in power module (Stulz France)

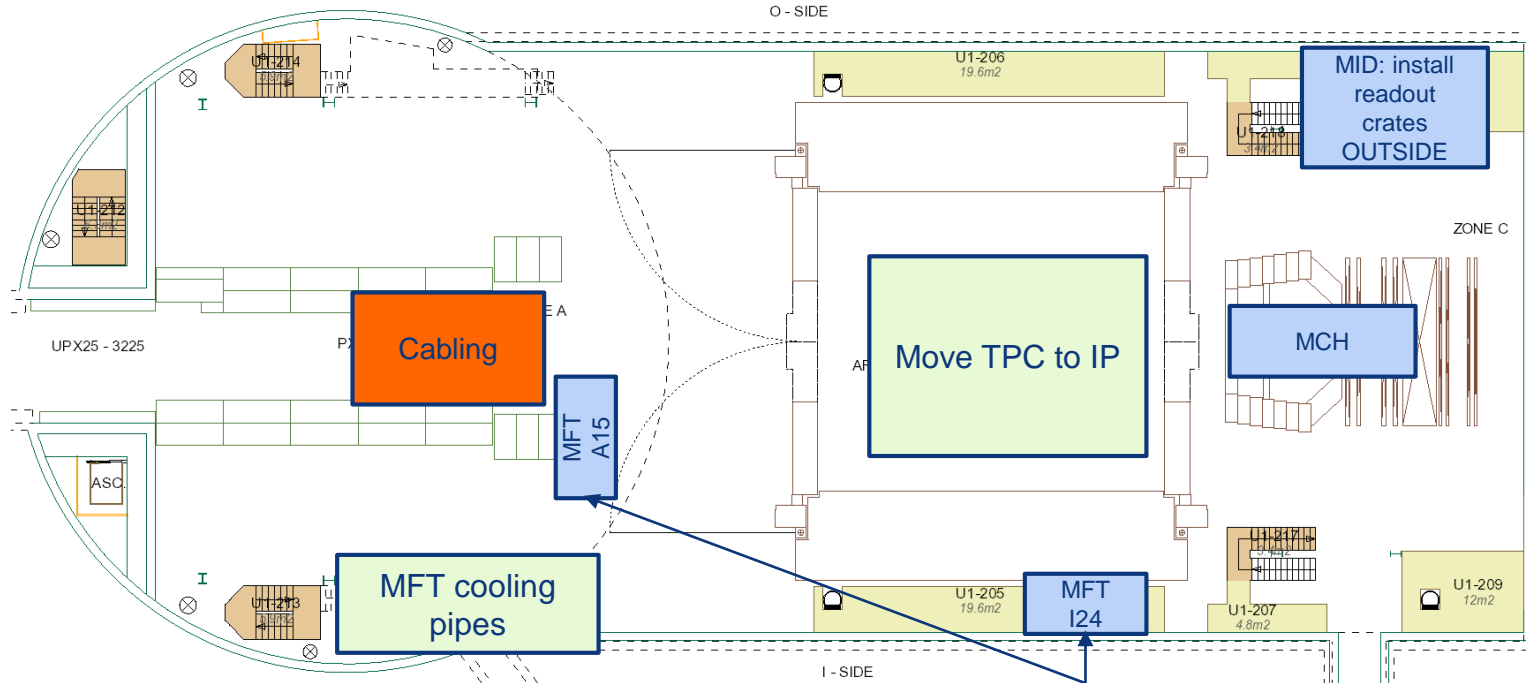


UX25 activities w35 – Thu 27 Aug 2020



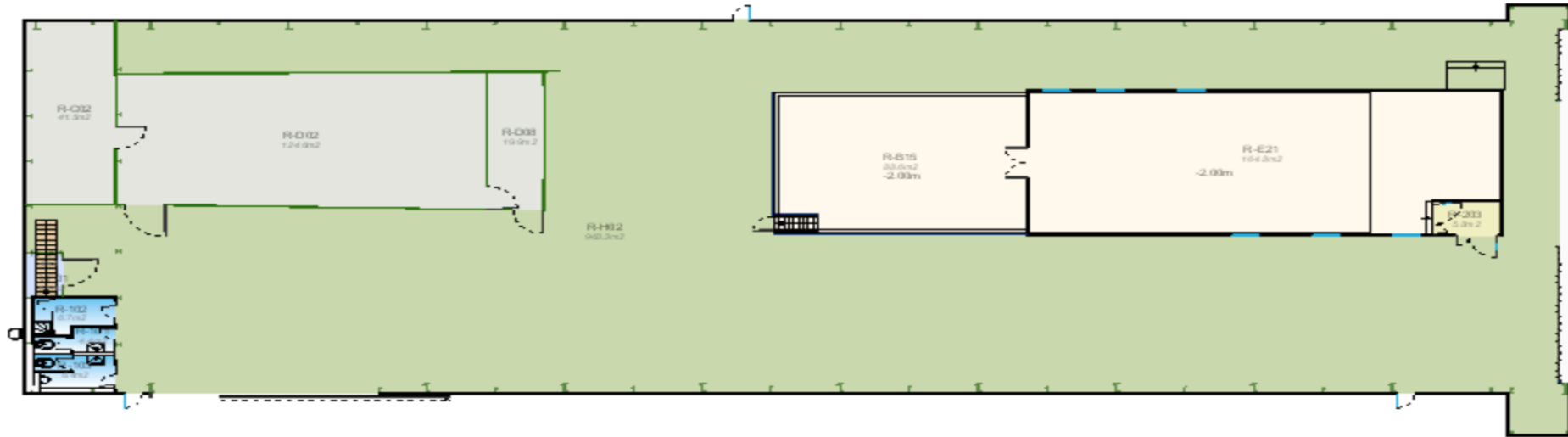
UX25 activities w35 – Fri 28 Aug 2020

Filming during TPC move to IP



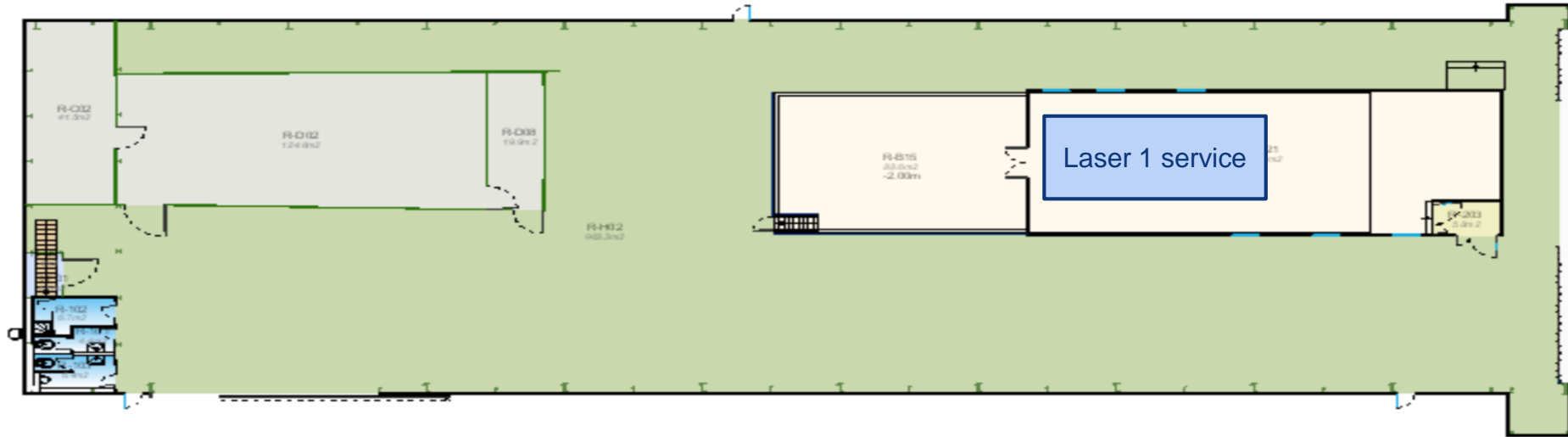
Fixation of power cables on power racks

SXL2 activities w35 – Mon 24 Aug 2020

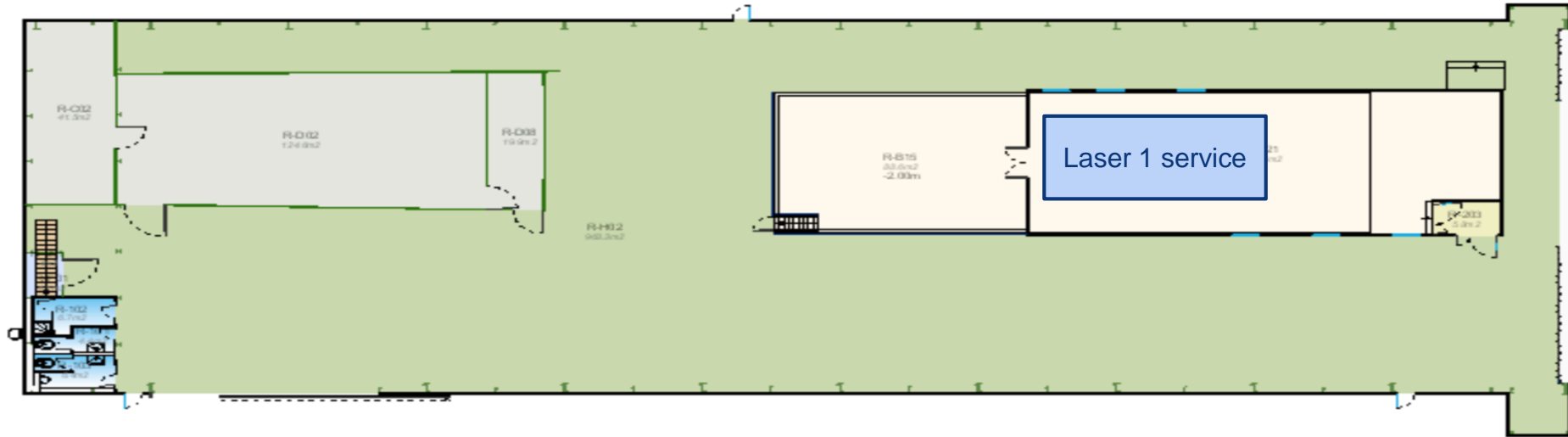


SXL2 activities w35 – Tue 25 Aug 2020

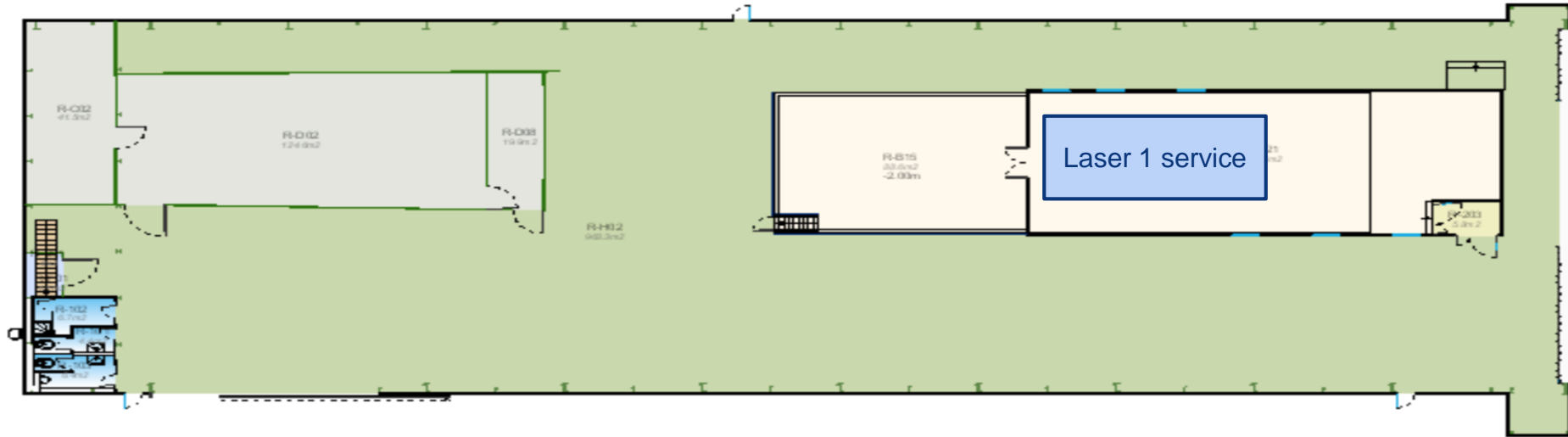
Move laser 1 to SXL2 cleanroom (ALTEAD)



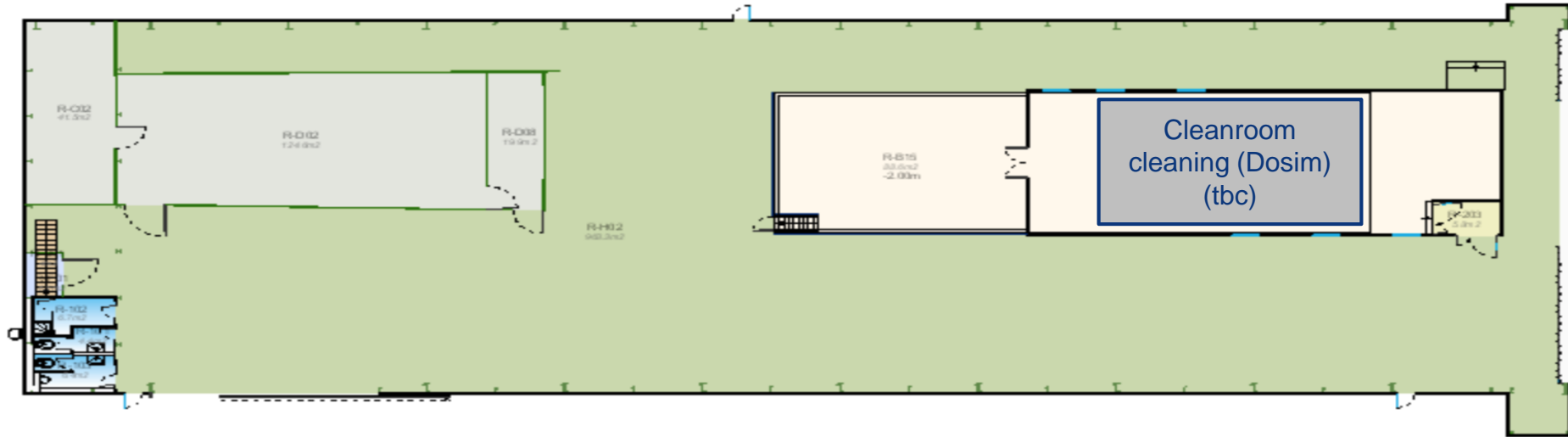
SXL2 activities w35 – Wed 26 Aug 2020



SXL2 activities w35 – Thu 27 Aug 2020

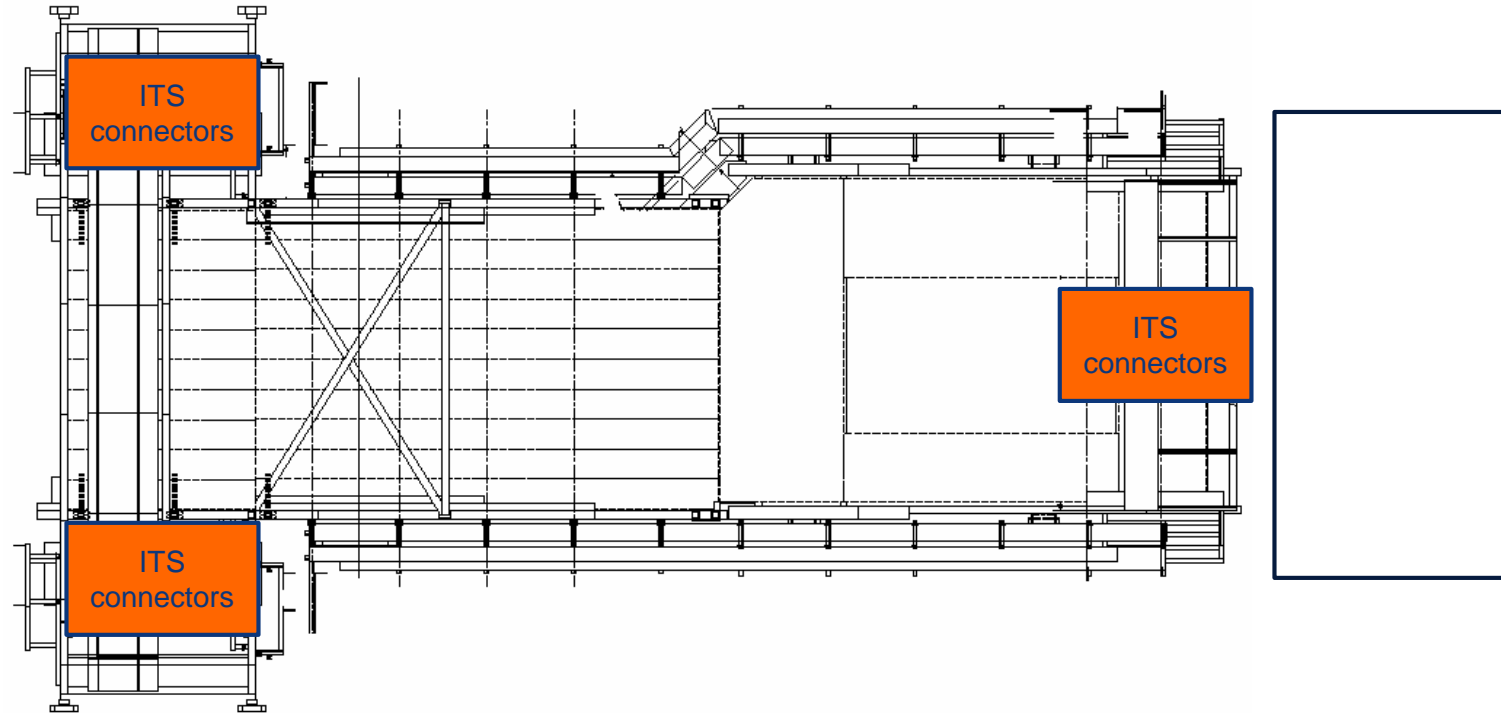


SXL2 activities w35 – Fri 28 Aug 2020

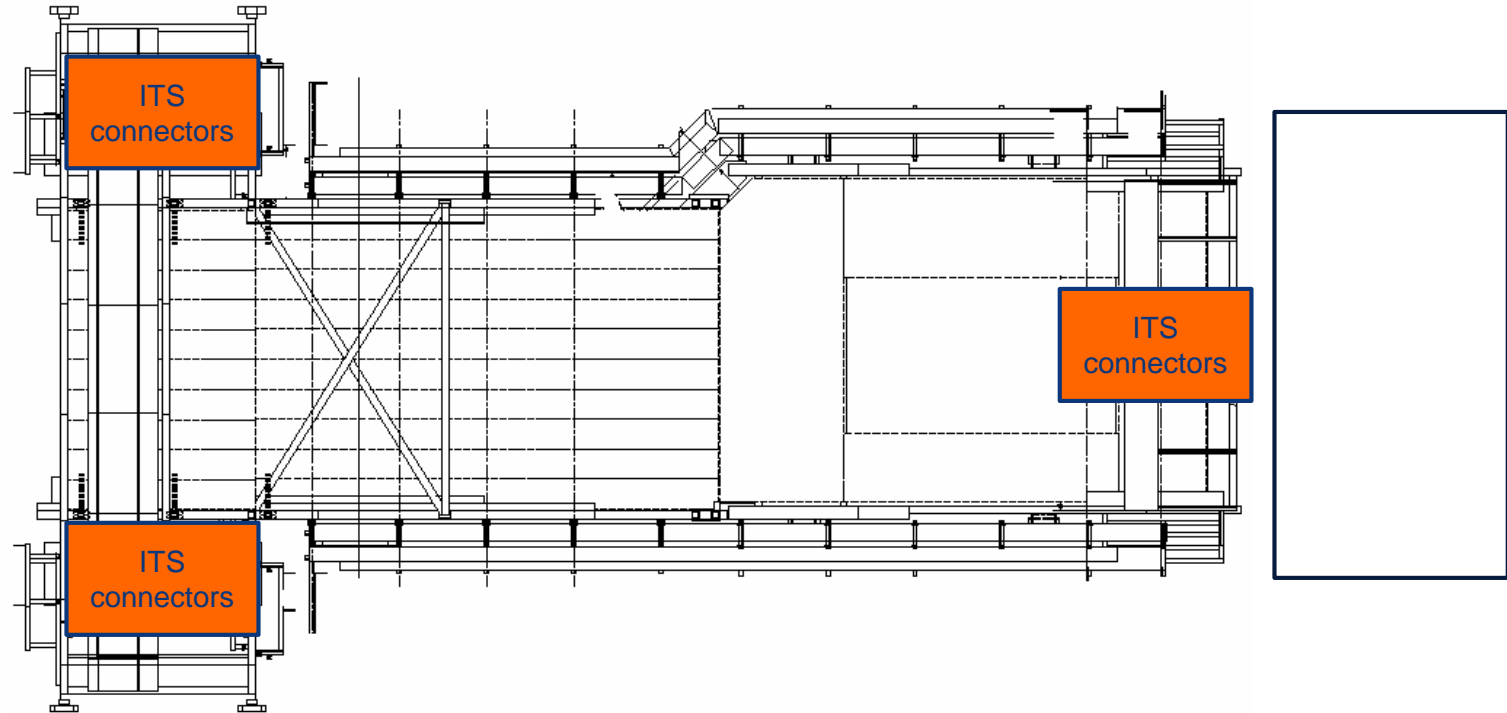


Miniframe activities w35 – Mon 24 Aug 2020

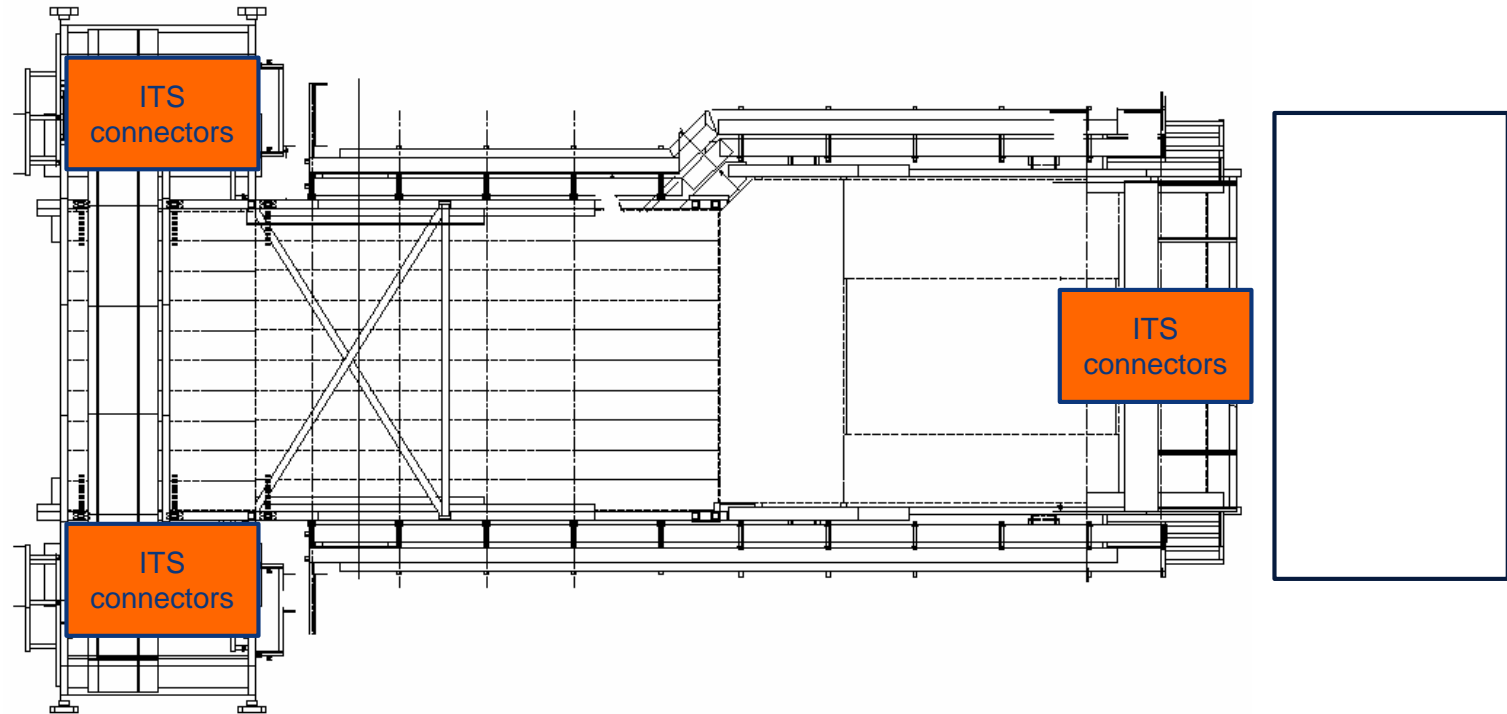
Cleaning Miniframe (Elior)



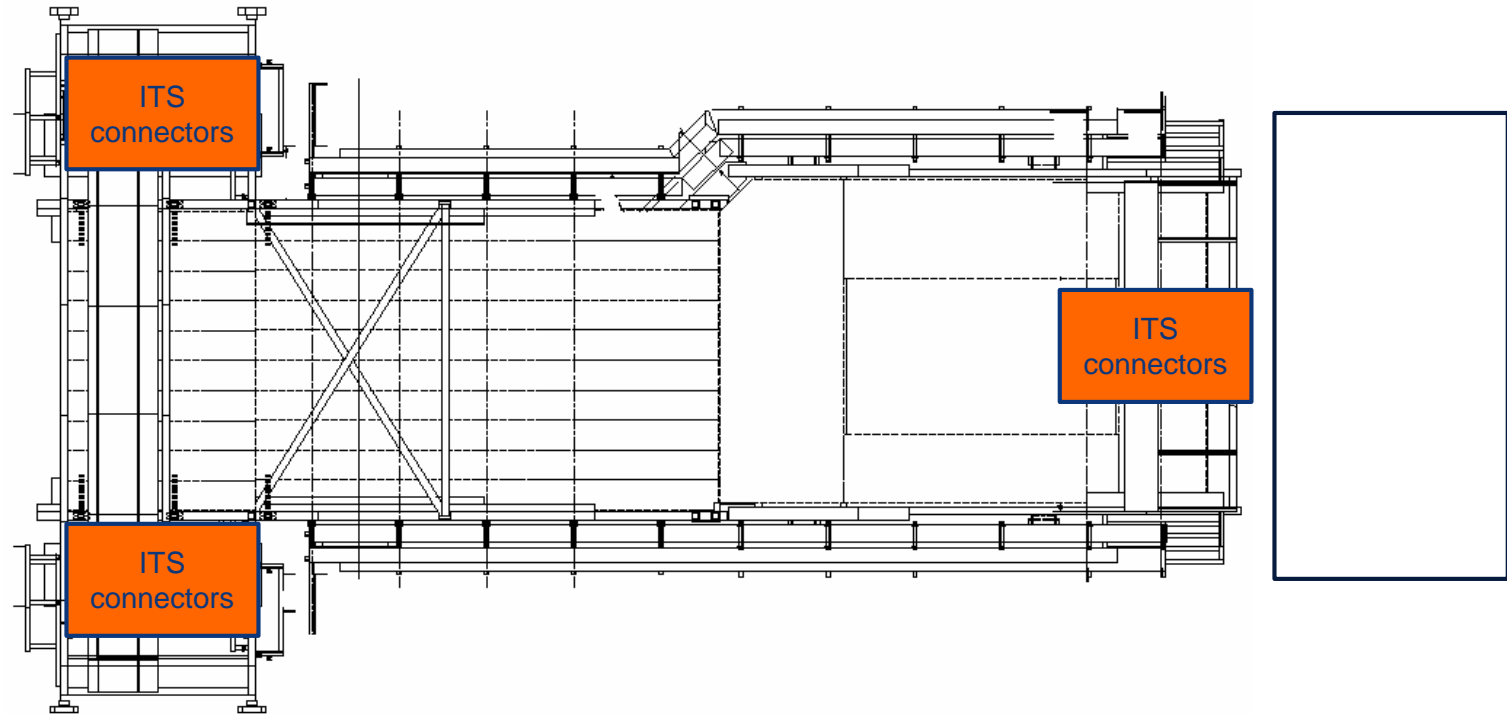
Miniframe activities w35 – Tue 25 Aug 2020



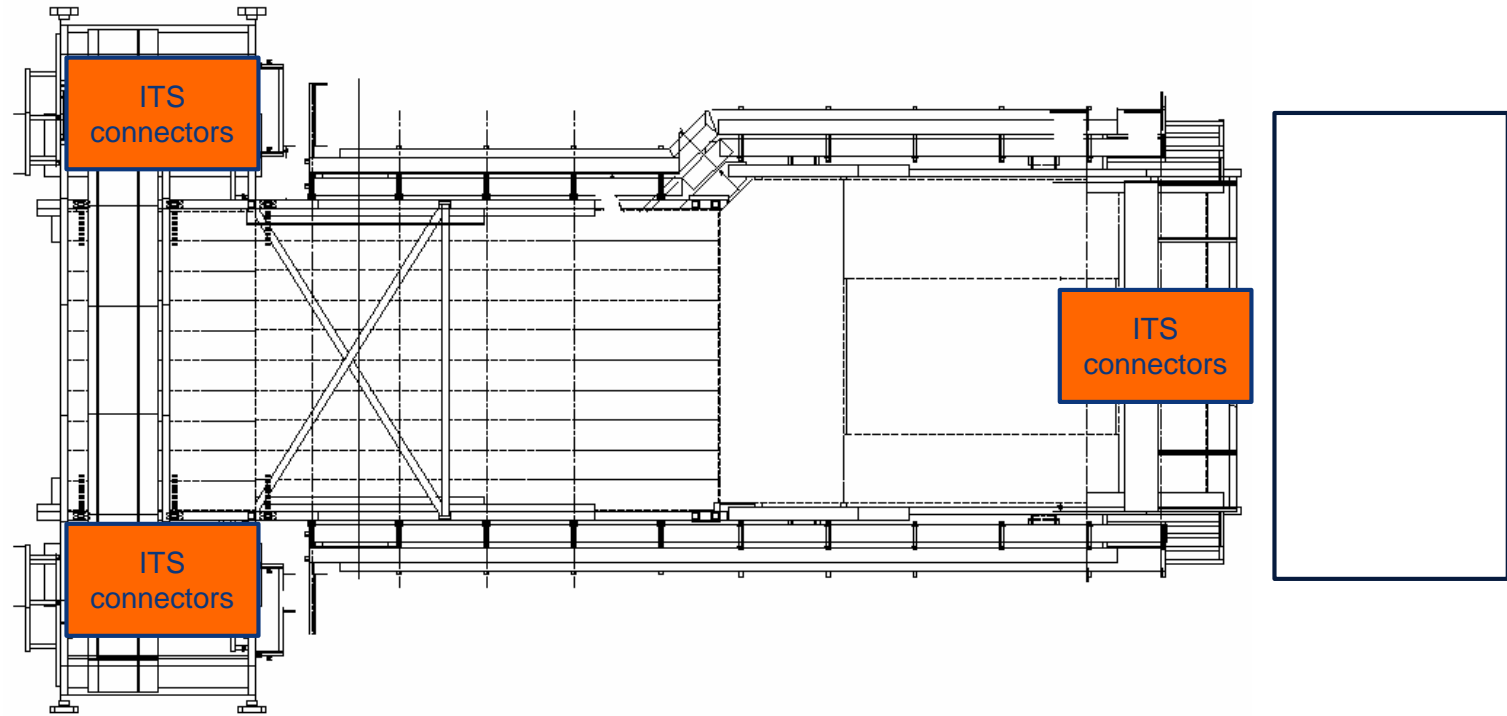
Miniframe activities w35 – Wed 26 Aug 2020



Miniframe activities w35 – Thu 27 Aug 2020



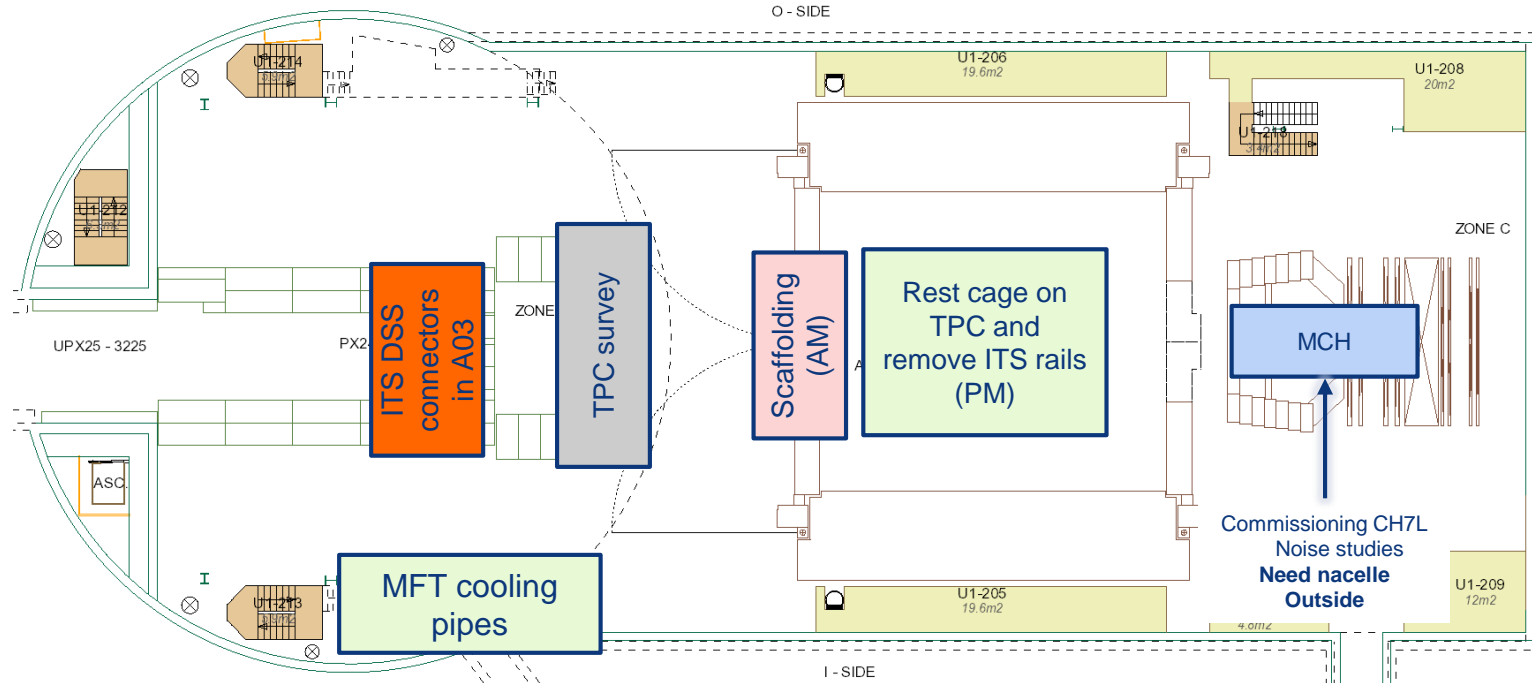
Miniframe activities w35 – Fri 28 Aug 2020



Day-by-day sequence w36



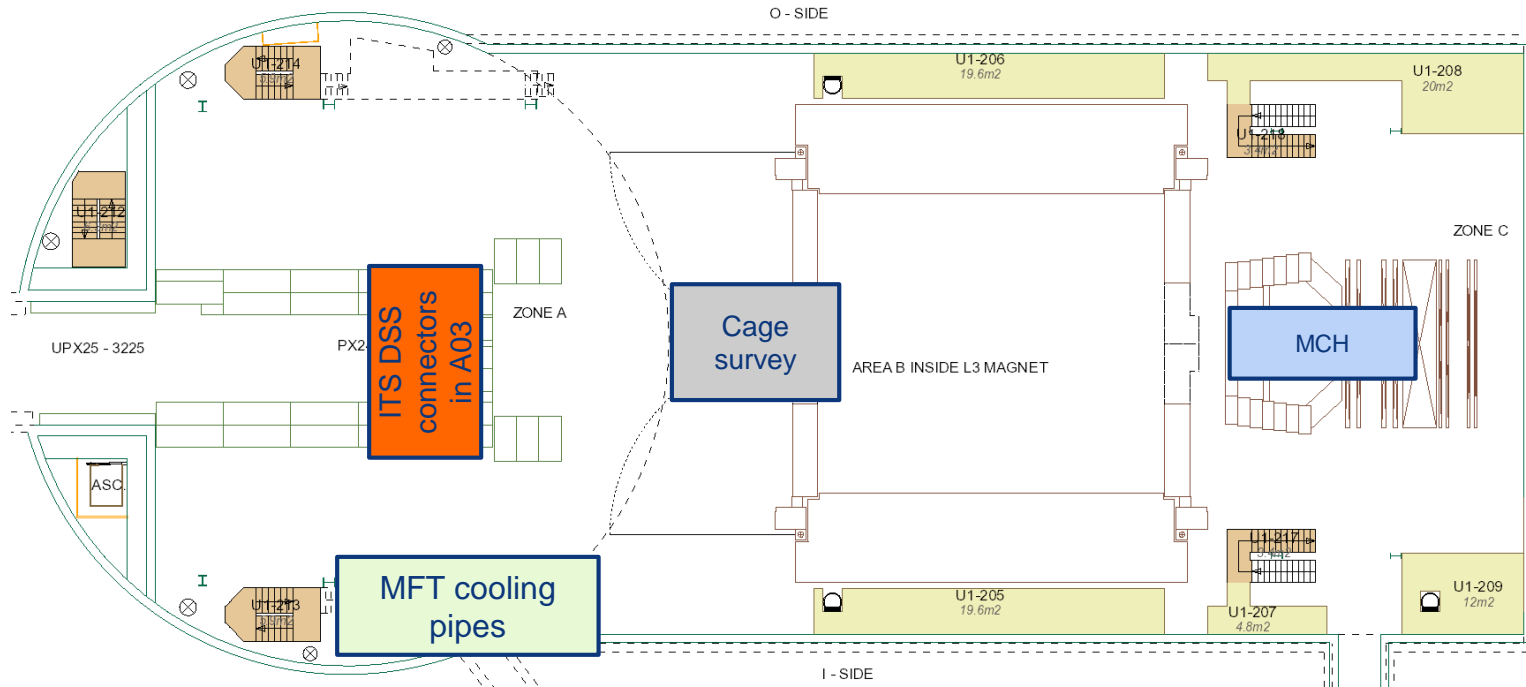
UX25 activities w36 – Mon 31 Aug 2020



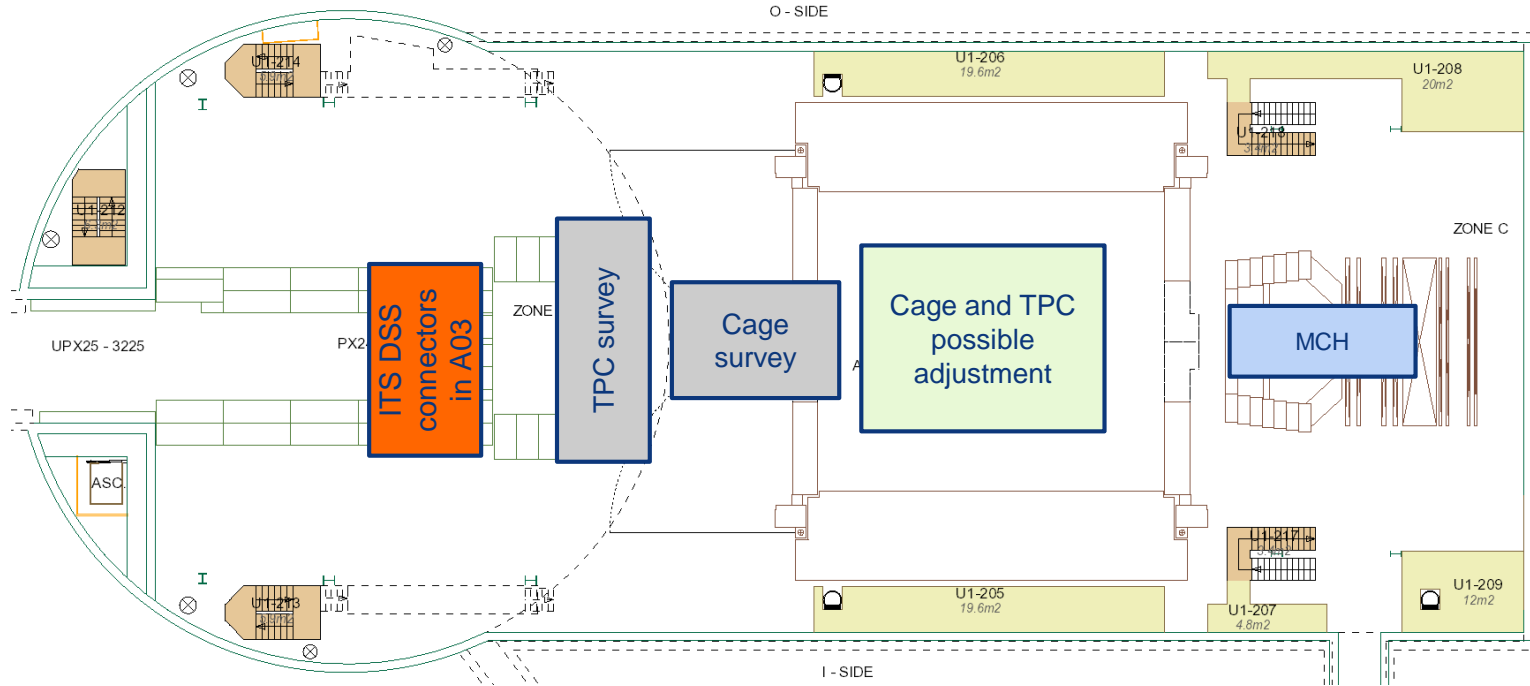
UX25 activities w36 – Tue 1 Sep 2020

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

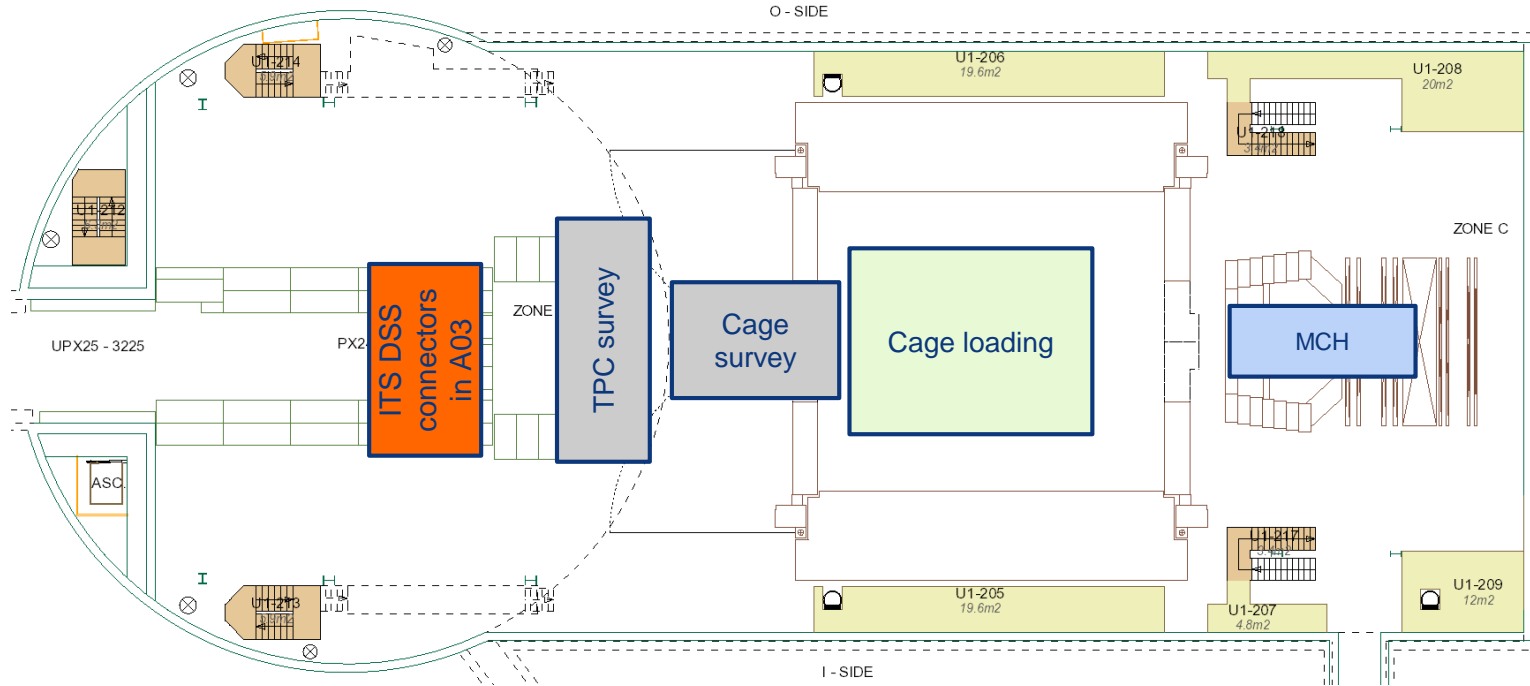
CR0: preventive maintenance on RO, Power module, IT1 and IT2 (Automation) (whole week)



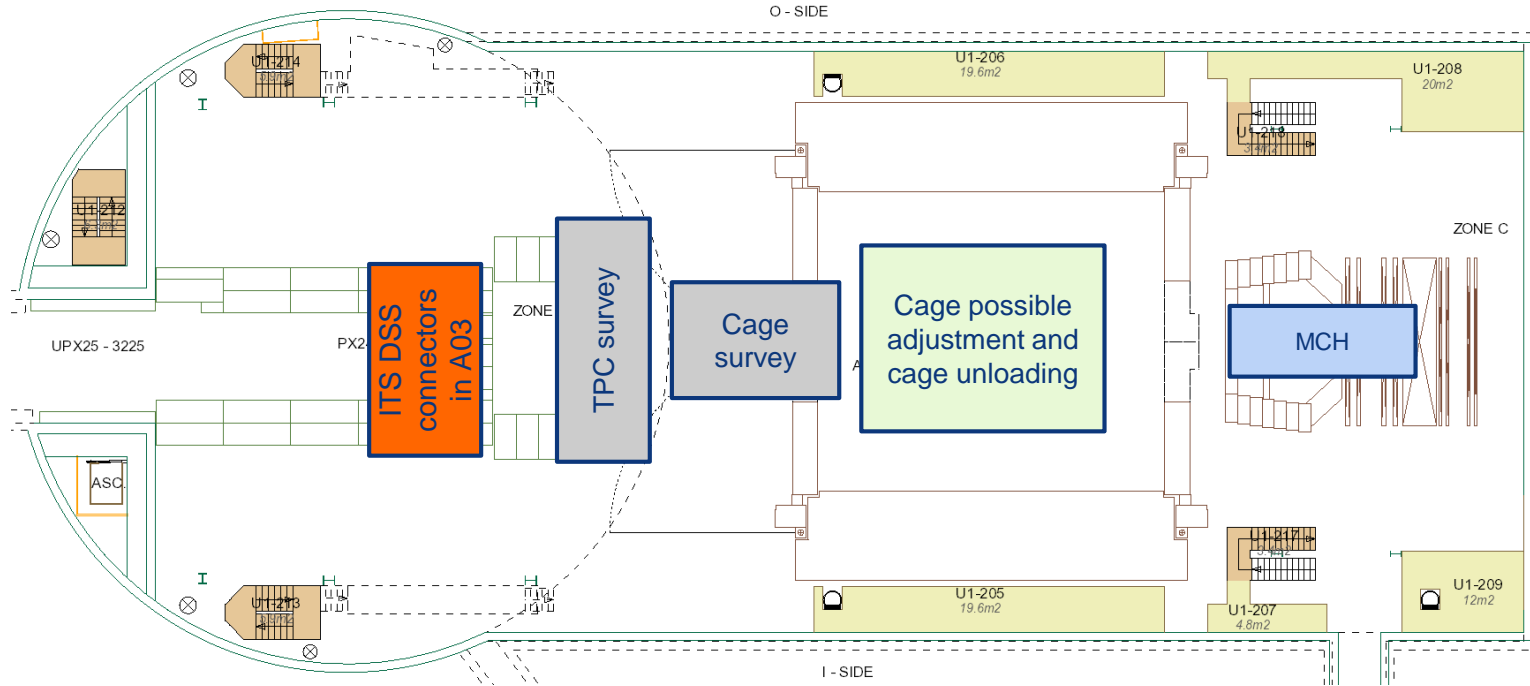
UX25 activities w36 – Wed 2 Sep 2020



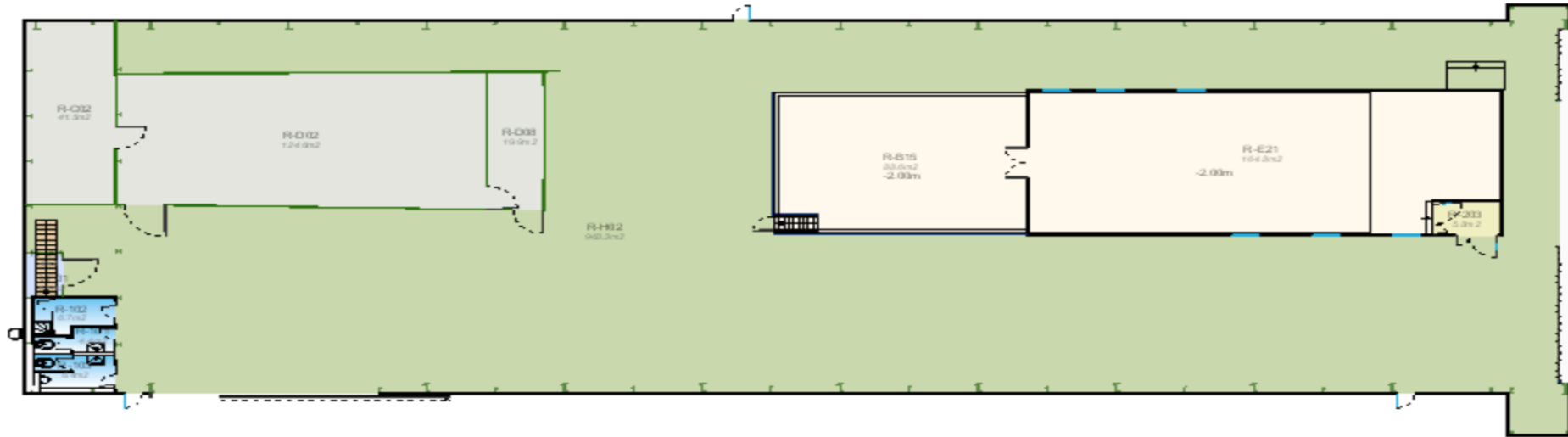
UX25 activities w36 – Thu 3 Sep 2020



UX25 activities w36 – Fri 4 Sep 2020

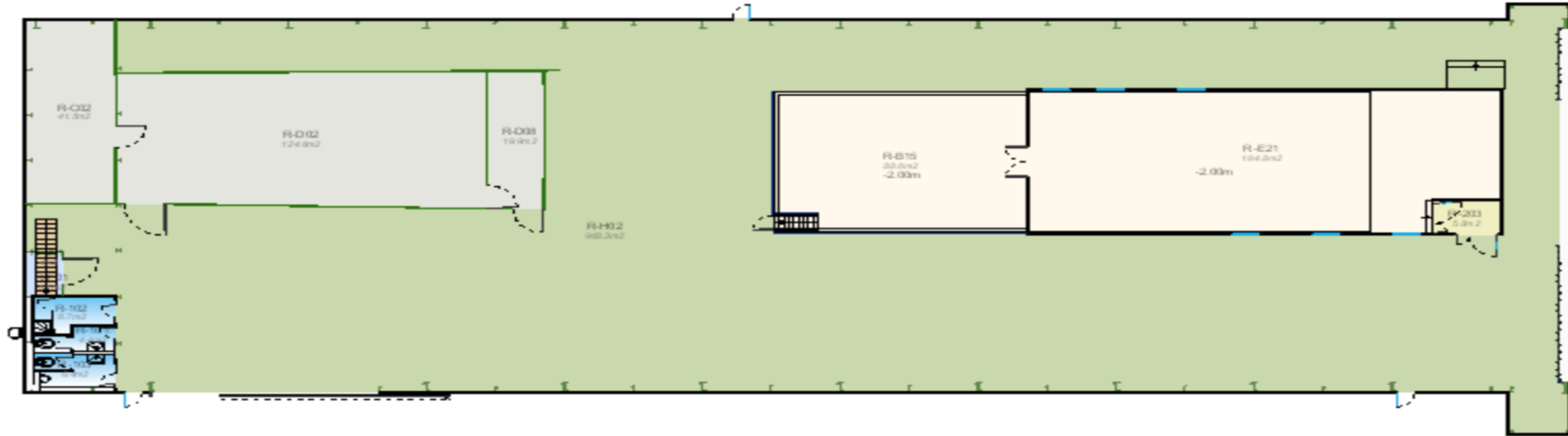


SXL2 activities w36 – Mon 31 Aug 2020

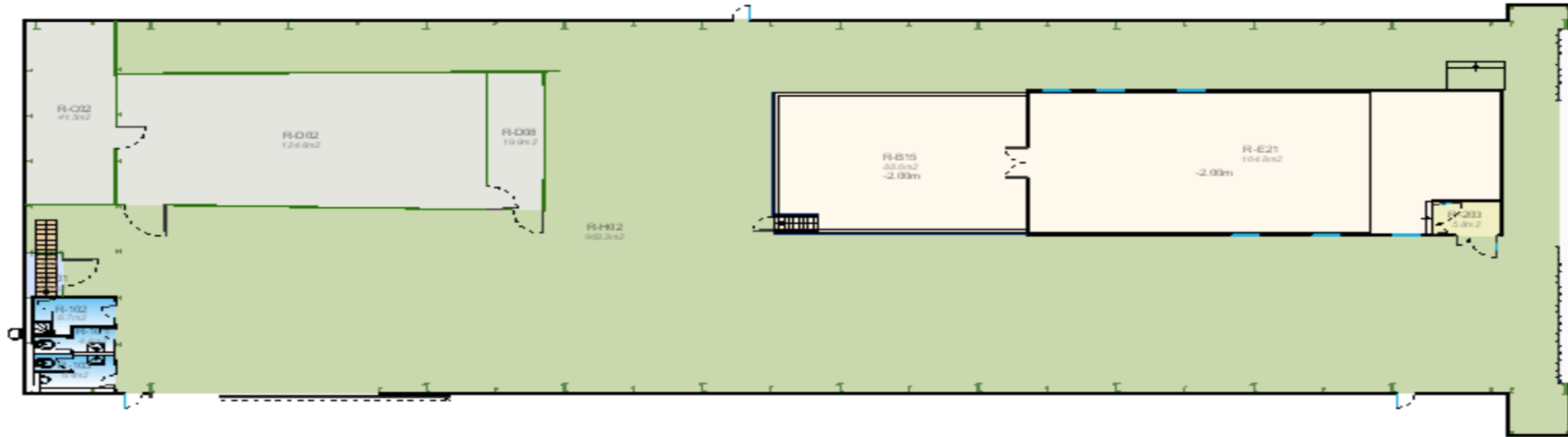


SXL2 activities w36 – Tue 1 Sep 2020

Delivery concrete block for green crane (date tbc)

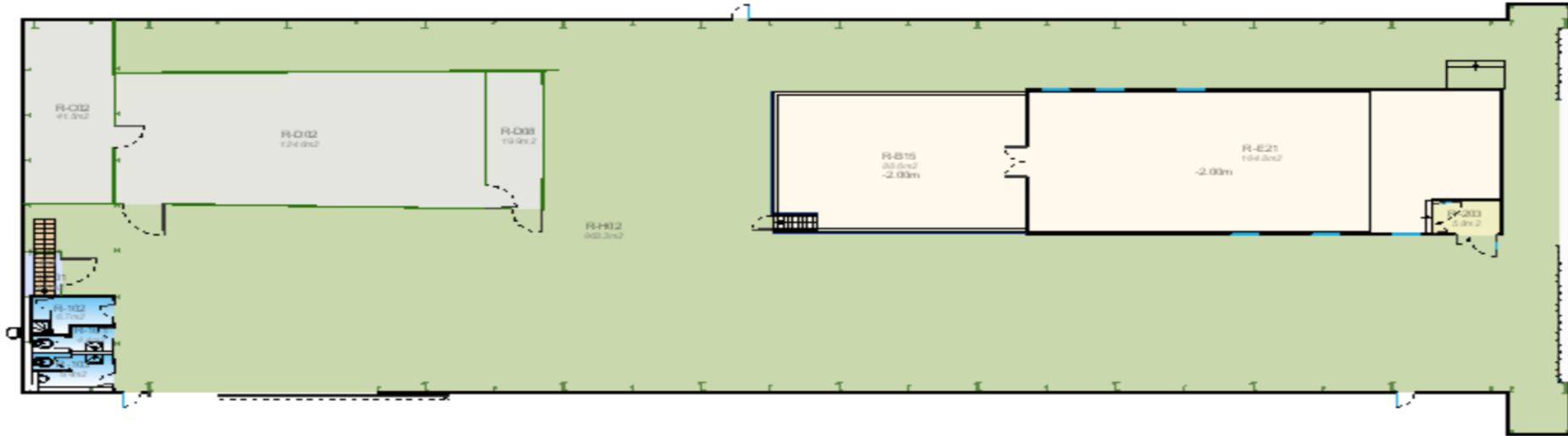


SXL2 activities w36 – Wed 2 Sep 2020



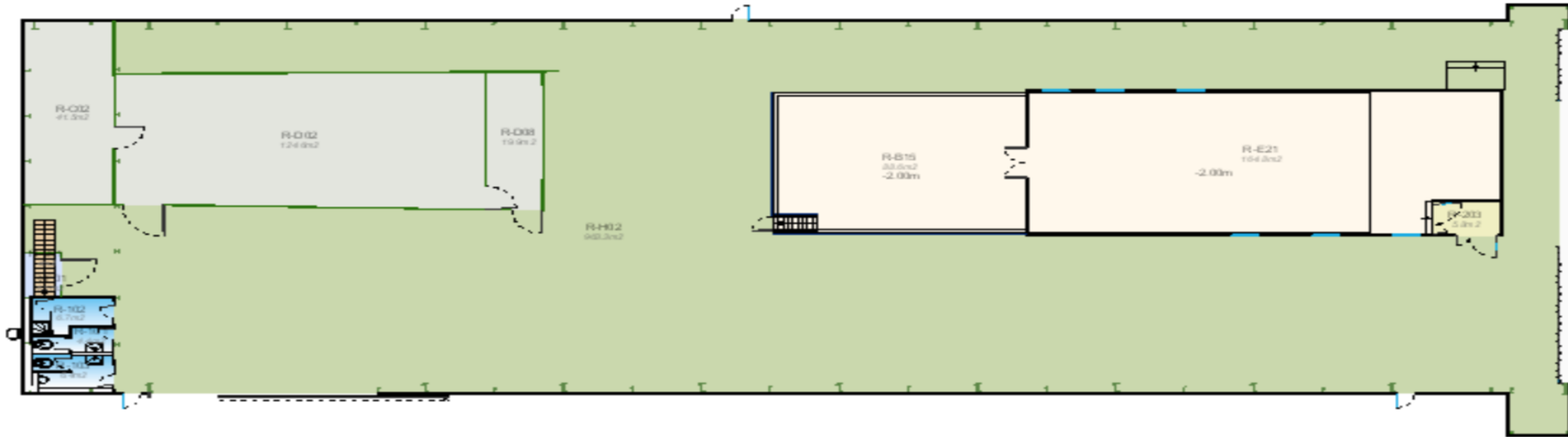
SXL2 activities w36 – Thu 3 Sep 2020

Drill holes in concrete block for green crane (SMB)



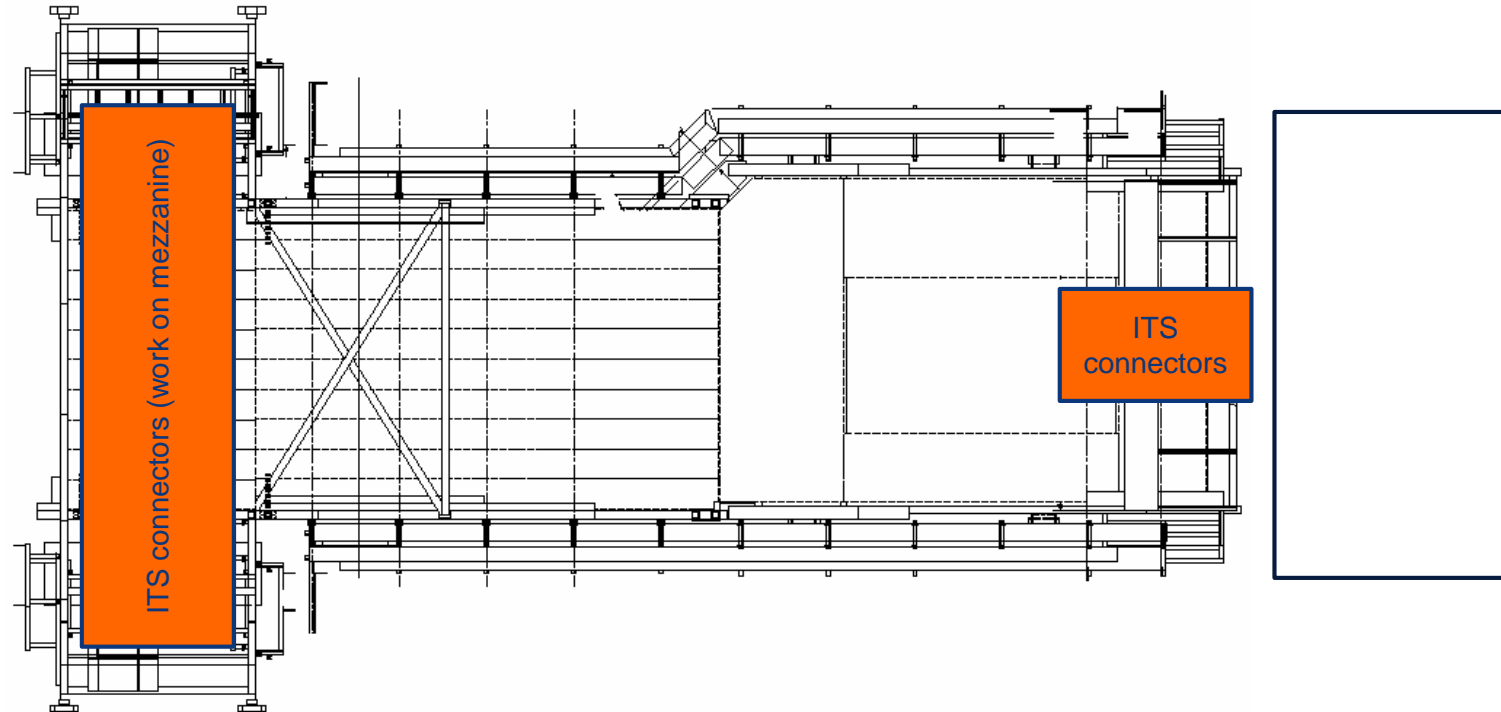
SXL2 activities w36 – Fri 4 Sep 2020

Assemble green crane, HSE inspection

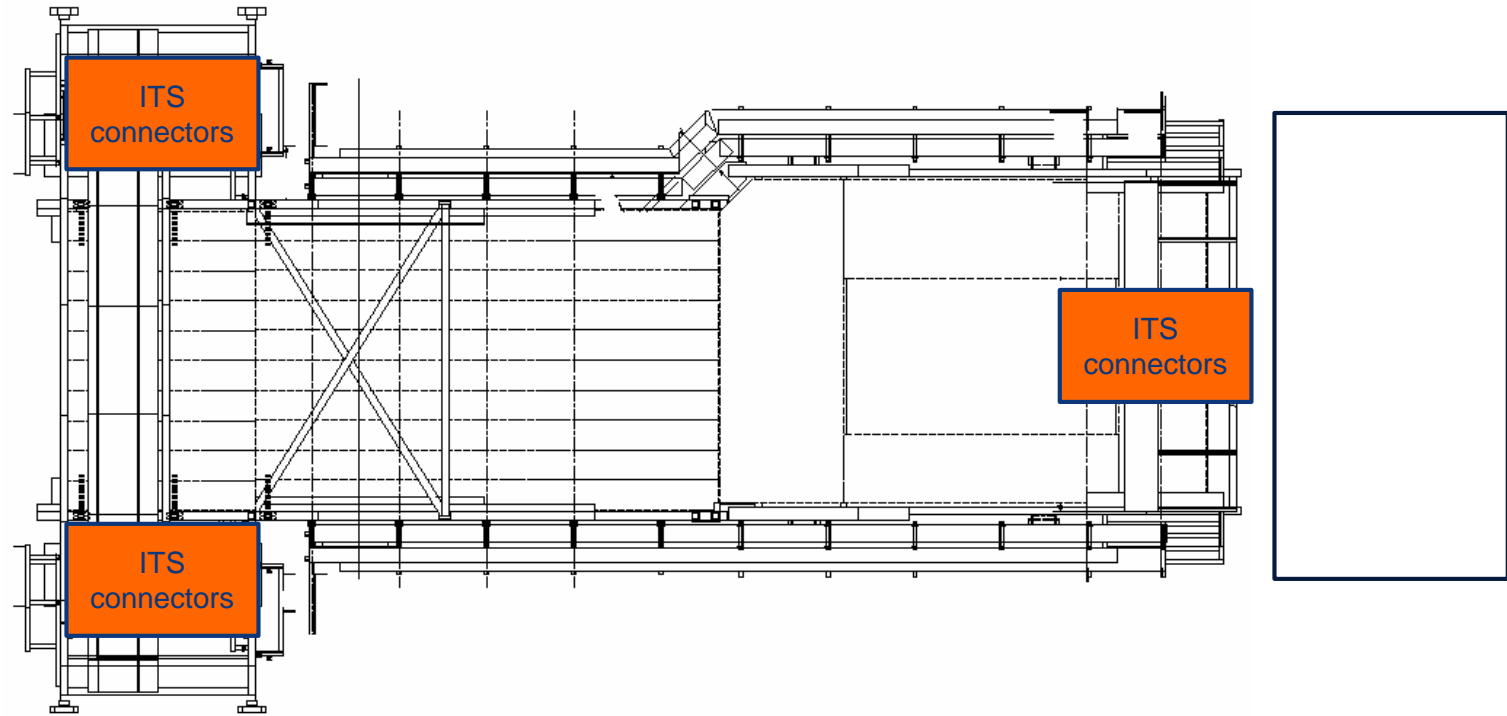


Miniframe activities w36 – Mon 31 Aug 2020

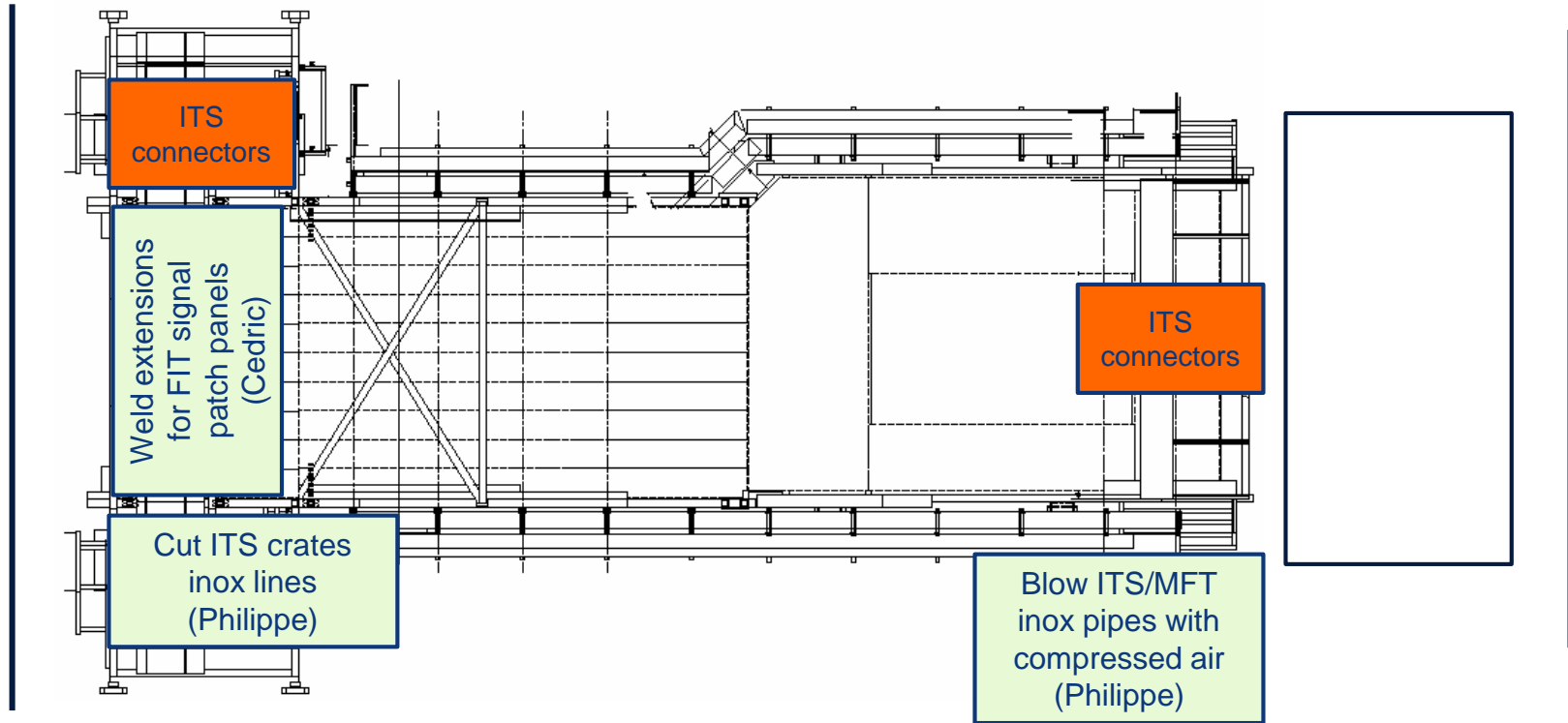
Cleaning Miniframe (Elior)



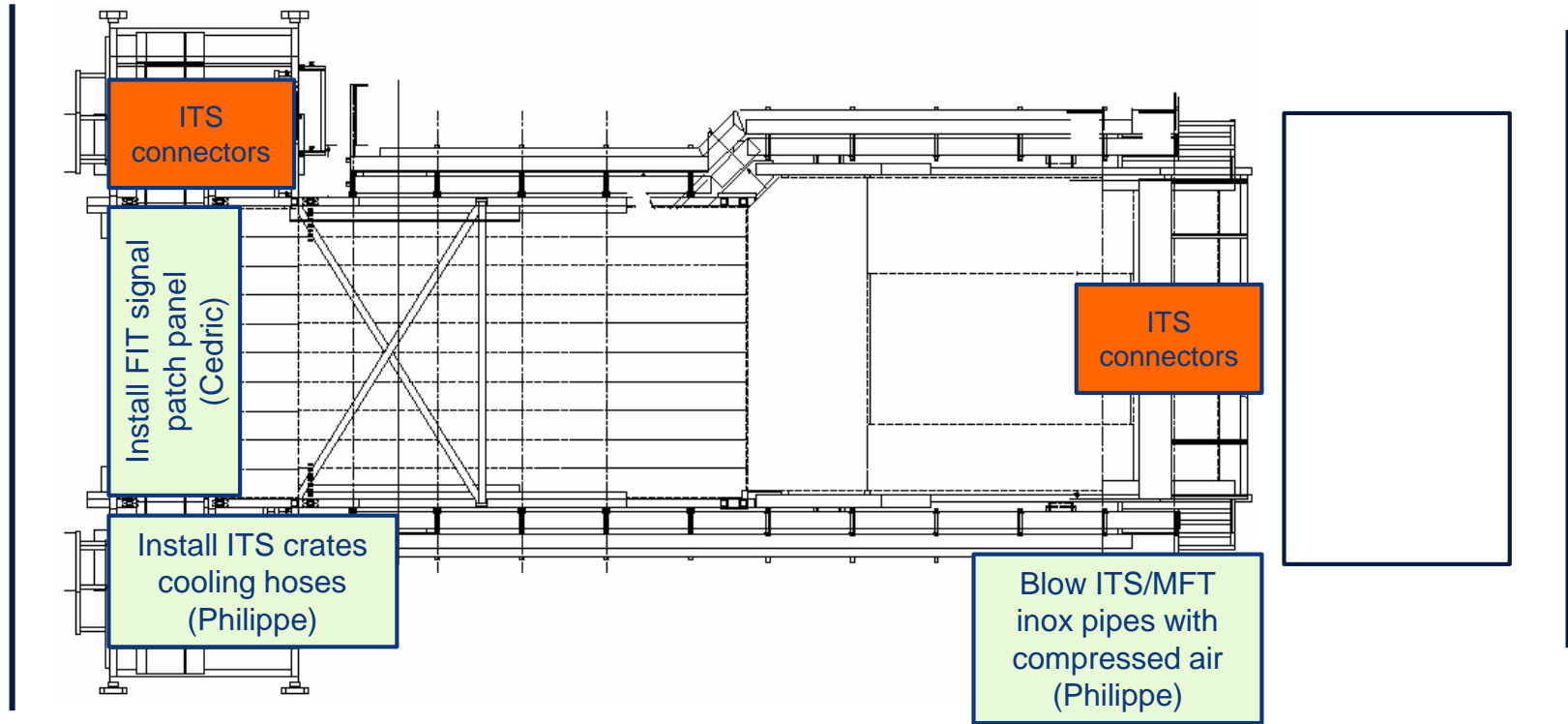
Miniframe activities w36 – Tue 1 Sep 2020



Miniframe activities w36 – Wed 2 Sep 2020



Miniframe activities w36 – Thu 3 Sep 2020



Miniframe activities w36 – Fri 4 Sep 2020

