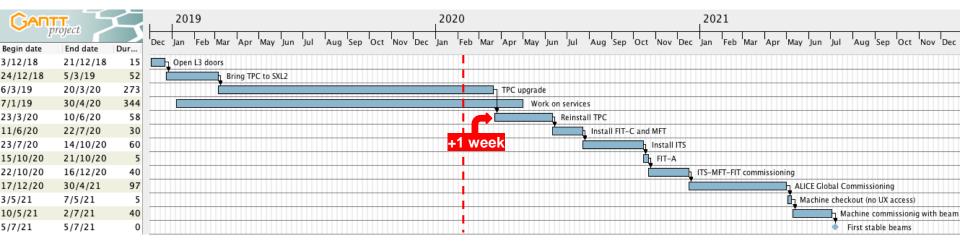
LS2 planning meeting A.Tauro



LS2 master plan (v35)





v35: added 1 week delay in 2020 sequence



Key dates



Activity	v34 (old)	v35
Move TPC to SX2	16 Mar 2020	23 Mar 2020
Install TPC (parking position)	17 Mar – 9 Apr	24 Mar – 20 Apr
Install cage and central beampipe	14 Apr – 5 May	21 Apr – 12 May
Move TPC to IP	6 – 7 May	13 – 15 May
Install Miniframe	28 – 29 May	8 – 9 Jun
FIT-C & MFT installation and checks	2 Jun – 13 Jul	11 Jun – 22 Jul
ITS installation and checks	14 Jul – 5 Oct	23 Jul – 14 Oct
FDD-C installation	First ha	alf Aug*
FDD-A installation	1-10	Sep
FIT-A installation	6 – 12 Oct	15 – 21 Oct
ITS & MFT commissioning time	8	W
ALICE global commissioning time	21w	20w
End of LS2 – stop UX25 access	1 May	2021
Start commissioning with beam – ALICE in super-safe	10 Ma	y 2021

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



TPC & miniframe reinstallation sequence



5	$ \leftarrow$	2020	5						
Begin date	End date D.	February	March	April	May	June	July	August	Septe
3/2/20			anare IROC exchan	e (open CLR roof	remove scaffoldir	ng, install tooling, c	lose roof)		
12/2/20	1 1 1		C: prepare IROC A1			-			_
28/2/20		1		folding laser plat		comig, crose root,			
3/3/20		1				ture for cage insert	ion test		
4/3/20		9			test in CLR (roof o				
17/3/20		2		TPC: adjust TPC p					
20/3/20		1		Remove staircas					
		1		h Bring TPC from	cleanroom to SX2	(Frederici truck)			
	24/3/20	1			from SX2 to low-b		-		_
24/3/20		1			caffolding interfer				
24/3/20		1		Displace ALTE		-			
24/3/20		1		Remove/reinst					
25/3/20	25/3/20	1		Transport TPC	from low-beta to	the DF base (in fro	nt of L3) remove	low-beta fences and	d one surve
26/3/20	1/4/20	5		h Align DF	and install transfe	r rails (TRD people r	needed)		
2/4/20	2/4/20	1		Remove	scaffolding inside	baby-frame			
3/4/20	6/4/20	2		h Move	TPC to IP (remove	omega platform)			_
7/4/20	8/4/20	2		TPC :	survey and possible	e adjustment			
7/4/20	8/4/20	2			ll ITS table				
10/4/20	13/4/20	2		📘 Ea	ster holidays				
14/4/20	16/4/20	3		- È	Move TPC to parki	ng position and rei	nstall omega platfor	m	
17/4/20	17/4/20	1		ŀ	Install scaffolding	inside baby frame			
17/4/20	20/4/20	2			Fix A-side beam	npipe support to TP	C (integration test)		
20/4/20	20/4/20	1			Install ITS temp	orary rails			
21/4/20	27/4/20	5			Install cage	and central beamp	ipe		
28/4/20	1/5/20	4			Connect	and align beampipe			
1/5/20	1/5/20	1			Labour da	ay			
4/5/20	12/5/20	7			Ba	keout central beam	npipe		
11/5/20	11/5/20	1			Cle	an and repair heat	screens		
13/5/20	15/5/20	3 0			L.	Move TPC to IP (rem	nove omega and sca	ffolding)	
18/5/20	26/5/20	7				Install A-side	e beampipe support	, remove temp rails,	align cage
21/5/20	21/5/20	1				Ascension			
27/5/20	27/5/20	1				Install scaffe	olding inside baby-f	rame	
28/5/20	28/5/20	1				Remove tra	nsfer rails		
29/5/20	29/5/20	1				Remove DF	(along with ITS tabl	e)	
1/6/20	1/6/20	1				Pentecot	e		
2/6/20	2/6/20	1				Remove	DF base and blocks		
3/6/20	3/6/20	1				n Install n	niniframe rails		
4/6/20	5/6/20	2				Install	laser platform		
3/6/20	3/6/20	1				Reinstal	I TPC VHV box and	laser pipe inside bab	y-frame
8/6/20	9/6/20	2				📙 Insta	all miniframe		

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





	\mathbf{i}	2020											
	End data	2ek 5 Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17
Begin date		/1/20 2/2/20	9/2/20	16/2/20	23/2/20	1/3/20	8/3/20	15/3/20	22/3/20	29/3/20	5/4/20	12/4/20	19/4/20
23/1/20			ide: Sector tests, 2 se					_			_		
28/1/20			ors for IROC exchange	(A01, A02, A03, A	A06, A07, A08)								
	3/2/20		int A side scaffolding										
4/2/20	4/2/20	Ор	n roof: Prepare for IR(OC exchange, rem	ove scaffolding an	nd close roof							
4/2/20	6/2/20		Replace gas mixture	with air									
5/2/20	5/2/20		lean cleanroom										
7/2/20	7/2/20		- IROC replacement	:: A02, A07									
10/2/20	11/2/20		Uncabl	e A00, A17, A16									
12/2/20	12/2/20		L Ope	n roof: prepare fo r	- A17 exchange-								
13/2/20	13/2/20		Ĺ c	lean cleanroom									
14/2/20	14/2/20		È-	IROC replacemen	nt A17								
17/2/20	17/2/20			Den roo	of, remove tooling,	put scaffolding							
17/2/20	28/2/20					Fill TPC with N	2 CO2 N2						
18/2/20	2/3/20					1 Reinst	II FEC frames, FEC	s, services in A00,	A01, A02, A03, A06,	A07, A08, A16 an	d A17		
3/3/20	3/3/20					L Ren	ove scaffolding, pu	ut 2 nacelles on A	side. Install blocks fo	or ITS insertion tes	t		
4/3/20	17/3/20							Tes	t A00, A01, A02, A03	3, A06, A07, A08, A	16 and A17		
18/3/20	18/3/20							Ē. ī	Disconnect gas syste	m			
19/3/20									Finalize: Put cov	vers, cooling conne	ections, test for I	eaks, secure fibers a	and cables
	16/3/20					<u> </u>		h ITS ins	sertion test				
17/3/20									Adjust TPC position				



TPC upgrade sequence





Remove Services and FEE (outside cleanroom)



Uninstall MWPC ROC



Install GEM ROC



Install new FEC + test



Ready for transportation to SX2



TPC schedule v42



Copper cables (EN-EA)

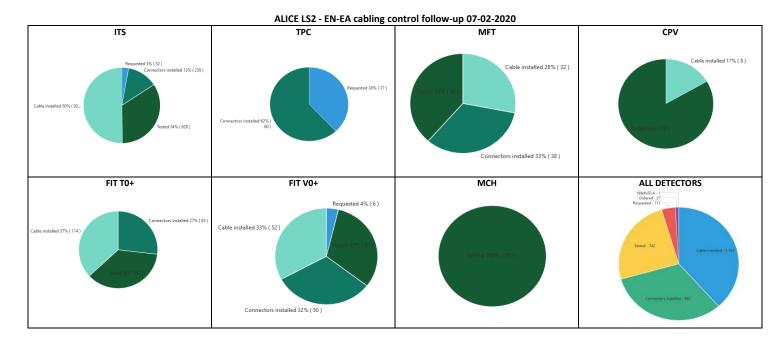


20	20																									
Veek 1	Week 2 Week	3 Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26	Week 27	Week 28 W
9/12/19	5/1/20 12/1/2	0 19/1/20	26/1/20	2/2/20	9/2/20	16/2/20	23/2/20	1/3/20	8/3/20	15/3/20	22/3/20	29/3/20	5/4/20	12/4/20	19/4/20	26/4/20	3/5/20	10/5/20	17/5/20	24/5/20	31/5/20	7/6/20	14/6/20	21/6/20	28/6/20	5/7/20 13
	Xmas break	ng A-side + bi	a als frances (-	-	-					-	-	-	-			-			-		-	-	_
	Cleani	-	PC connector		-	- 4)																				
	_		_	C connecto		A)	-	-		-			-	-		-	-	_	-			-			-	_
					les test (ca	bles betwee	n PPO and	TPC-A)																		
_						_	_	s (PPO and PF	21)																	
								MNF: ITS gab	oles test (be	etween PP0	and PP1)															
						h MN	F: MFT con	nectors (PPO,	cables fron	n PP2)																
						- b	MNF: MFT o	onnectors (P	P2)																	
										MNF: MFT ca	ables test (c	ables betw	een PPO and	PP2)												
						i i	MNF: FI	T connectors	(PPO, cable:	s from FIT-	4)															
							MN	IF: FIT-A c on	nectors (cab	oles from PR	0)															
								<u> </u>	MNF: FIT-A	A cables tes	t (cables be	tween PP0	and FIT-A)													
									MNF: ITS																	
											MNF: BC	M cables be	tween PP0	and BCM bo	ĸ											
				_	_			_					_	_					_		,		nectors (cabl			
		_		_		_		_						_		_	_	_	_			FI	T cables test	(cables fro	om C-side)	
													Second o	abling camp	aign											_
									M cables																	_
	_	_		_		_			FDD cables					_				_				_				_
	_		-	_		_		_	TPC cabl					_	_		_	_		_	_			_		_
	_	-	-	-		-	-	-			ables betwe		signal cable		_	-	-	-	-	_		-	_	_	-	_
_	-	-	-	-		-	-	-		I CR4 conne	_	C-detector	signal cable	:5	_	-	-	_	-	-		-		_	-	_
										D CR4 conne																
-	_				-	-				D CK4 COIII	HTS DSS c	onnectors i	n rack AO3					-								-
-													in A06 and	C15												-
													ectors in PP													
													FDD conne													
														nectors PP0												
																			-					Wiener L	VPS cooling	consolidation



Copper cables (EN-EA)





Progress pulling: 96% Progress connectors: 57% Progress test: 25%



Optical fibers (EN-EL)



Description		De					December January 2020												Febuary													_																										
Description		a	10	12	13	10	16	16	19	8	2 8	8	4	9	7	8	9	10	1	12	14	15	16	18	19	8 8	5 8	8	24	8 8	8 5	8	8	8 8	5 -	ы	ω.	4 6	6	7	60 O	10	11	12	14	15	16	17	19	8	28	8 8	1 2	18	8	27	4 -	N
				<u> </u>					S51	51 55; SO1			S01 S02				S03			S04					S05							S 0	6				S	07					S08	3		\Box		S	609									
	POSE																																																						\square			
TPC-C & TOF trunk (FASS O-Side) (10+70)																																																										
	MATERIEL				_																																																		\square	—	_	
	POSE																																																									
60 TRUNK 144 OF 27m (SURFACE)	TERMINATION									П																														Π												T	E	Г	Π			
	MATERIEL																																																									
	POSE																																																						\square			
MFT trunk (FASS O-Side) (50)	TERMINATION									П																														Π													E	Π	Π			
	MATERIEL																																																									
INSTALLATION D'UN DUCT ET SOUFFLAGE D'UN CÂBLE	POSE																																																						\square			
	TERMINATION									П																												Τ		Π	Τ								Τ			T	Г		Π			Γ
	MATERIEL																																																									



Miniframe schedule



17 weeks to installation

	\leftarrow	3	2020	#1365	5				
Regin date	End date		January	February	March	April	May	June	July
23/12/19		10	Xmas break						
				portation frame read		_			
15/1/20		0	TTS trans			dana and ashia turun (M	and Antoine)		
6/1/20	14/2/20	30			Install ITS/MFT PP1-PP2 mockup serv	lices and cable trays (M	immo, Antoine)	_	
	11/2/20		_		insertion test				
	21/2/20	10			Rework PP1 cooling lines (Phil	ippe)			
24/2/20		1			Cut ITS crates inox lines				
25/2/20		1			Procure and install ITS cra	ites cooling hoses			
6/1/20	8/1/20	3	Install BIR and B	IB (Lee, Pieter)					
13/1/20	13/1/20	1	Install bear	npipe supp <mark>o</mark> rt box (Le	e, Pieter)				
12/2/20	12/2/20	1		L In	stall BCM box				
13/2/20	13/2/20	1		i Ču	nstall FIT signal patch panel				
14/2/20	14/2/20	1		Ŭ .	Install ITS moveable access platform				
17/2/20	21/2/20	5			Install led lights inside Minifra	ame (Philippe)			
6/4/20	17/4/20	10					Install ITS/MFT ventilation pipe	(PP1) (Engie)	
6/4/20	10/4/20	5				Ins	tall 220V plugs inside Miniframe (Ef	N-EL)	
6/4/20	10/4/20	5				Re	-arrange cables and optical fibers in	nside miniframe	
6/4/20	6/4/20	1				Modify	cable supports miniframe (Cedric)		
11/5/20	15/5/20	5					Mi	iniframe 3D scan (Kevin)	
18/5/20	18/5/20	1					t	Reinstall top mezzanine and fen	ce (put ladder after MNF installation)
19/5/20	21/5/20	3					t t	Install TPC cooling hoses Mini	frame (both A and C sides)
22/5/20	22/5/20	1						Reinstall cable support inside	e Miniframe
13/5/20	22/5/20	8		1				Install ITS PP1-PP2 cables	
25/5/20	27/5/20	3						Install ITS PP1 sub-rack	s
8/6/20	8/6/20	0						Install min	



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
 - Gas extraction: w8/2019

 - MCH and MTG: Mon-Thu w3/2020
 - L3: need to replace extractor \rightarrow 2 days stop \rightarrow 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



CR3 status (A.Augustinus)



- February
 - (10.02 21.02) Modify water circuit (add TA valves) will try to keep DCS up and running
 - 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



Issue: damaged TOF HV connectors





2 found broken in TOF0 (C-side) in 2019

On TOF9, C-side:

• 1 connector broken

7.2.2020

Connector on distribution box damaged

On TOF11, A-side: broken 1m flat control cable



Day-by-day sequence w6

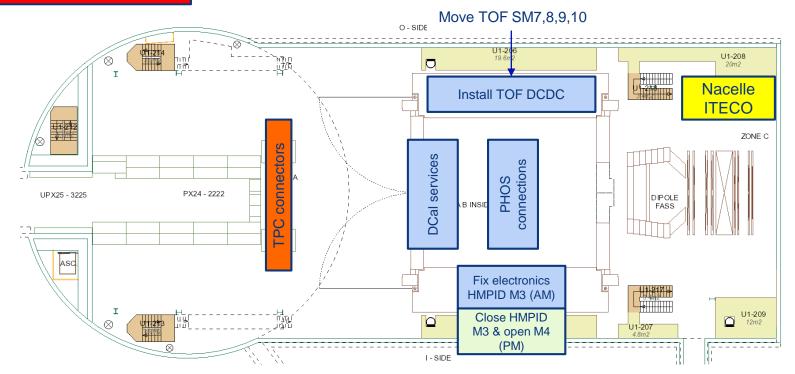


UX25 activities w6 – Mon 3 Feb 2020



Annual maintenance 2020 fire detection and gas detection (until February 11th)

MID: stop flammable gas

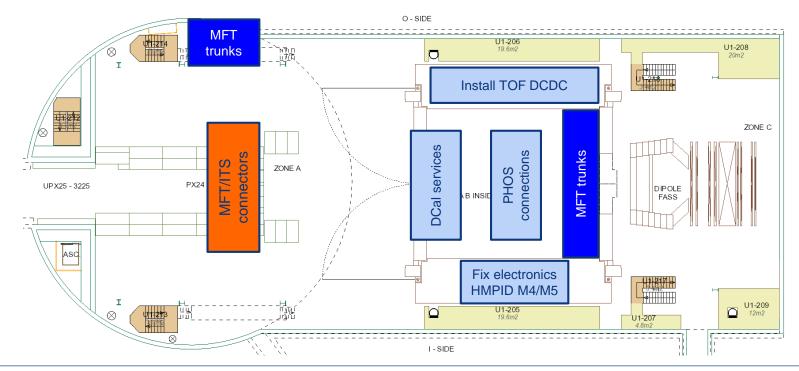




UX25 activities w6 – Tue 4 Feb 2020



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





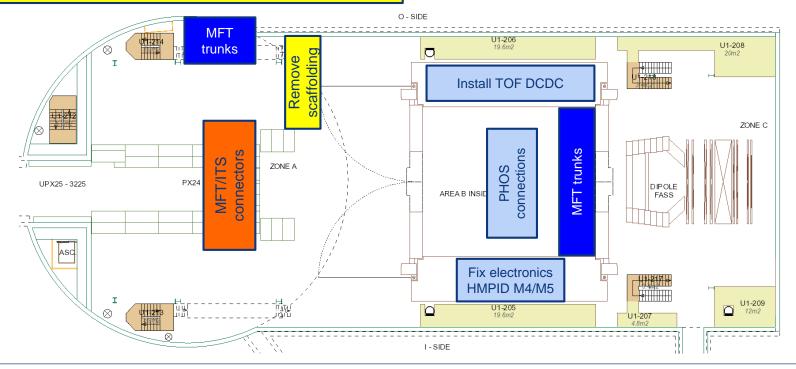
CERN

UX25 activities w6 – Wed 5 Feb 2020



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)



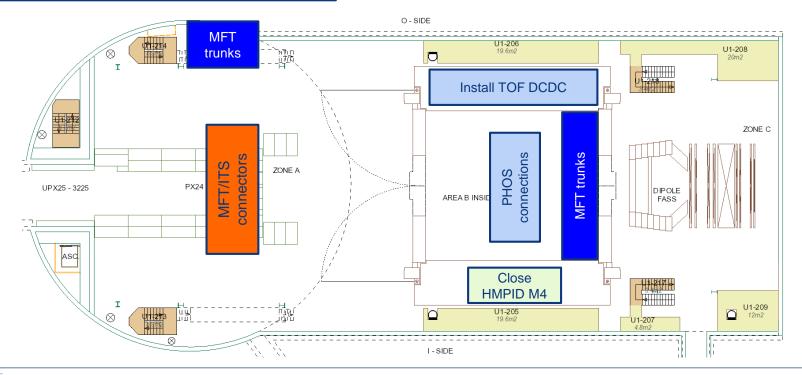


UX25 activities w6 – Thu 6 Feb 2020



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

BE-ICS: siren test PX24 from 7:00 to 7:30

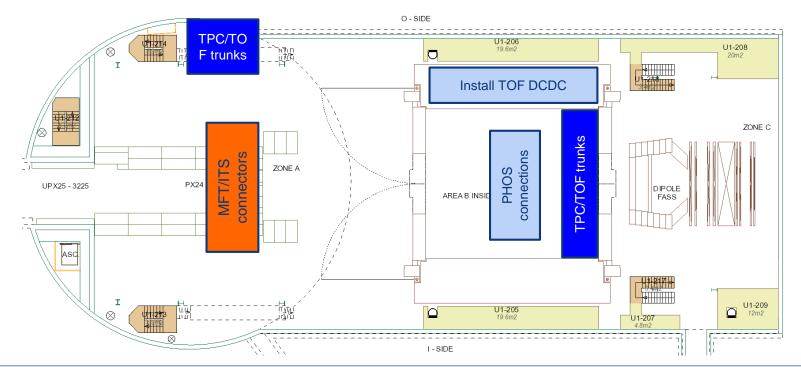




CÉRN

UX25 activities w6 – Fri 7 Feb 2020



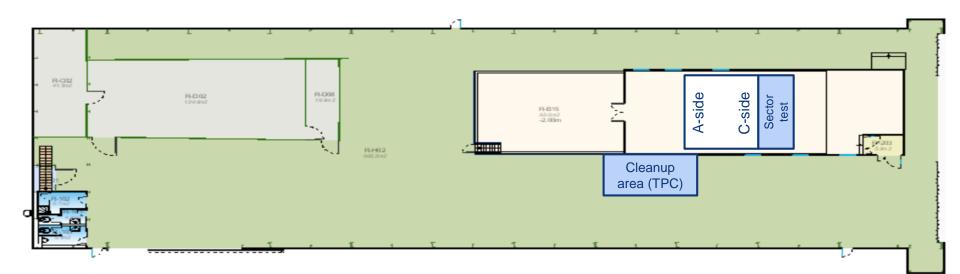




SXL2 activities w6 – Mon 3 Feb 2020



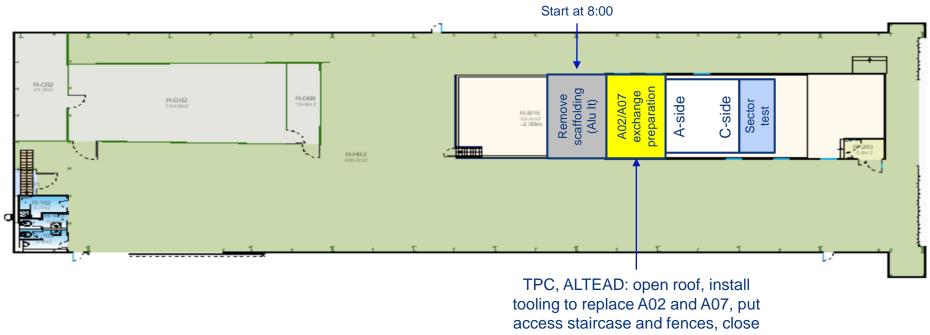
TPC: switch off cleanroom ventilation (PM)





SXL2 activities w6 – Tue 4 Feb 2020



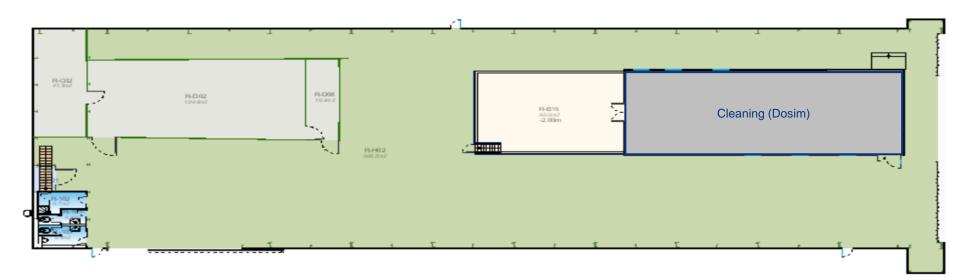




SXL2 activities w6 – Wed 5 Feb 2020



TPC: replace gas mixture with air

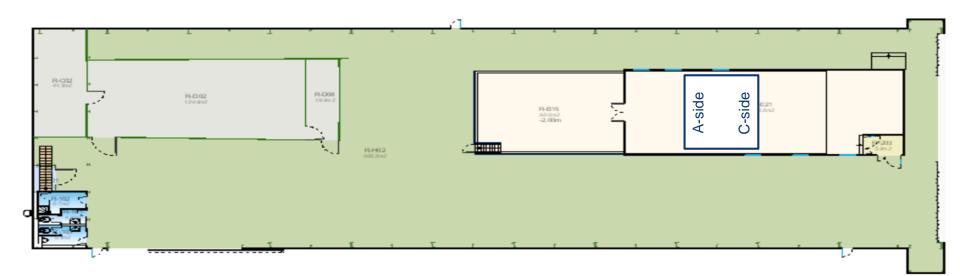




SXL2 activities w6 – Thu 6 Feb 2020



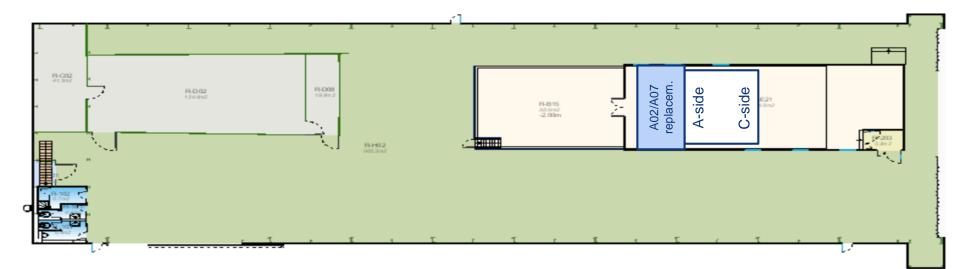
TPC: replace gas mixture with air





SXL2 activities w6 – Fri 7 Feb 2020

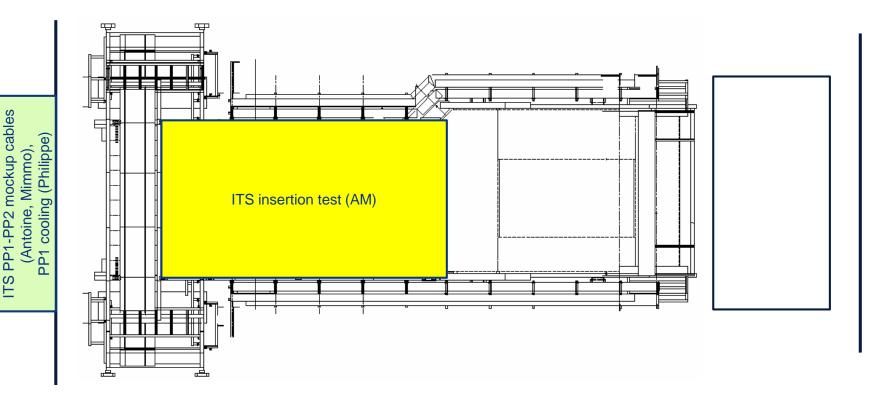






Miniframe activities w6 – Mon 3 Feb 2020

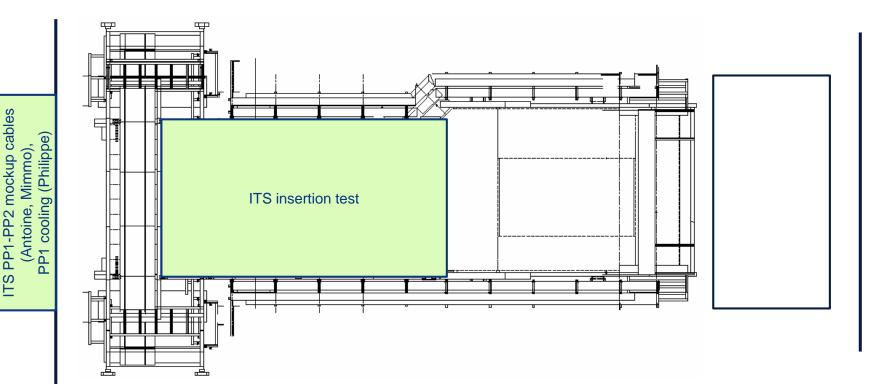
Produce and install steps to protect FO boxes; finish ITS rack supports; build ITS rack trap (Cedric)





Miniframe activities w6 – Tue 4 Feb 2020

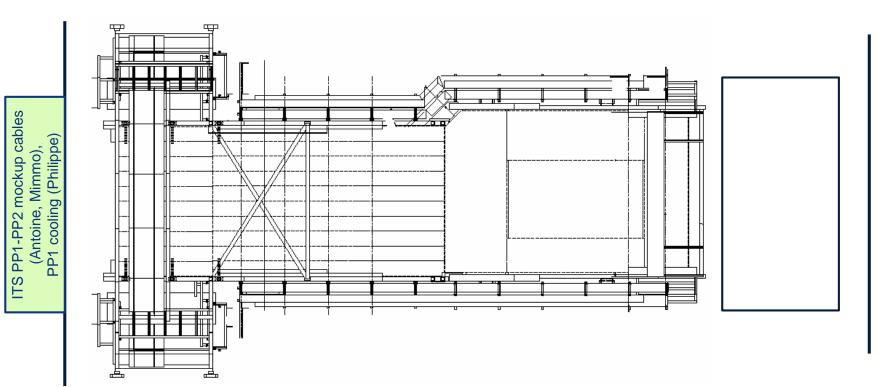






Miniframe activities w6 – Wed 5 Feb 2020

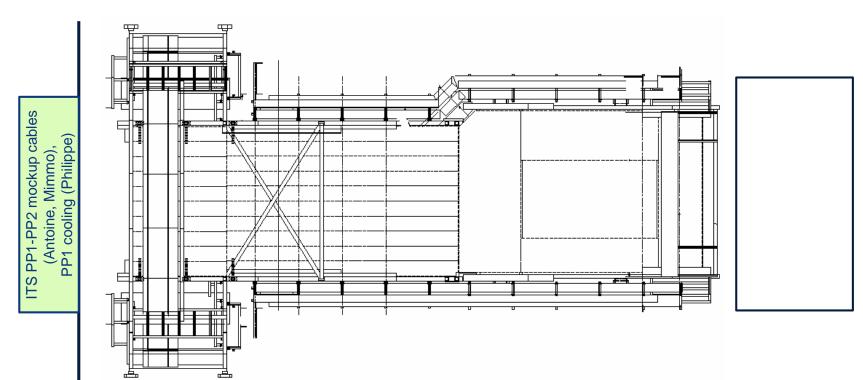






Miniframe activities w6 – Thu 6 Feb 2020

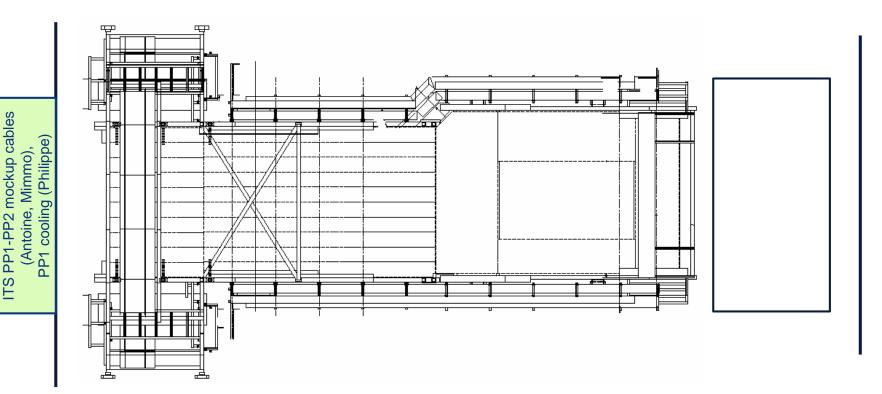






Miniframe activities w6 – Fri 7 Feb 2020









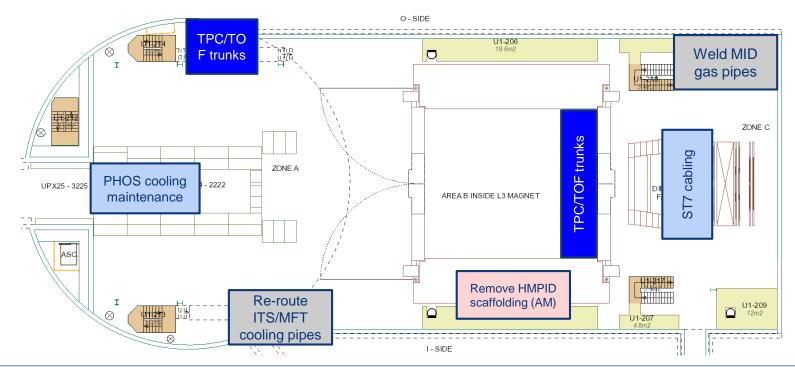
Day-by-day sequence w7



UX25 activities w7 – Mon 10 Feb 2020



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

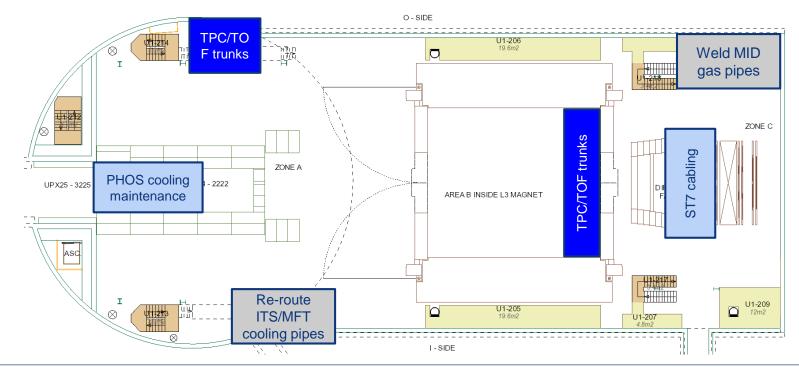




UX25 activities w7 – Tue 11 Feb 2020



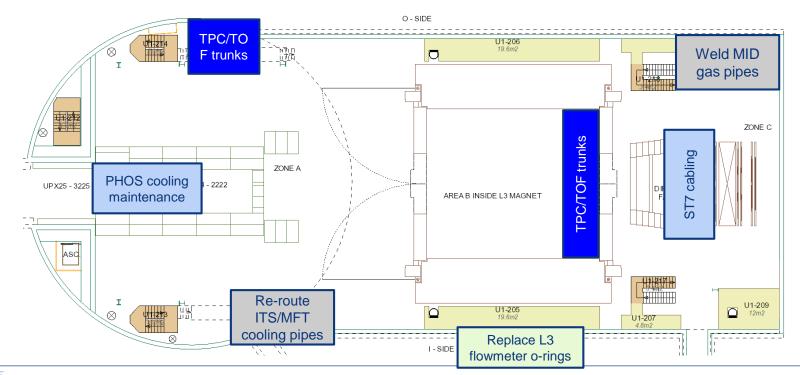
Cleaning cavern (Topnet): 13:00 to 15:00





UX25 activities w7 – Wed 12 Feb 2020

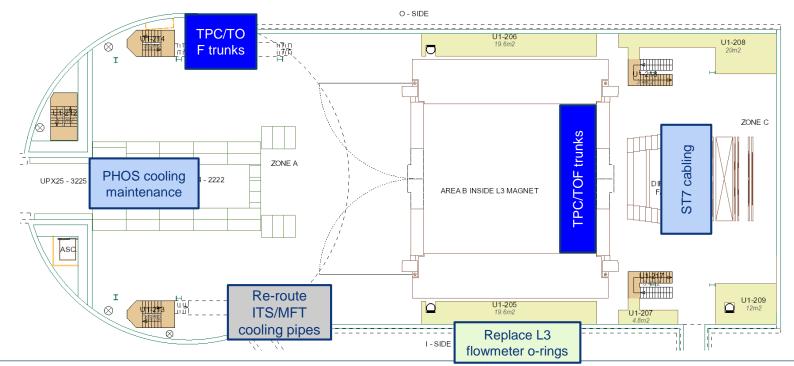




CERN

UX25 activities w7 – Thu 13 Feb 2020



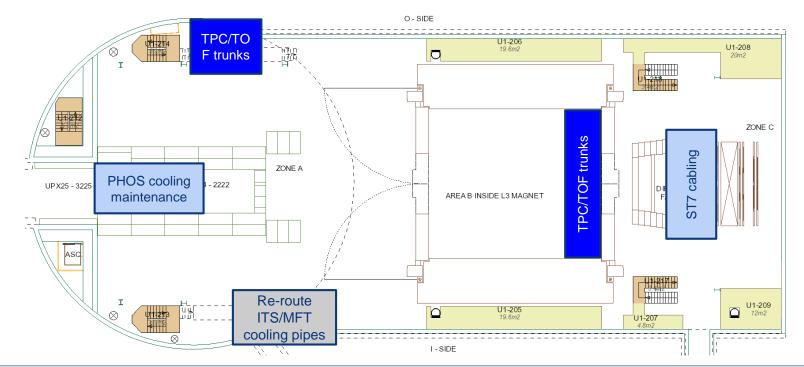




7.2.2020

UX25 activities w7 – Fri 14 Feb 2020

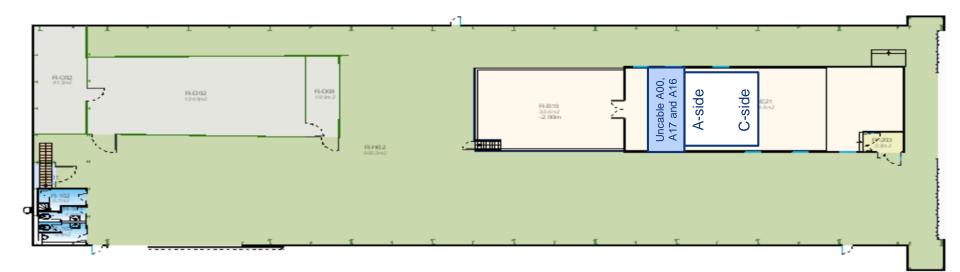






SXL2 activities w7 – Mon 10 Feb 2020

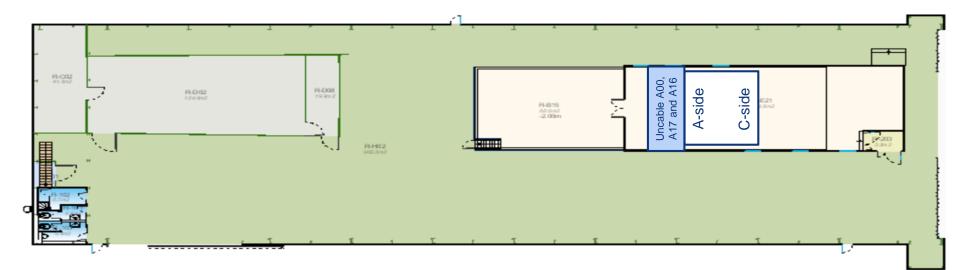






SXL2 activities w7 – Tue 11 Feb 2020

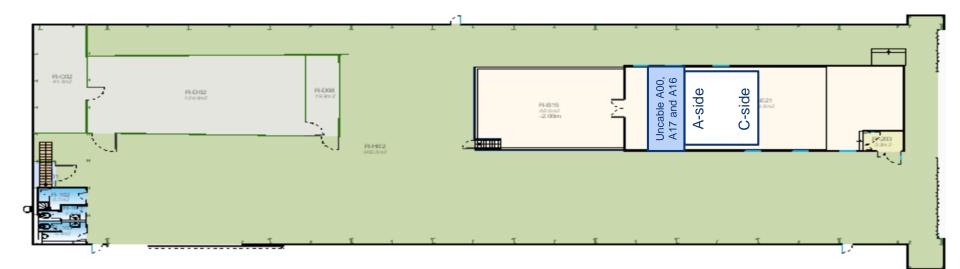






SXL2 activities w7 – Wed 12 Feb 2020

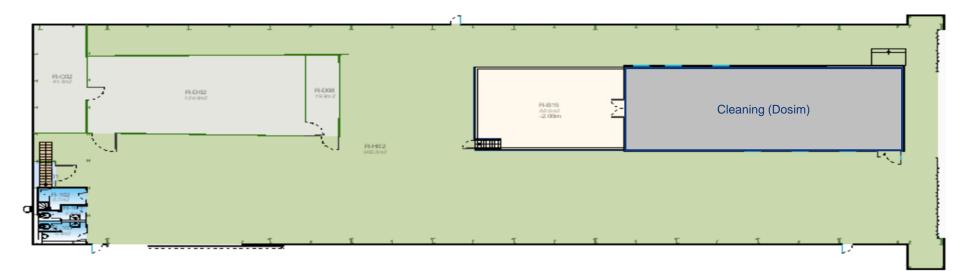






SXL2 activities w7 – Thu 13 Feb 2020



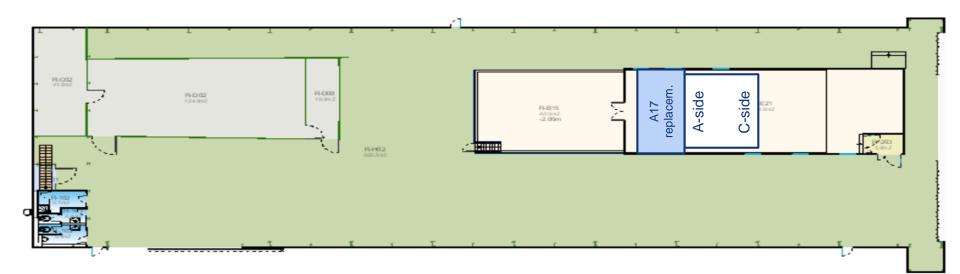




SXL2 activities w7 – Fri 14 Feb 2020



TPC: switch off cleanroom ventilation (PM)

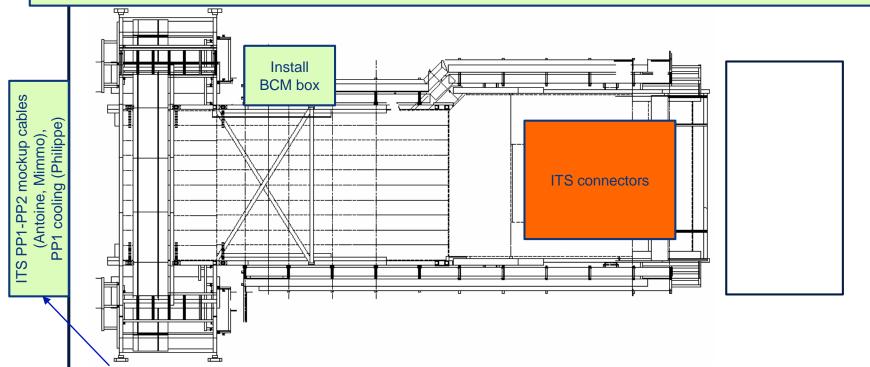




Miniframe activities w7 – Mon 10 Feb 2020



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

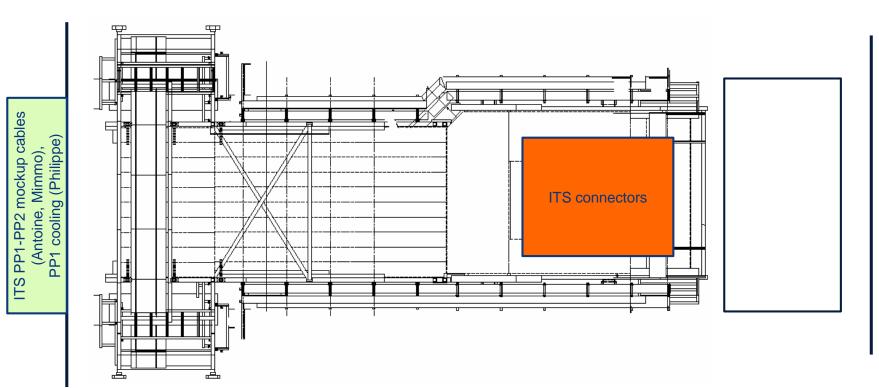


Install MFT PP1 PT and filters, cut ITS PP1 cooling pipes and put plate (Philippe)



Miniframe activities w7 – Tue 11 Feb 2020

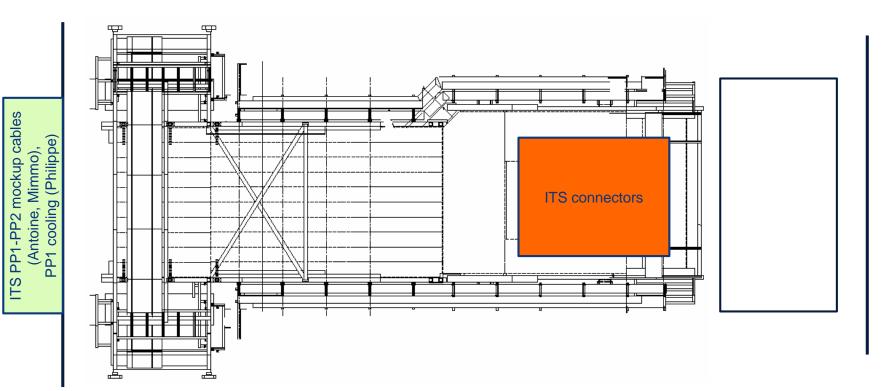






Miniframe activities w7 – Wed 12 Feb 2020

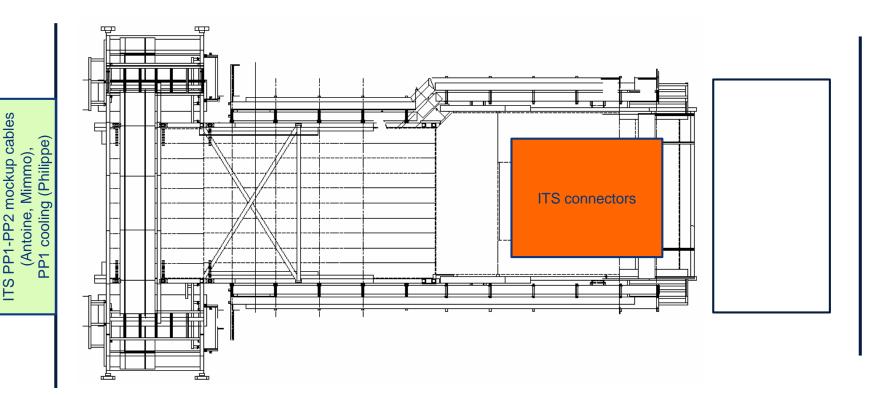






Miniframe activities w7 – Thu 13 Feb 2020

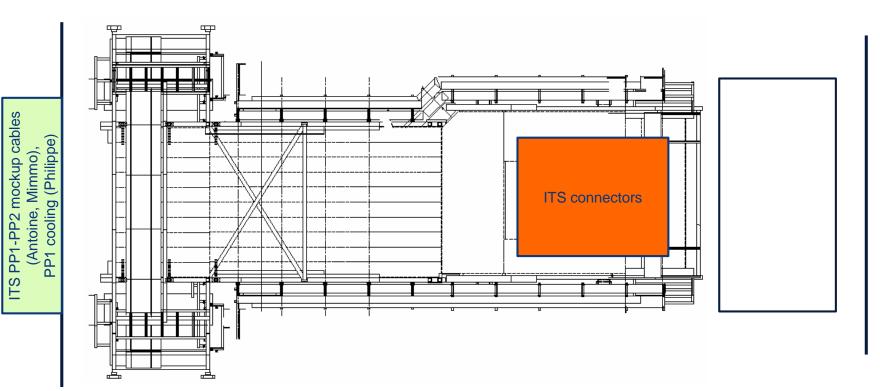






Miniframe activities w7 – Fri 14 Feb 2020







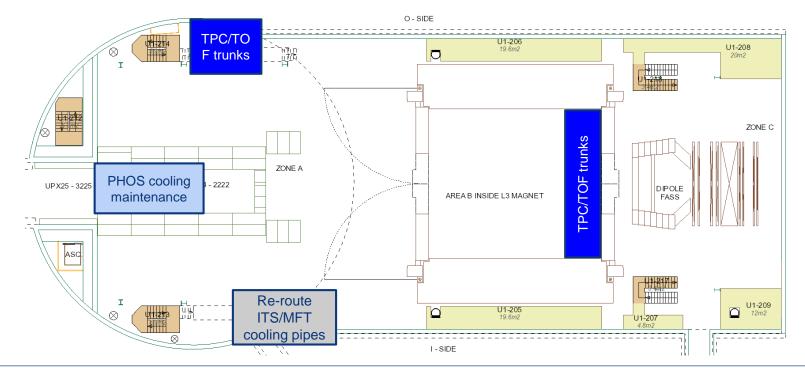


Day-by-day sequence w8



UX25 activities w8 – Mon 17 Feb 2020



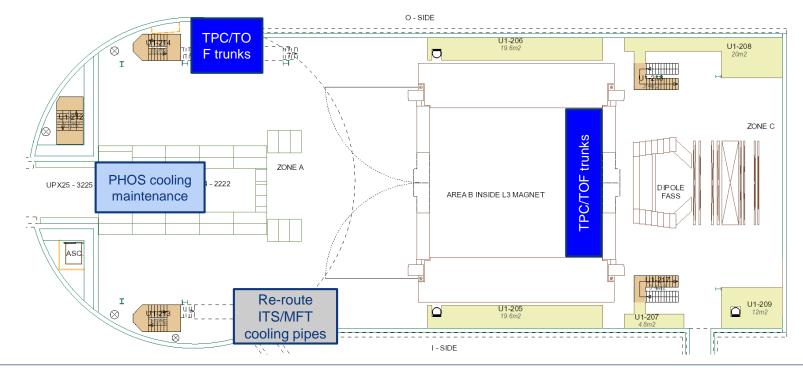




UX25 activities w8 – Tue 18 Feb 2020



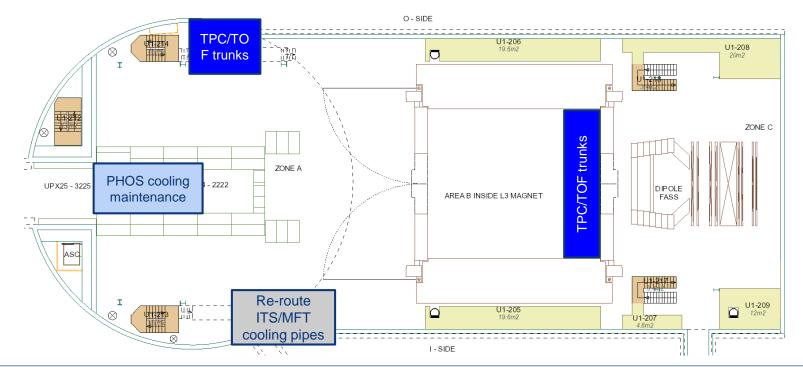
Cleaning cavern (Topnet): 13:00 to 15:00





UX25 activities w8 – Wed 19 Feb 2020



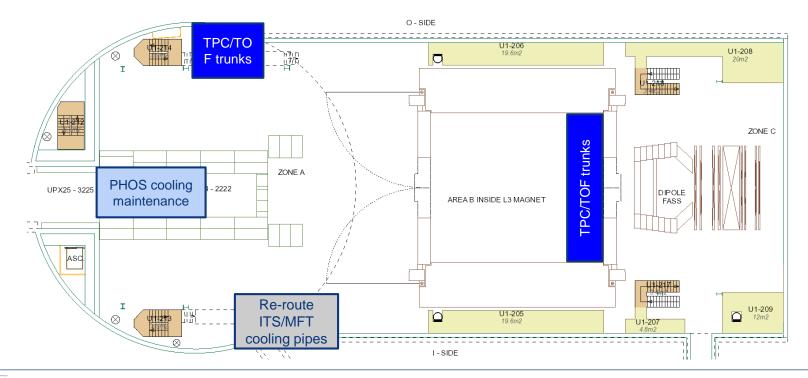




UX25 activities w8 – Thu 20 Feb 2020



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

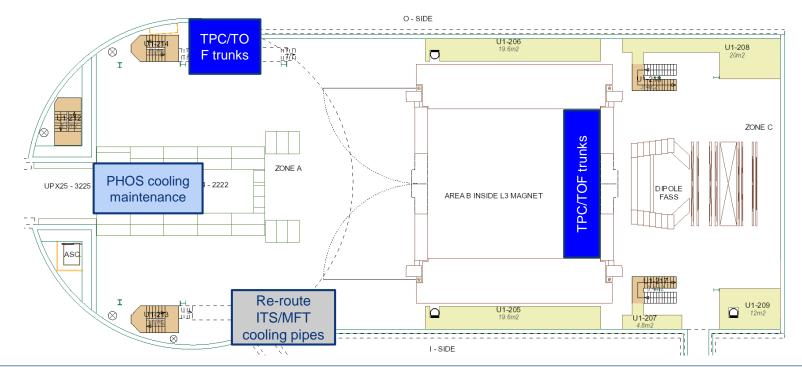




CERN

UX25 activities w8 – Fri 21 Feb 2020



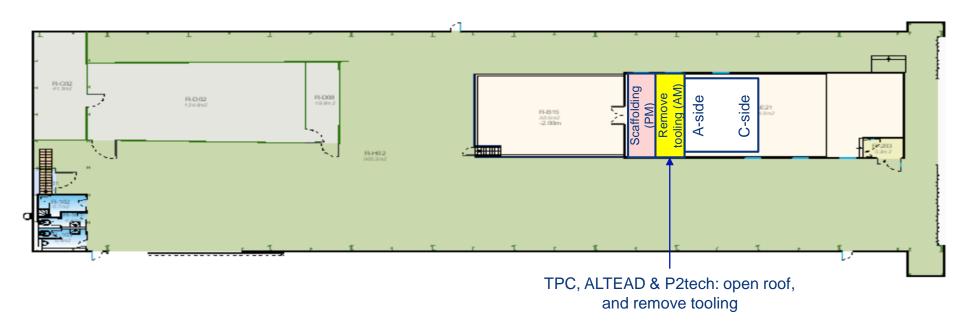




SXL2 activities w8 – Mon 17 Feb 2020



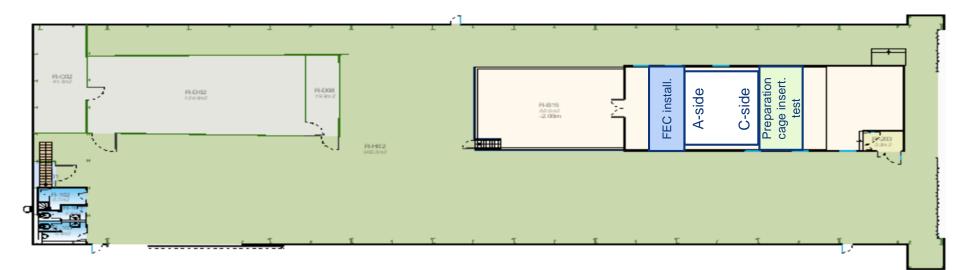
TPC: start replacing gas mixture with Ne-CO2-N2





SXL2 activities w8 – Tue 18 Feb 2020



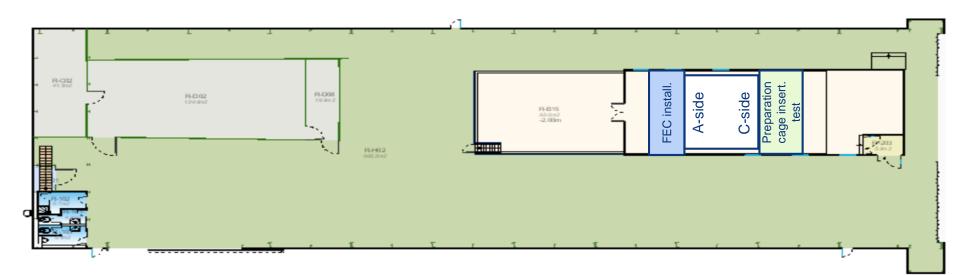




SXL2 activities w8 – Wed 19 Feb 2020



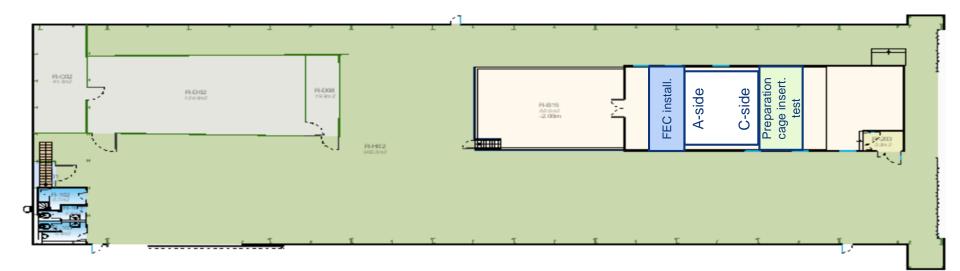
TPC survey from C-side (preparation cage insertion test)





SXL2 activities w8 – Thu 20 Feb 2020

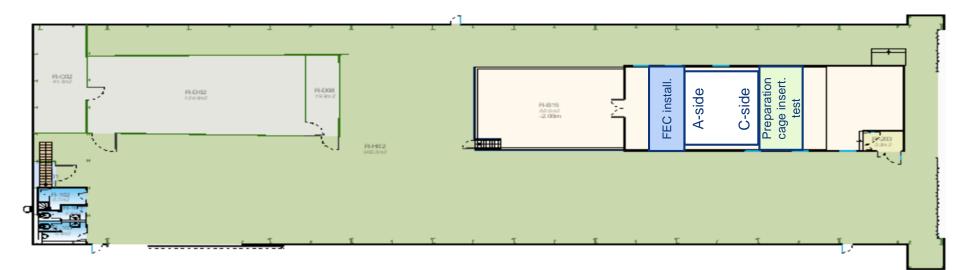






SXL2 activities w8 – Fri 21 Feb 2020

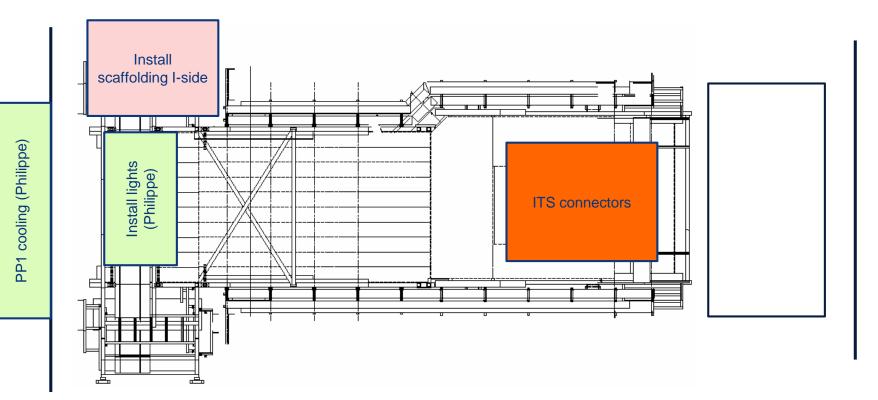






Miniframe activities w8 – Mon 17 Feb 2020

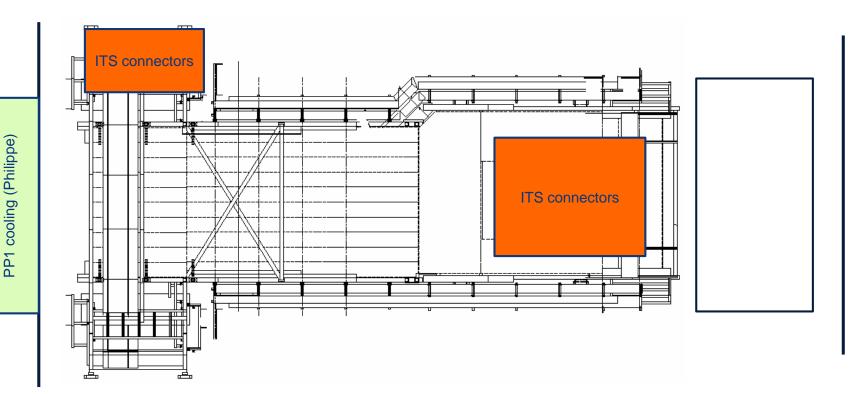






Miniframe activities w8 – Tue 18 Feb 2020

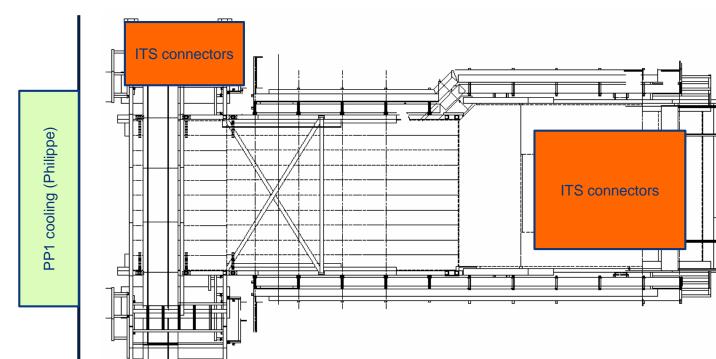






Miniframe activities w8 – Wed 19 Feb 2020

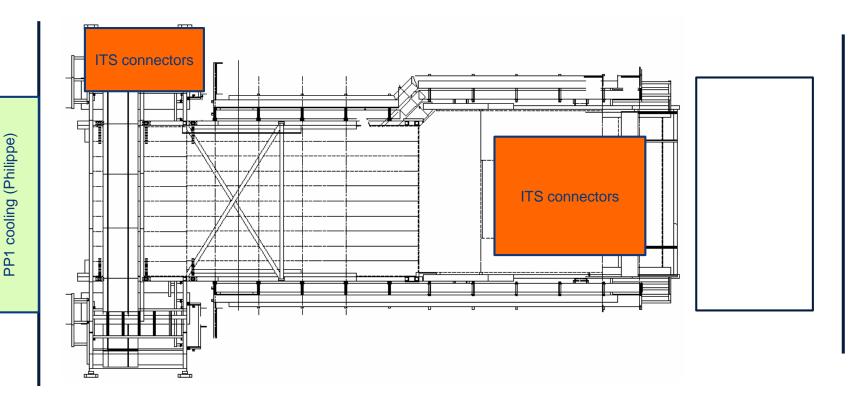






Miniframe activities w8 – Thu 20 Feb 2020







Miniframe activities w8 – Fri 21 Feb 2020



