LS2 planning meeting

A.Tauro





General information



LS2 duration: 27 months

Access mode: general

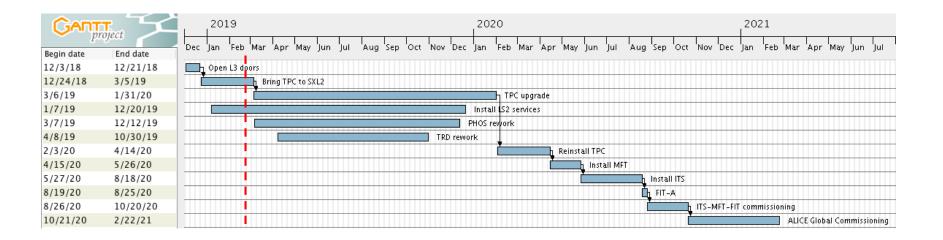
Underground visits: possible from 16 December 2018 (no visits during Xmas closure)

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





TPC extraction timeline





Install Delphi Frame



Remove SPD, FWD detectors and beampipe



Remove TPC and bring it to SXL2



Miniframe extraction

7 Jan '19 9 Jan



TPC to parking position

23 Jan



Remove ITS

18-22 Feb

25 Feb

5 Mar '19



11 Feb

EN-EL interventions



- 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:

- 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



	LS2 status
TPC	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 until late 2020. Need a few weeks with system ON in late 2019 or 2020 (tbc)
HMP	Always under Ar backup
PHO	OFF till Oct-19, then need N2
CPV	OFF till Oct-19, then need gas (Ar/CO2 80/20) Need humidifier in RUN3
PMD	Dismounting
MCH	OFF till May-19, then need gas (Ar/CO2 80/20)
MTR	missing info



Safety systems maintenance



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

CERN Open Days

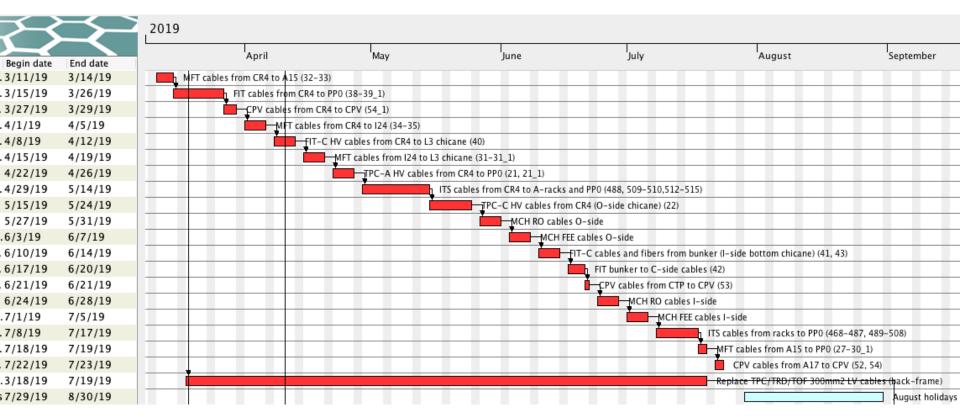


• 14 and 15 September 2019



Planning copper cables (EN-EA)

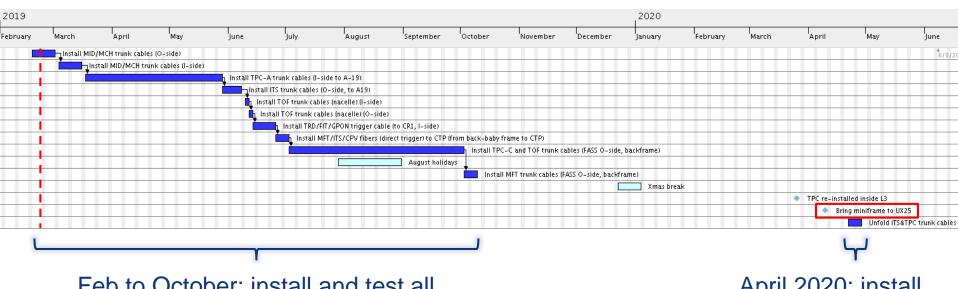






Planning optical fibers (EN-EL)



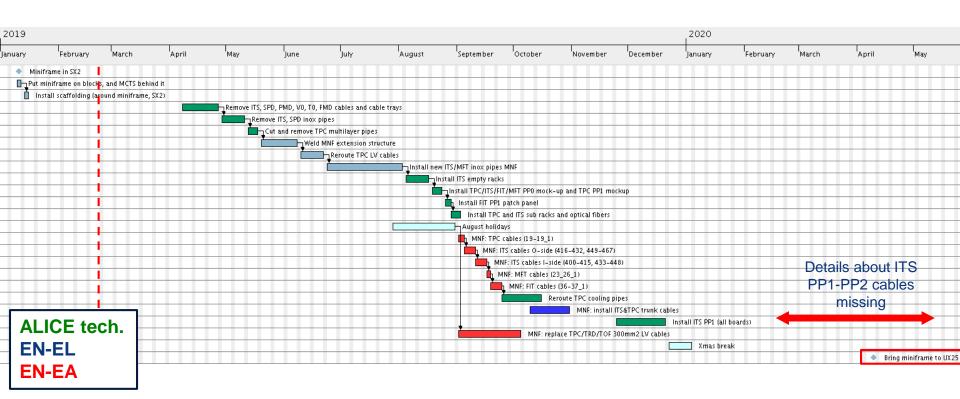


Feb to October: install and test all trunk cables

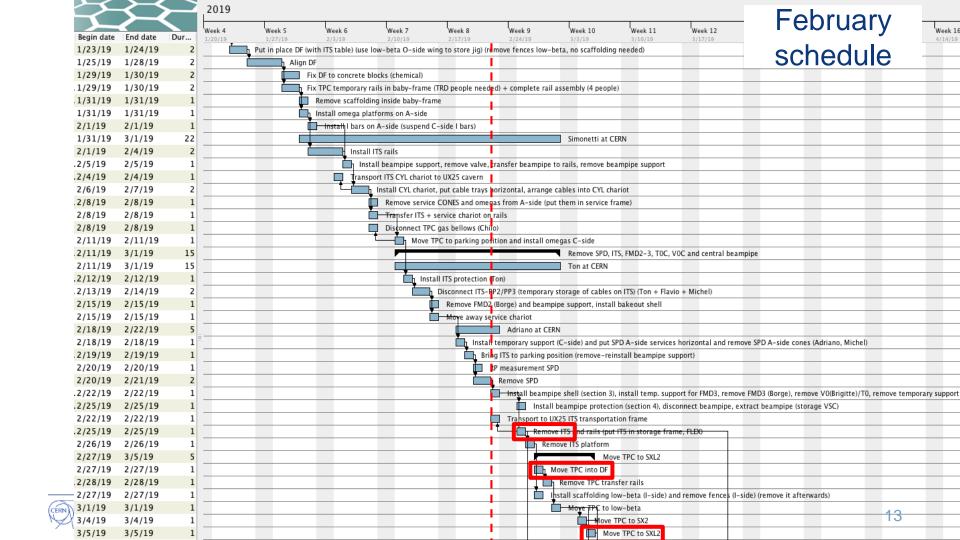
April 2020: install TPC/ITS fibers after Miniframe installation

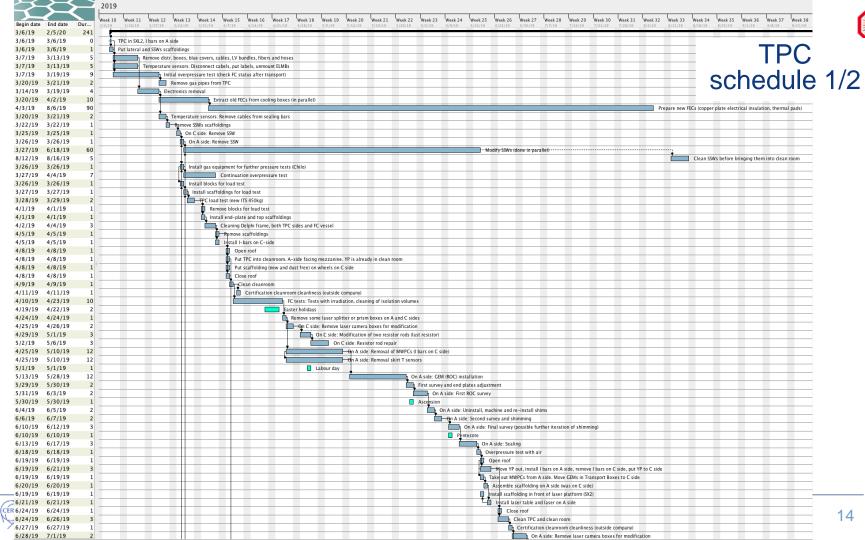
Miniframe planning (rework in SX2)







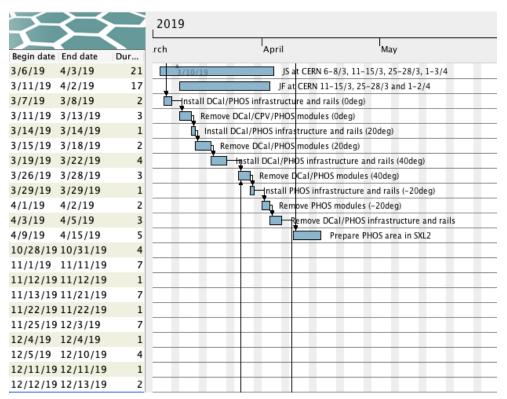


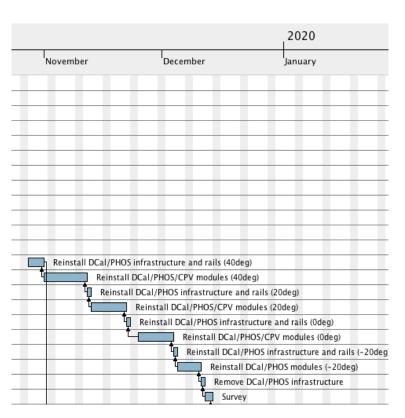


	=> -	2019						2020				
		July	August	September	October	November	December	January	February	March	April	Ma
Begin date End												
.7/2/19 7/8/			Connect and operate laser									
	5/19 5		On A side: Reinstall laser camera l		boxes. Align with laser					_		
	8/19 3		On A side: Modification of two							_	ГРС	_
	9/19 1		On A side: IFC T sensor cabling									_
	0/19 9		On C side: Removal of MWPCs (I bars or	ı A side)								
			On C side: Removal skirt T sensors							- ccho	dule 2	つ/つ -
	3/19 9	,	On C side: GEM (ROC) insta							- 2011년	uuit /	<u> </u>
	4/19 1		Survey and end plates ad									
	5/19 1		On C side: First ROC sur									
	9/19 2			I, machine and re-install shims								
	1/19 2		On C side: 2nd su									
8/1/19 8/2				survey (possible further iteration	of shimming)							
.8/5/19 8/7			On C side:									
.8/8/19 8/9				ssure test with air								
	6/19 5			On C side: Reinstall laser prism, spl	litter and camera boxes. Align	with laser						
	9/19 1		4	Open roof								
	0/19 2	2		Take out YP, take out MWPCs, i								
	1/19 1			Remove A side I-bars, install A								
	2/19 1	L			lding (new, dust free) for C side	le						
	2/19 1			Close roof								
	3/19 1			Assemble scaffolding on C s								
8/23/19 8/23	7/19 3	3		Clean clean room, Delph	hi frame and TPC							
.8/28/19 8/2	8/19 1	L		Certification cleanroon	n cleanliness (outside company	y)						
	9/19 1	L		On C side: IFC T senso	or cabling along sealing bars							
.8/29/19 9/3		1			SSW and FEC frames							
9/4/19 9/5	/19 2	2		On A side: Inst	all gas infrastructure on SSW							
9/6/19 9/1	1/19 4	1		On A sid	le: Install HV protection resisto	or boxes and cables						
9/6/19 9/1	1/19 4	1		On A sid	le: Install ELMBs, connect cable	es , install ROC T sensor cables	s .					
9/5/19 9/5	/19 1	l °		Jeune Genevois	S							
9/12/19 9/12	2/19 1	L		On A si	de: ROC chamber body cooling	g connections						
9/12/19 9/20	6/19 11	L			On A side: Install FECs	and test						
9/27/19 10/	10/19 10)			On A sid	le: Install LV cables, fibers, coo	ling tubes					
10/11/19 11/	14/19 25	5				On	A side: Sector tests, 2 sectors at	t time				
.9/4/19 9/9	/19 4	1		On C side:	Align SSW and FEC frames							
9/10/19 9/12	2/19 3	3		On C si	de: Install gas infrastructure o	on SSW, connect to gas system						
9/13/19 10/	3/19 15	5			Fill with gas mix	xture (Ne-CO2-N2)						
10/4/19 10/	10/19 5	5			Verify ga	as tightness						
9/13/19 9/18	8/19 4	1		C	on C side: Install HV protection	n resistor boxes and cables						
9/13/19 9/18	8/19 4	1		t c	On C side: Install ELMBs, conne	ct cables, install ROC T sensor	cables					
9/19/19 9/19	9/19 1	L		ı i	On C side: ROC chamber body	cooling connections						
9/27/19 10/	11/19 11	ı			On C sie	de: Install FECs and test						
10/14/19 10/3	31/19 14	1				On C side: Install	LV cables, fibers, cooling tubes					
11/15/19 12/	19/19 25	5						On C side: Sector tests, 2 sectors at t	ime			
11/15/19 12/	12/19 20)					On A s	ide: ITS integration test				
12/13/19 12/	19/19 5	5						Repair of inner heat screen panel				
.12/20/19 1/10	6/20 20)					ì	Test full	TPC with 2 X-ray sour	ces		
12/23/19 1/3	/20 10)						Xmas break				
1/17/20 1/30)							Chamber replace	ement (open roof, put YP, clean	clean room, remove FECs, r	replace ROC,)
1/31/20 2/3									Disconnect			
1/31/20 2/4		3								it covers and add all cooling cor	nnections, test for leaks, se-	cure fibers and cal
.2/5/20 2/5										raffoldings (clean room)		

DCal/PHOS/CPV plans





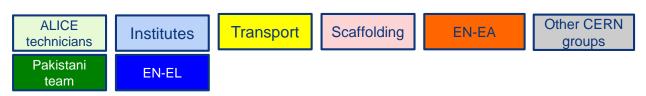


Repair PHOS #4 in SXL2 from mid April





Day-by-day sequence w9





01/3/19

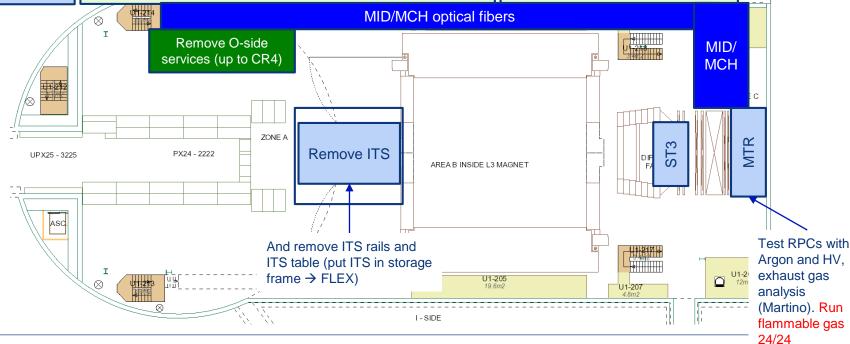
UX25 activities w9 – Mon 25 Feb 2019



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

Fire detection maintenance (racks) – whole week Transportation 8 ST1 boxes to Prevessin

Klaus: FB visit | P2tech: prepare SSW supporting feet in SXL2 | Reconfigure TRD platform





UX25 activities w9 – Tue 26 Feb 2019

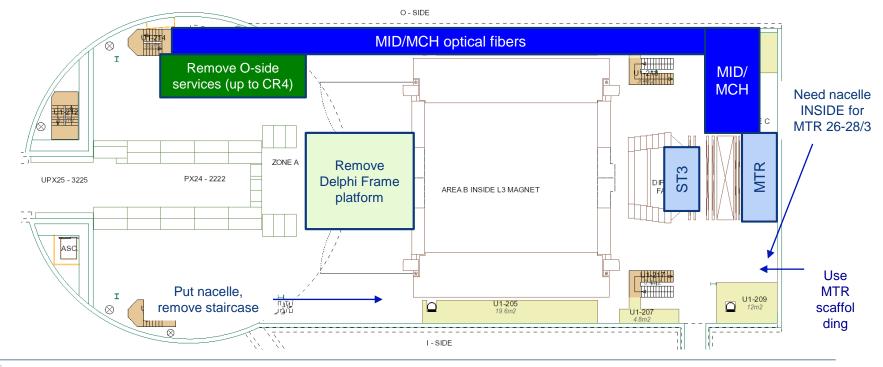


Put accelerometers on Delphi Frame

Yannick back

Klaus: FB visit

Take Luciano's pallets out

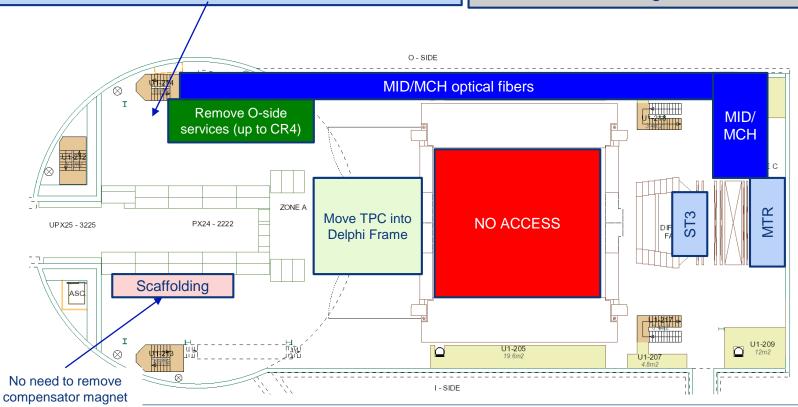


UX25 activities w9 – Wed 27 Feb 2019



ALTEAD: transport inox pipes (4 boxes) from SX2 to UX25

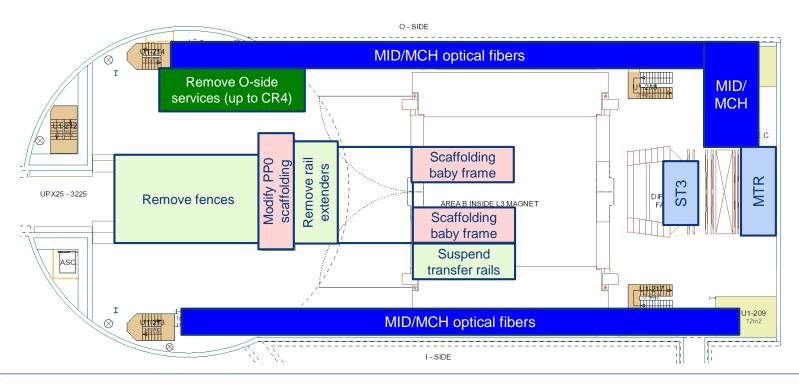
PHOS/DCAL cooling disconnection after 6pm



UX25 activities w9 - Thu 28 Feb 2019



PHOS/DCAL cooling disconnection after 6pm





Status w9



- Cavern:
 - ITS removed
 - ITS table disassembled
 - Laser boxes C-side dismounted
 - TPC in Delphi frame instrumented and moved to Low Beta platform today
 - Terminations for all optical fibers O-side are now completed and tested. I-side fiber pulling started
- Surface:
 - TRD platform reconfigured for module 2

Highlights w9 – ITS removal

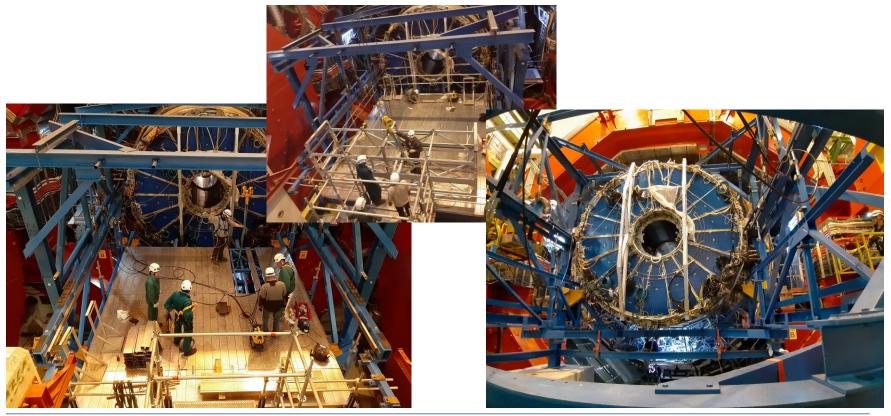






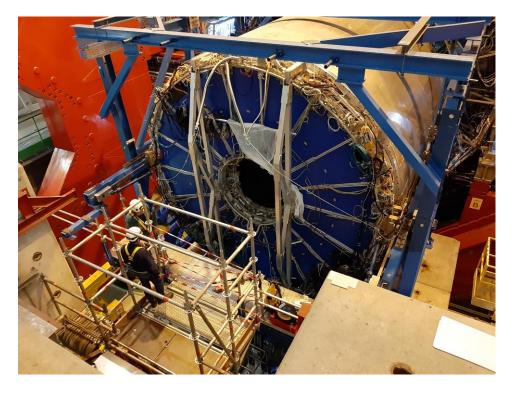
Highlights w9 – ITS platform







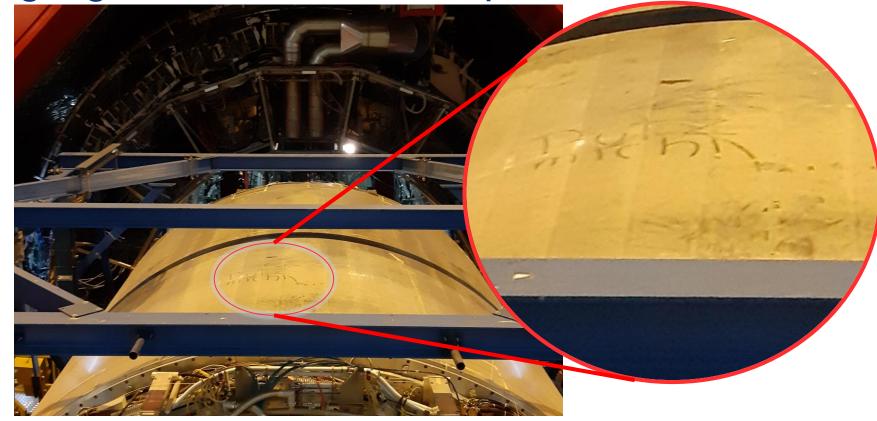






Highlights w9 – TPC in Delphi frame

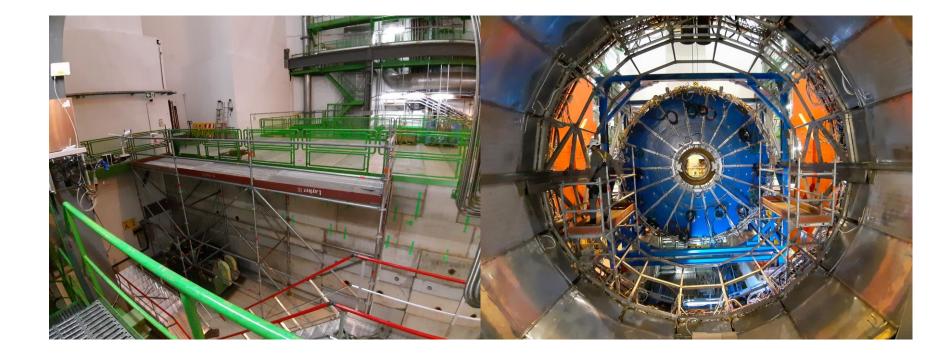






Highlights w9 – Scaffolding





Highlights w9 – TRD platform

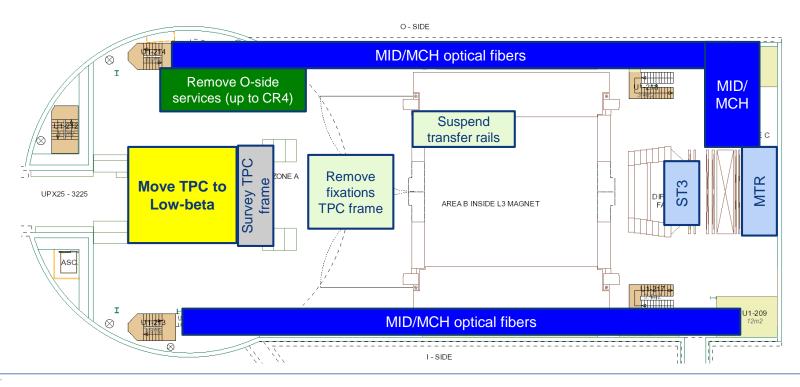




UX25 activities w9 - Fri 1 Mar 2019



Descend scaffolding for back frame and CPV







Day-by-day sequence w10





UX25 activities w10 - Mon 4 Mar 2019



ALTEAD+P2tech: remove PX24 fences (SX2)

Pre-check new beam-pipe support interfaces

No visits P2, no access PX24 and A-side during TPC transportation to SX2

Secure TPC bellows/protect TPC Instrument TPC for transport Fence off road parking day before **ALTEAD** MID/MCH optical fibers starts at MID/ 7:00 AM U 1218 MCH disconnection Scaffolding backframe ZONE A ventilation **TPC** Move TPC to UPX25 frame SX2 AREA B INSIDE L Nacelle needed for Cable trays fiber optics MID/ 217 e ALTEAD: transport **MCH** TPC frame SXL2 U1-205 19.6m2 MID/MCH optical fibers

SXL2 activities w10 – Mon 4 Mar 2019





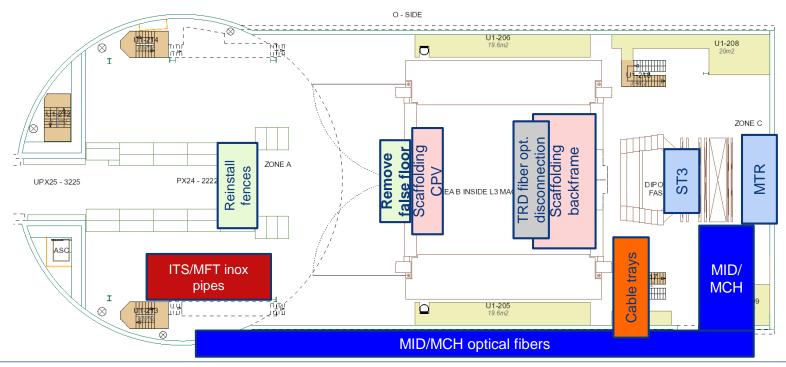


UX25 activities w10 - Tue 5 Mar 2019



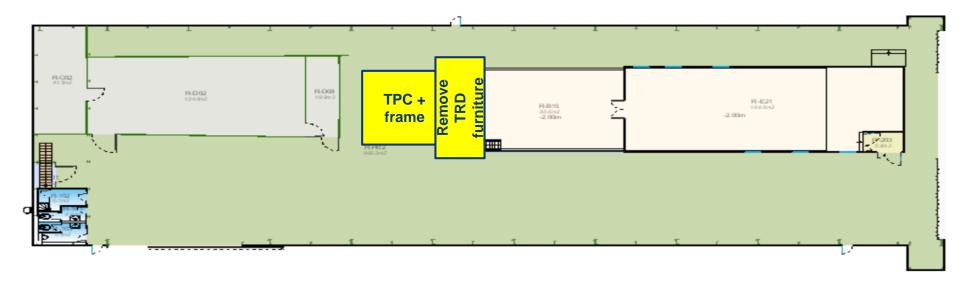
No visits P2

ALTEAD: transport TPC to SXL2 (fence off road the day before)



SXL2 activities w10 – Tue 5 Mar 2019

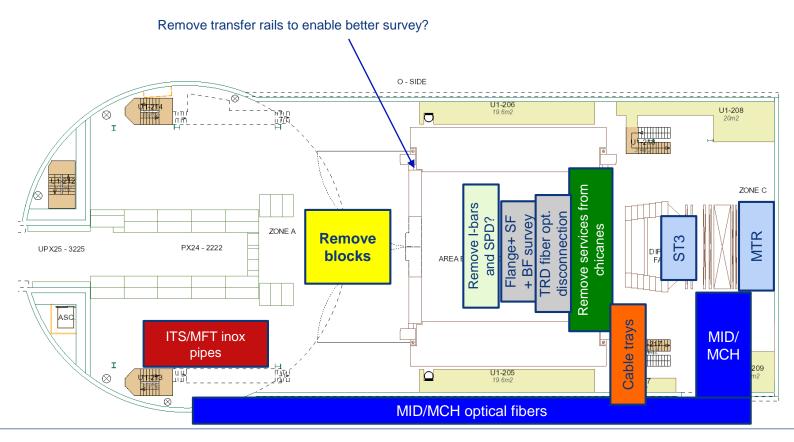






UX25 activities w10 - Wed 6 Mar 2019

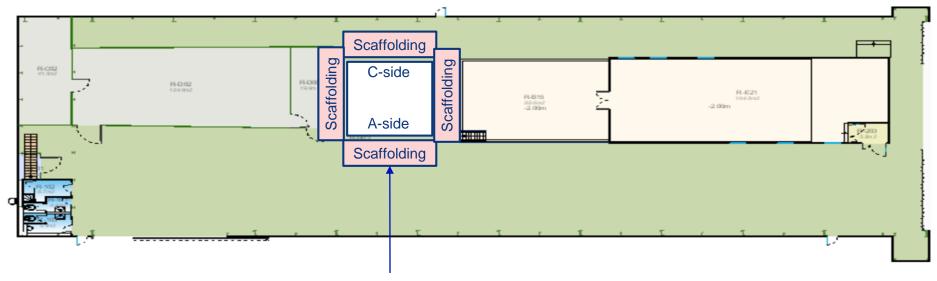






SXL2 activities w10 – Wed 6 Mar 2019



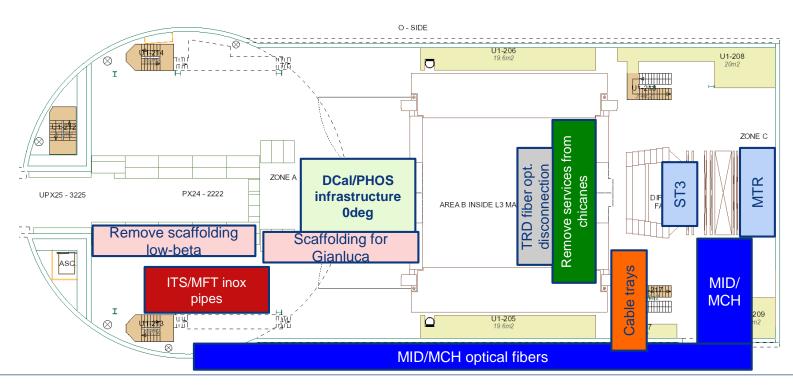


Test new new beampipe support and remove Ibars before putting scaffolding

UX25 activities w10 - Thu 7 Mar 2019



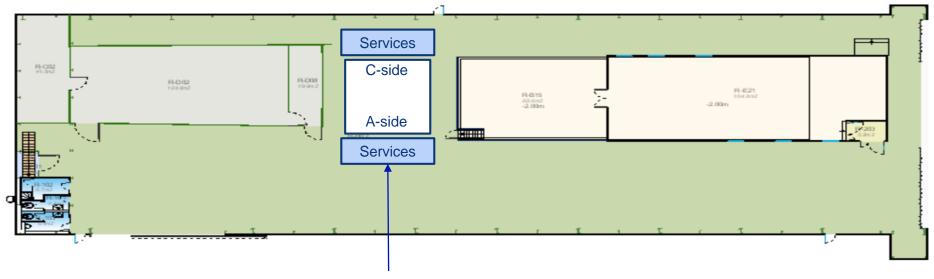
Move nacelle I-side to low beta platform





SXL2 activities w10 – Thu 7 Mar 2019

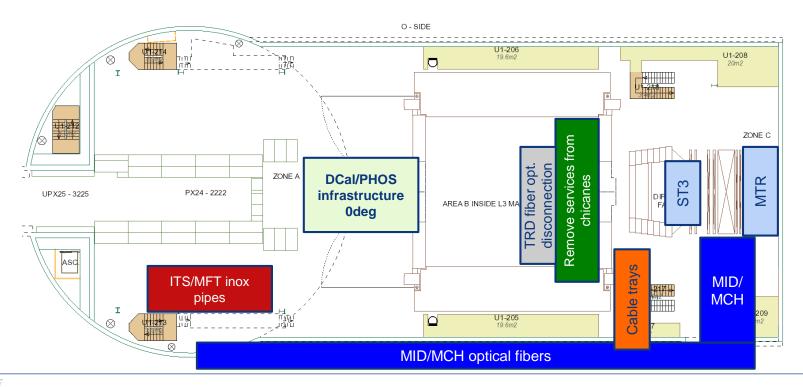




Remove distr. boxes, blue covers, cables, LV bundles, fibers and hoses Temperature sensors: Disconnect cables, put labels, unmount ELMBs Initial overpressure test (check FC status after transport)

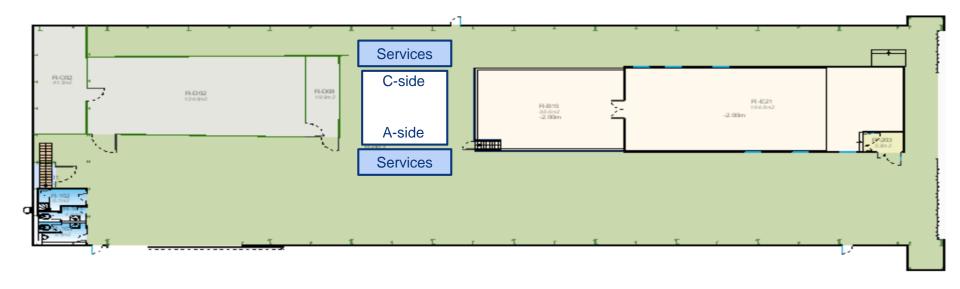
UX25 activities w10 – Fri 8 Mar 2019





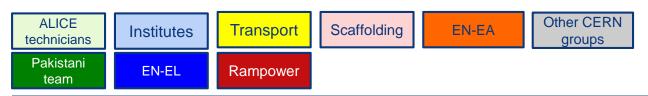
SXL2 activities w10 – Fri 8 Mar 2019







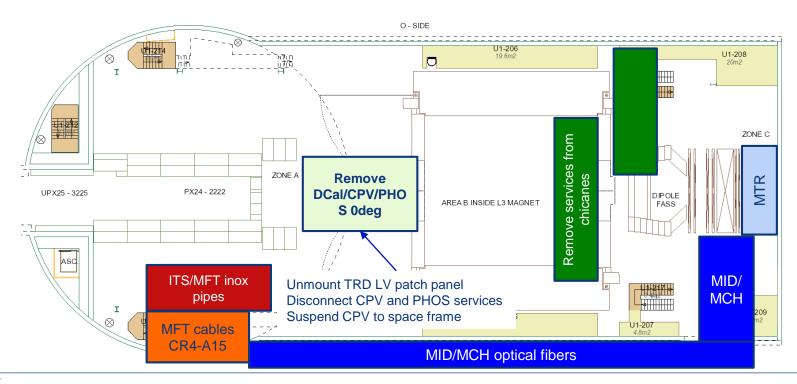
Day-by-day sequence w11





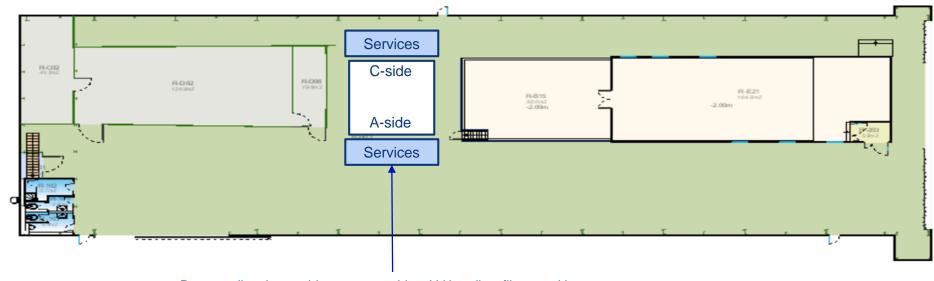
UX25 activities w11 – Mon 11 Mar 2019





SXL2 activities w11 – Mon 11 Mar 2019

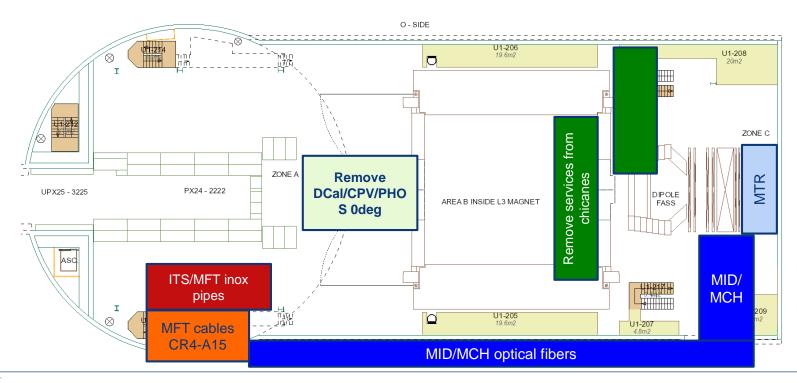




Remove distr. boxes, blue covers, cables, LV bundles, fibers and hoses Temperature sensors: Disconnect cables, put labels, unmount ELMBs Initial overpressure test (check FC status after transport)

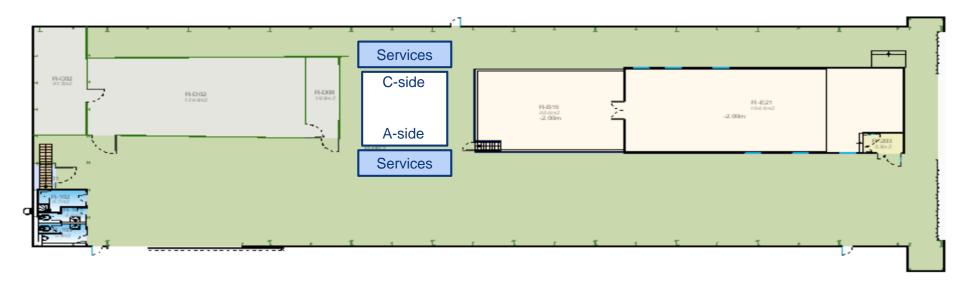
UX25 activities w11 – Tue 12 Mar 2019





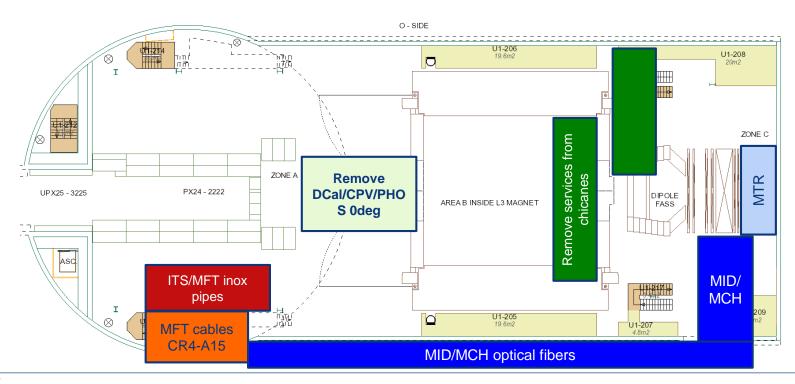
SXL2 activities w11 - Tue 12 Mar 2019





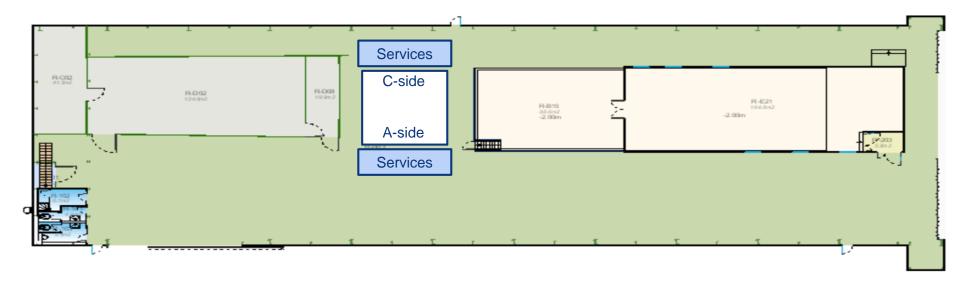
UX25 activities w11 – Wed 13 Mar 2019





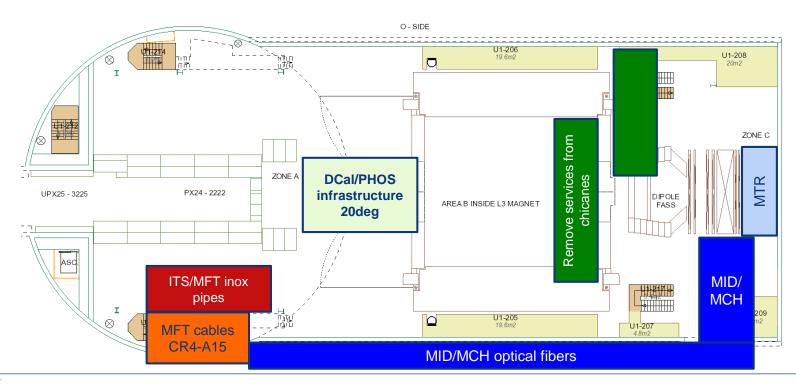
SXL2 activities w11 – Wed 13 Mar 2019





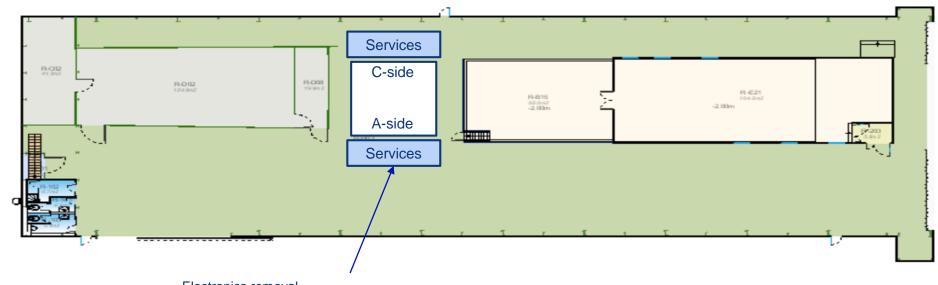
UX25 activities w11 – Thu 14 Mar 2019





SXL2 activities w11 – Thu 14 Mar 2019

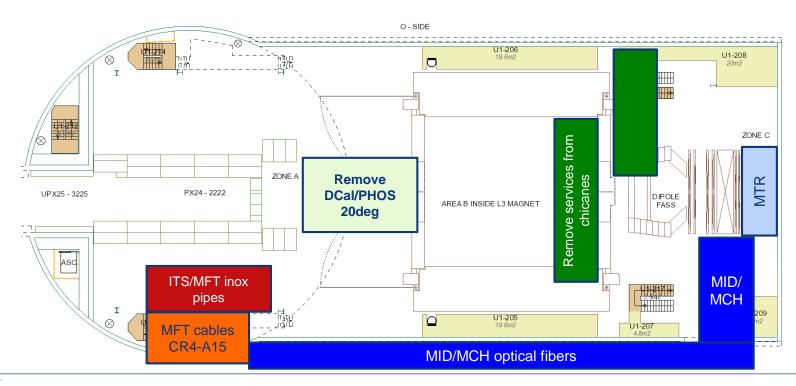




Electronics removal Initial overpressure test (check FC status after transport)

UX25 activities w11 – Fri 15 Mar 2019





SXL2 activities w11 – Fri 15 Mar 2019



