

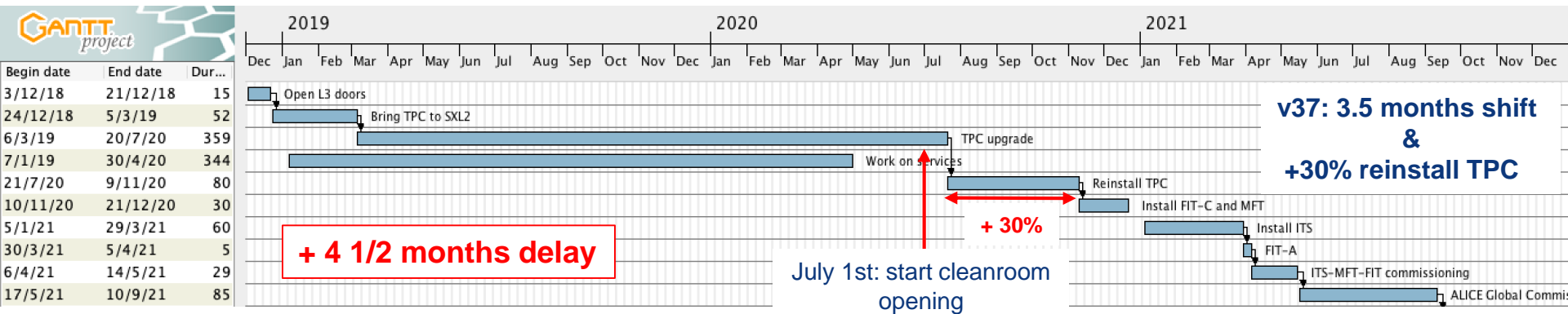
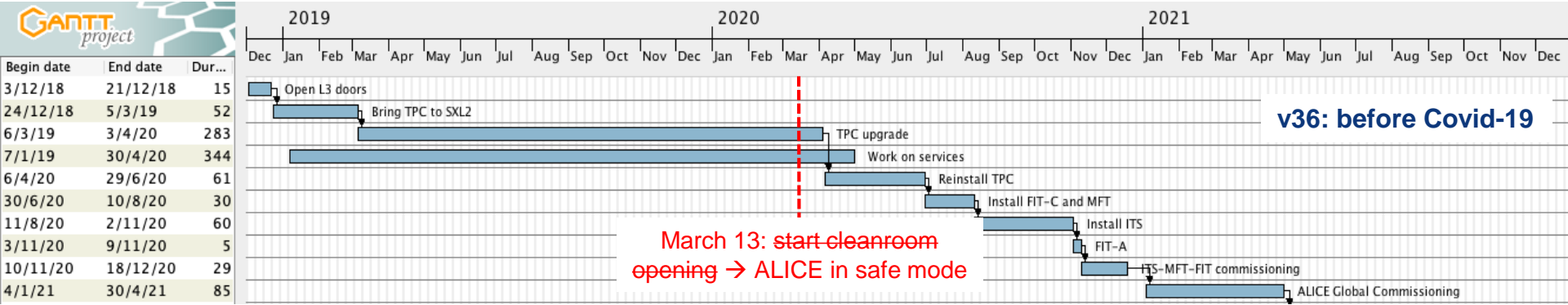
ALICE restart plan

ALICE TC



ALICE

Detector reinstallation sequence



Detector installation sequence



The TPC must of course be fully commissioned in the cleanroom before starting the installation (6+2 weeks).

The TPC + Beampipe + Miniframe installation sequence requires the TC team and the TPC core team. Travel only by 1-2 people who are not in the region (Bernd, Joerg ?).

MFT/ITS/FIT surface commissioning relies heavily on travel from institutes and it is difficult to predict whether they can be ready for installation by the end of the year.

It might still be an interesting option to start the TPC/beampipe/Miniframe installation sequence in July. It would allow full connection of the TPC in the cavern and start of commissioning.

Risks & mitigation

Safety Criteria

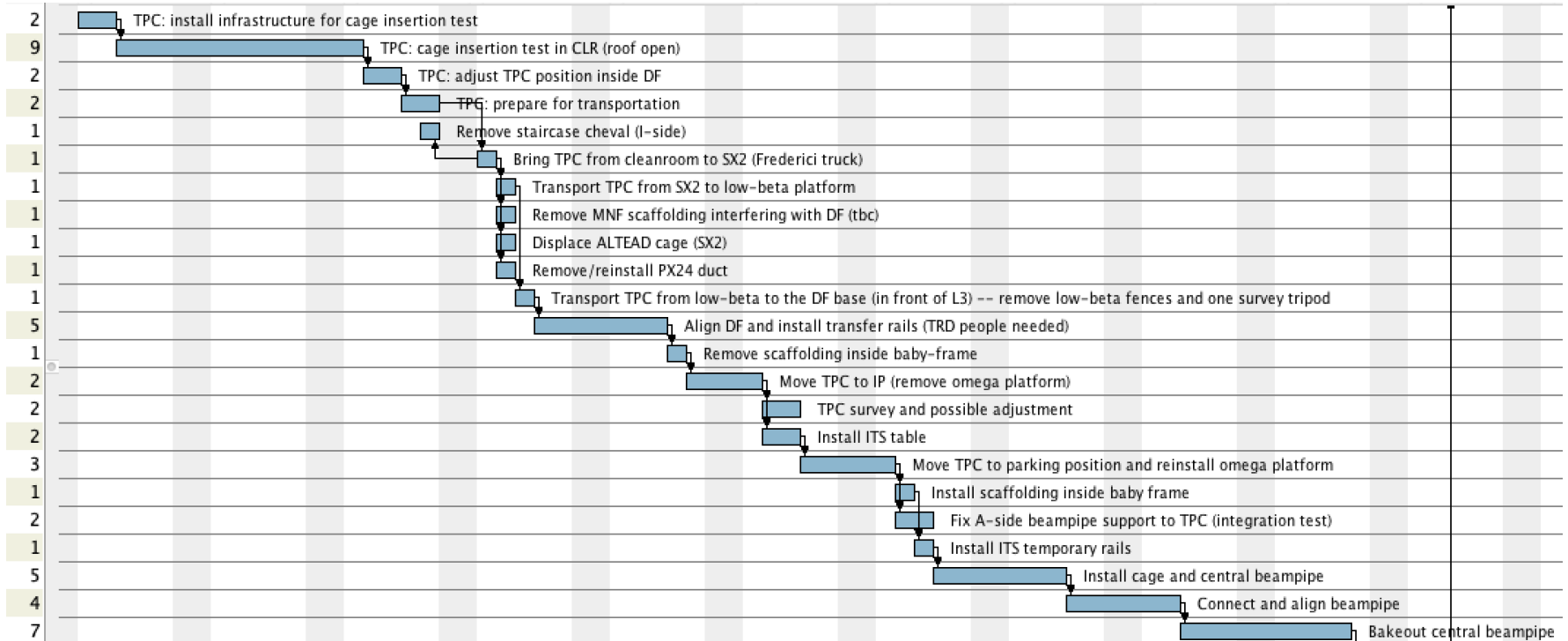
1. **Risk from Covid → contagion**
 - **Mitigation** → respect of Covid-Safety rules; prediction of situations that could be at risk (TPC transfer rails installation ex. 4 people in small space for heavy hdw manual handling,...)
2. **Risk from application of Covid-Safety rules → injuries due to unusual working conditions**
 - **Mitigation** → avoid derogation to standard safety rules (ex. working alone,...), leave time to get used to the new daily working conditions and Covid PPE, increase the time allocated to activities.

LS2 success criteria

1. **Risk from Covid → stop of activities due to contagion**
 - **Mitigation** → avoid that the contagion of one component in the team put the entire team in quarantine (limit individual number of close contact within one day), plan for a sudden forced stop of an activity while keeping the hardware in safe conditions
2. **Risk coming from application of Covid-Safety rules → hardware damage due to unusual working conditions**
 - **Mitigation** → leave time to get used to the new daily working conditions and Covid PPE, increase the time allocated to activities.

TPC/ITS/MFT sequence (1/3)

Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10



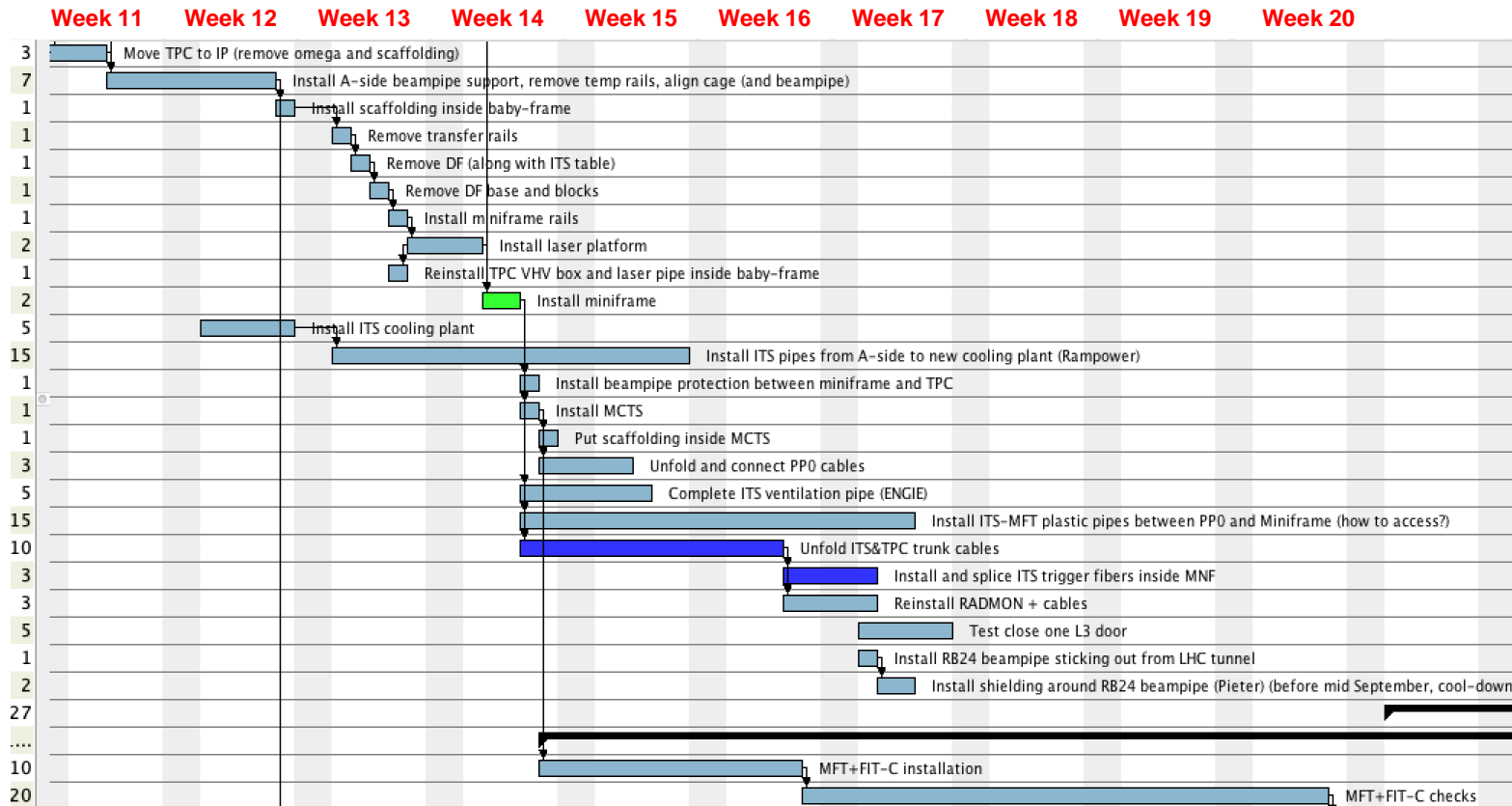
Resource table (wks 1 to 10)



Week from CERN restart	Tasks	Resources	Remarks	Total # of people
1	Cage insertion test; TPC RO test	ALTEAD (3); P2tech (YK+ FB+GR+GL) (4); survey (2); TPC crew (5)	ITS table available at P2 from day3 Cage available at P2 from day4	22 (14 + 8)
2	Cage insertion test; TPC RO test	ALTEAD (3); P2tech (YK+ FB+GR+GL) (4); survey (2); TPC crew (5)		22 (14 + 8)
3	TPC disconnection and preparation to transport; TPC adjustment	ALTEAD (5); P2tech (YK+SM+LE+CR) (3); survey (2); TPC crew (incl. Chilo) (5)		23 (15 + 8)
4	TPC transportation	ALTEAD (5); Frederici (1); P2tech (YK+SM+LE+CR) (4); TPC crew (2); TRD crew (Bernd, Anastasia) (2)	CV to remove PX24 air duct	25 (14 + 8 + 3)
5	Align DF, prepare for TPC 1 st move to IP	ALTEAD (5); P2tech (YK+SM+LE+CR+MM) (4); survey (2); Ouvaroff (4)		23 (15 + 8)
6	Move TPC to IP and adjust position	ALTEAD (5); P2tech (YK+SM+LE+CR+MM) (5); survey (2)	Install ITS table	20 (12 + 8)
7	Move TPC to parking position, install ITS temp. rails; start cage installation	ALTEAD (5); P2tech (YK+SM+LE+CR+MM) (5); survey (2); vacuum group (3)		23 (15 + 8)
8	Install cage and central beampipe; connect central beampipe	ALTEAD (5); P2tech (YK+ FB+GR+GL+LE) (5); survey (2); vacuum group (3)		23 (15 + 8)
9	Connect central beampipe; bakeout central beampipe	P2tech (YK+ FB+GR+GL+LE) (5); survey (2); vacuum group (3)		18 (10 + 8)
10	Bakeout central beampipe	P2tech (YK+ FB+GR+GL+LE) (5); survey (2); vacuum group (3)		18 (10 + 8)



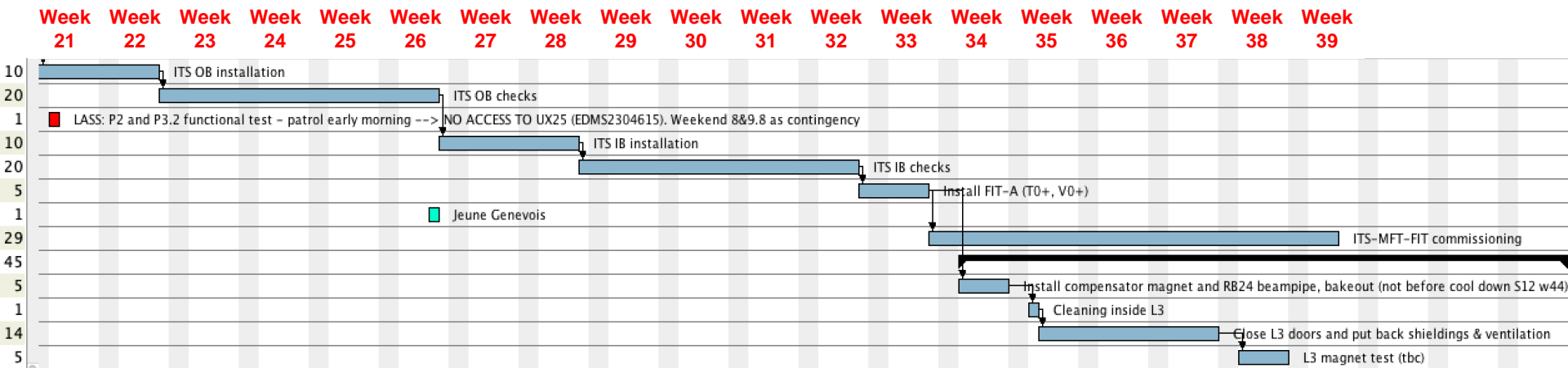
TPC/ITS/MFT sequence (2/3)



Resource table (wks 11 to 20)

Week from CERN restart	Tasks	Resources	Remarks	Total # of people
11	Final move TPC to IP; A-side beampipe support; remove ITS cooling plant from b.167	ALTEAD (5); P2tech (YK+SM+LE+CR+MM) (5); survey (2); TPC crew (3); vacuum group (3); CV (2); P2tech (PH+FB) (2)		30 (22 + 8)
12	A-side beampipe support; install ITS cooling plant	ALTEAD (5); P2tech (YK+PT+LEE) (3); survey (2); TPC crew (3); vacuum group (3); CV (2); Ouvaroff (4); P2tech (PH+FB) (2)	Start connect TPC services C-side	32 (24 + 8)
13	Remove DF; finalize ITS inox pipes close to cooling plant	ALTEAD (5); P2tech (YK+SM+LE+CR+MM) (5); Rampower (4); P2tech (PH) (1); Borge + Jimmy (2)		25 (17 + 8)
14	Install Miniframe and MCTS; finalize ITS inox pipes close to cooling plant	ALTEAD (5); P2tech (YK+SM+LE+CR+MM) (5); Rampower (4); Ouvaroff (4); P2tech (PH) (1); Borge + Jimmy (2)		30 (22 + 8)
15	MFT & FIT-C installation; unfold miniframe services; connect ITS and MFT cooling pipes miniframe	ALTEAD (5); MFT & FIT-C crews (4); P2tech (FB+GR+GL+PS) (4); Rampower (4); Ouvaroff (4); cable and fiber crews (7); TPC crew (5); P2tech (PH) (1)	Start connect TPC services A-side	42 (34 + 8)
16	MFT & FIT-C installation	ALTEAD (5); MFT & FIT-C crews (4); P2tech (FB+GR+GL+PS) (4); survey (2)		23 (15 + 8)
17-20	MFT & FIT-C checks	MFT & FIT-C crews (4)		12 (4 + 8)

TPC/ITS/MFT sequence (3/3)



Resource table (wks 21 to end)

Week from CERN restart	Tasks	Resources	Remarks	Total # of people
21-22	ITS OB installation	ALTEAD (5); P2tech (FB+GR+GL+PS+LE+PT) (6); ITS crew (5); survey (2)		26 (18 + 8)
23-26	ITS OB checks	ITS crew (5)		13 (5 + 8)
27-28	ITS IB installation	ALTEAD (5); P2tech (FB+GR+GL+PS+LE+PT) (6); survey (2)		21 (13 + 8)
29-32	ITS IB checks	ITS crew (5)		13 (5 + 8)
33	FIT-A installation	ALTEAD (5); FIT crew (4); P2 tech (5); survey (2)		24 (16 + 8)
34	Comp.magnet and RB24 beampipe; ITS-MFT-FIT commissioning	ALTEAD (5); P2tech (FB+GR+GL+PS+LE+PT) (6); survey (2); vacuum group (3); ITS-MFT-FIT groups (12)		36 (28 + 8)
35-37	Close L3 doors and put back shielding and ventilation; ITS-MFT-FIT commissioning	ALTEAD (5); P2tech (DD+PH+YK+LE) (4); ITS-MFT-FIT groups (12)		29 (21 + 8)
38-39	ITS-MFT-FIT commissioning	ITS-MFT-FIT groups (12)		20 (12 + 8)
X months	Global commissioning	All detector groups (1000+)		1000+