

Draft 2020 & 2021 Injector Schedule

DRAFT as input for discussion

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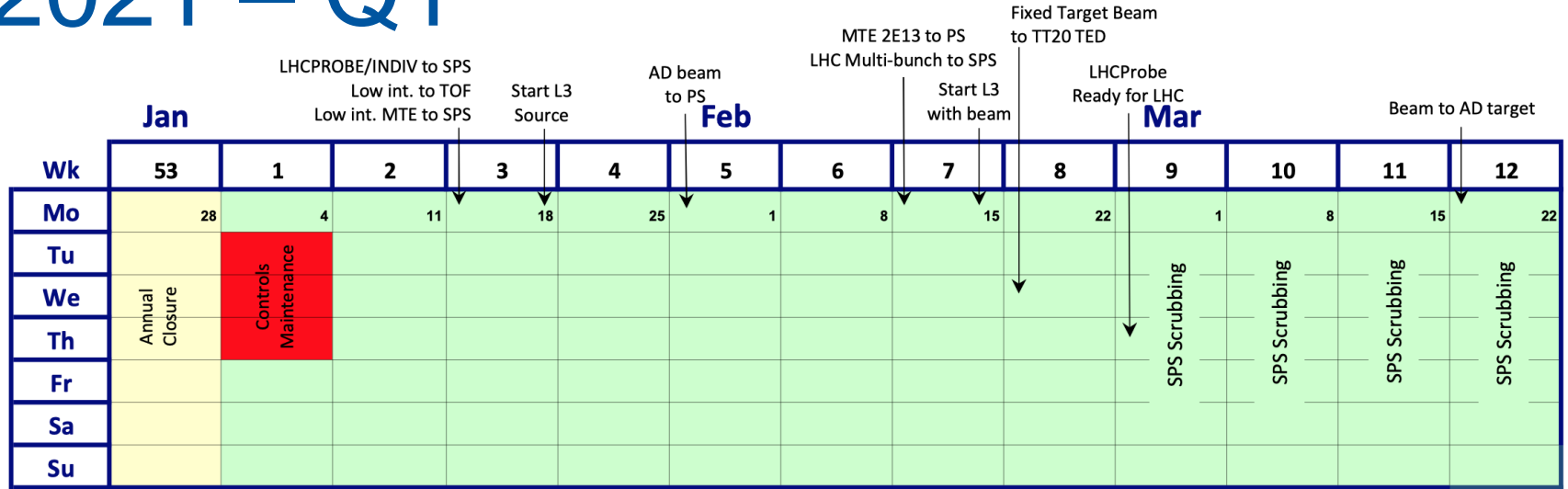
2021 General Comments

- The LHC Schedule is not really known yet
 - We are in the process putting one together, based on today's data
 - There will be an important meeting on 27 November after which it should be clearer
 - Changes will have a knock-on effects on the injector schedule
- Presently in the SPSC there is an assumption that there might not be an ion run for the NA in 2021
- AWAKE is based on present knowledge/request
 - The actual amount of beam time is subject to approval by the SPSC/RB

2021 Outstanding

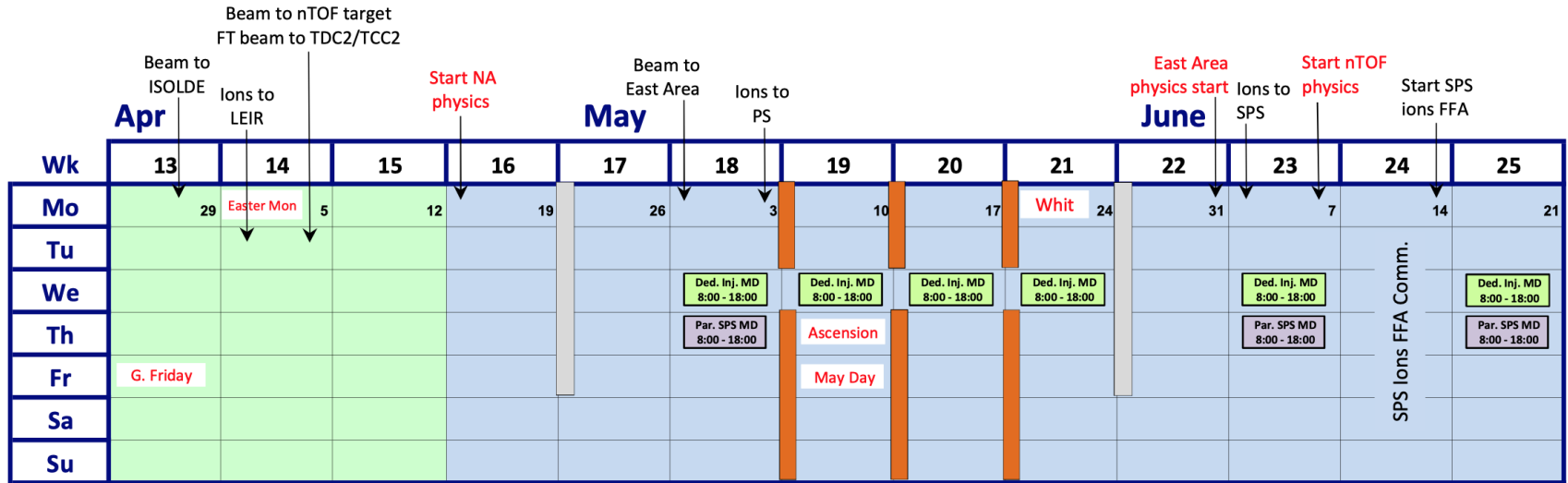
- AD/ELENA commissioning plan with milestones being established
 - New AD target
 - ELENA commissioning not complete
 - New transfer lines – initially with use of local ion source
- ISOLDE/HIE-ISOLDE commissioning plan with milestones being established
 - Depends highly on amount of time allocated with stable beams, pending approval RB
- Information on LHC MDs and TS' to align injector schedule activities and TS
- Number and duration of UA9 runs still to be confirmed, pending approval by SPSC/RB
 - Part of UA9 runs to be considered as dedicated or parallel MDs
- Number of COLDEX runs to be discussed
- Crab cavities tests to be considered as dedicated MDs

2021 – Q1



- Yearly 3-day controls maintenance
- Milestone dates as established by LIU-CCC
- First LHC beam for 4th March, but CMS valves not open before 24th March
- Scrubbing run allocated as full weeks and to be further detailed – *interleaving with commissioning & setting up*

2021 – Q2



- First physics in SPS North Area week 16 followed by East Area in week 22 and nTOF in week 23
- Physics for ISOLDE and ELENA expected to start in this quarter
- No AWAKE during dedicate MD – No parallel MD during AWAKE
- No dedicated, no parallel MD during HiRadMat week
- Week 24: SPS ion FFA commissioning – *impact on super cycle duty cycle*

2021 – Q3

	July					Aug					Sep		
Wk	26	27	28	29	30	31	32	33	34	35	36	37	38
Mo	28	5	12	19	26	2	9	16	23	30	6	13	20
Tu													
We	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00		Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00
Th	Par. SPS MD 8:00 - 18:00				Par. SPS MD 8:00 - 18:00		Par. SPS MD 8:00 - 18:00	Par. SPS MD 8:00 - 18:00	Par. SPS MD 8:00 - 18:00		Jeune G		
Fr													
Sa													
Su													

Start slip stacking
Commissioning

- No AWAKE during dedicate MD – No parallel MD during AWAKE
- No dedicated, no parallel MD during HiRadMat week
- Week 30 is a back-up week for SPS ion FFA commissioning – *possible impact on super cycle duty cycle*
- Most likely technical stop to be schedule towards end of this quarter
- Slip stacking commissioning or AWAKE period to be revisited – *important impact on super cycle duty cycle*
 - Slip stacking commissioning strategy/duration and rhythm to be decided/detailed

2021 – Q4

	Oct				Nov				Dec					
Wk	39	40	41	42	43	44	45	46	47	48	49	50	51	
Mo	27	4	11	18	25	1	8	15	22	29	6	13	20	
Tu						LHC MD Prep. 8:00 - 18:00								
We	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00			Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	Ded. Inj. MD 8:00 - 18:00	YETS	Annual Closure	
Th							Par. SPS MD 8:00 - 18:00	Par. SPS MD 8:00 - 18:00	Par. SPS MD 8:00 - 18:00	Par. SPS MD 8:00 - 18:00				
Fr														
Sa													Xmas	
Su														

End LHC Protons (week 45)
 Pb ions to LHC (week 45)
 End of 2021 Run (week 50)

- No AWAKE during dedicate MD – No parallel MD during AWAKE
- No dedicated, no parallel MD during HiRadMat week
- No Pb ions run for SPS North Area (tbc by SPSC/RB) , but ions to LHC in week 45
- LHC MD in week 44 is prior to LHC TS to switch to ions – Note LHC MD Prep session prior to LHC MD
- End of run in last week before Annual closure assumes no urgent work requiring cooldown

Present accounting

- 34 weeks of SPS-NA protons physics
- 28 weeks of PS-EA physics
- 27 week of nTOF physics
- ~ 32 weeks of ISOLDE physics - *“rough estimate”*
- ~ 25 weeks of AD/ELENA physics- *“rough estimate”*
- Machine developments
 - 260 hours of dedicated MD
 - 120 hours of parallel SPS MD
 - Probably more official parallel MD type time for setting up ions in SPS to be defined

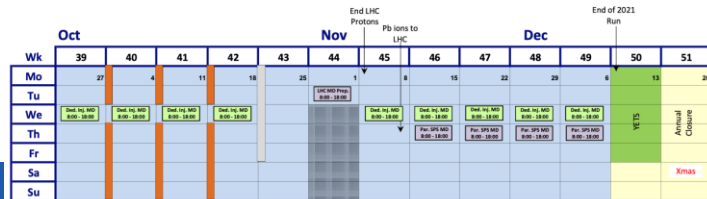
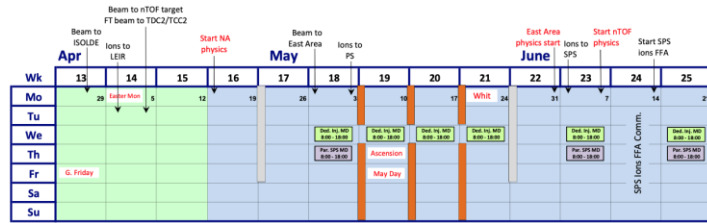
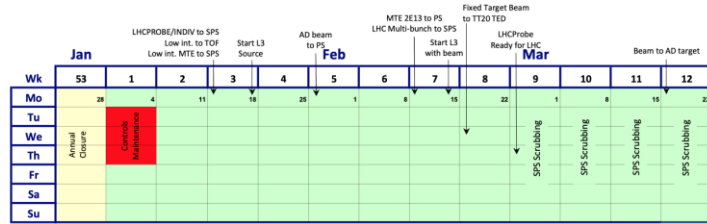
Next Steps

- Schedule soon to be put in ASM
 - Wider distribution for feedback
 - Further input and feedback to be integrated
- Super cycles for different periods to be defined
 - Requires more detailed knowledge on commissioning periods (e.g. FFA comm., Slip stacking, etc.)
 - Make clear what duty cycle experiments can expect during physics run

Thanks to the LIU-CCC for working out much
of the valuable input

Injector Accelerator Schedule 2021

DRAFT for Discussion



- Injector Complex MD Block
- HiRadMat Run
- Special interventions/stops
- Injector chain Technical Stop
- AWAKE Run (pending SPSC beamtime appr.)
- CERN Official Holidays
- Protons to NA
- LHC MD block proton period
- Controls system interventions
- Ions to NA
- LHC MD blocks ion period





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