



FOM

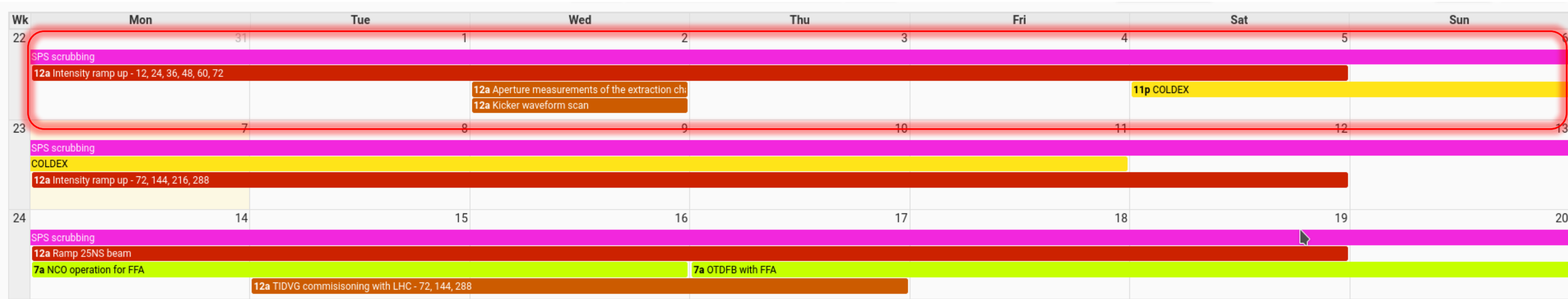
SPS beam commissioning – week 22

K. Li for the SPS Operations and Supervisors Teams

Many thanks for the great support from all the equipment experts and support involved!!

04. May 2021

Beam commissioning – planning



- We have moved into the first week of scrubbing – intensity ramp-up to 72 bunches on long flat bottom; in parallel, still have to finish of a few beams with extraction setting up before moving in COLDEX towards end of week

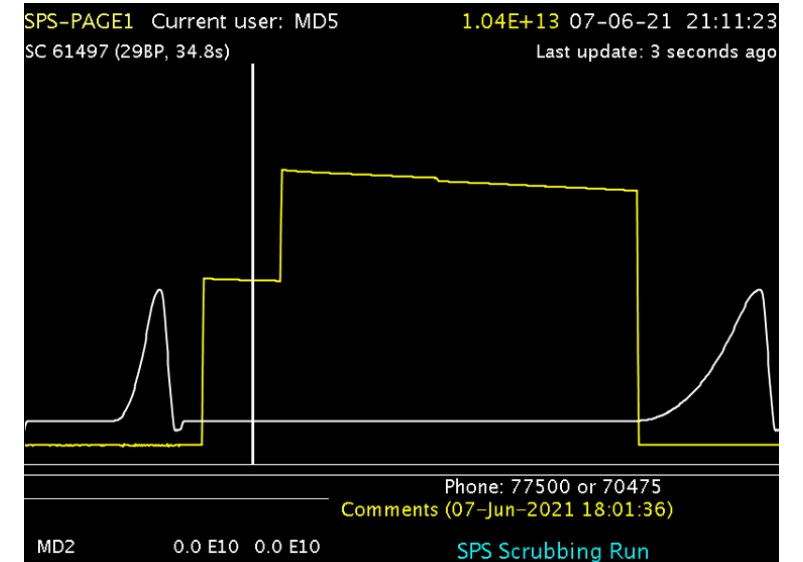
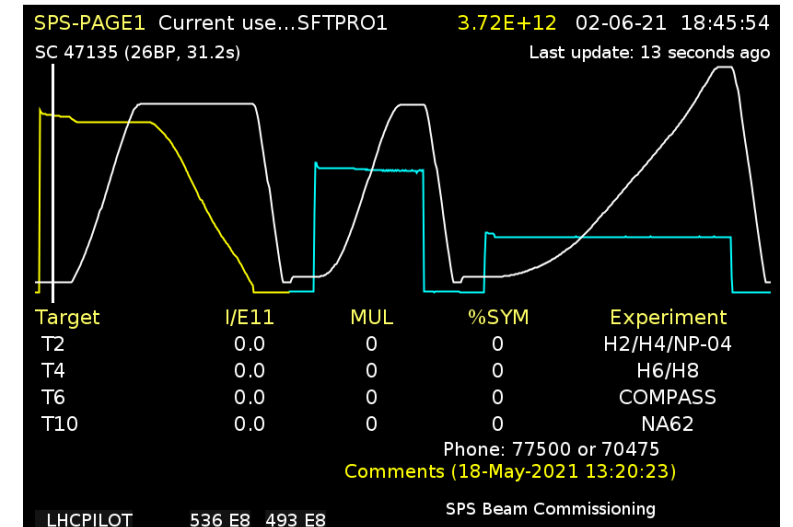
- Goals:

- Scrubbing for 72 bunches on long flat bottom
- SFTPRO extraction setting up with 4 islands – TIDVG commissioning
- AWAKE RF gymnastics
- Accesses (BMI, SEMs, ALPS,...)
- LHCPILLOT extraction channel setting up finalization + kicker waveform scans



Beams – status

- SFTPRO
 - All **5 turns taken** from the PS - $< 4e11$ ppb; slow extraction coarse setting up done;
 - **Remaining:**
 - BSI adjustment for servo-spill
 - Mini scans tests
 - Extraction setting up in PS (with all islands)
 - RF gymnastics for debunching at flat top
- AWAKE
 - AWAKE extracted to experiment; **re-phasing improved** after FW update; **RF gymnastics started** – conditioning paused
 - **Remaining:**
 - Setting up of RF gymnastics – conditioning
- LHCPILOT
 - Aperture measurement of extraction channel + TPSG alignment
 - **Remaining:**
 - Kicker waveform scan
- Scrubbing
 - Scrubbing progressing – **reached 72 bunches at full flat bottom** as planned; main limiting factors are MKDV vacuum and pressures in BA6 (new vac chamber next to crabs) and BA5
 - **Remaining:**
 - 4 batches at flat bottom



Accesses, issues, follow-ups

- Accesses on Tuesday morning for:
 - BSI checks
 - SEMs for mini-scans
 - ALPS circuit breaker
 - QF/QD regulation checked – needs more follow-up
- Strict procedure to follow **for switching between scrubbing and non-scrubbing mode** to protect MKDV
- BHZ sent MTE to SPS without request (MKP will not pulse) – already investigated by the PS
- MKP **not pulsing at irregular intervals at first injections** when taking the scrubbing beam; beam was finally stopped Sunday late afternoon as the situation started getting worse; finally tracked down to a problem on the FEC and solved temporarily by advancing one of the tasks – under investigation;
- ECA5 access system problem occurred over the weekend; lost quite some time due to broken patrol;