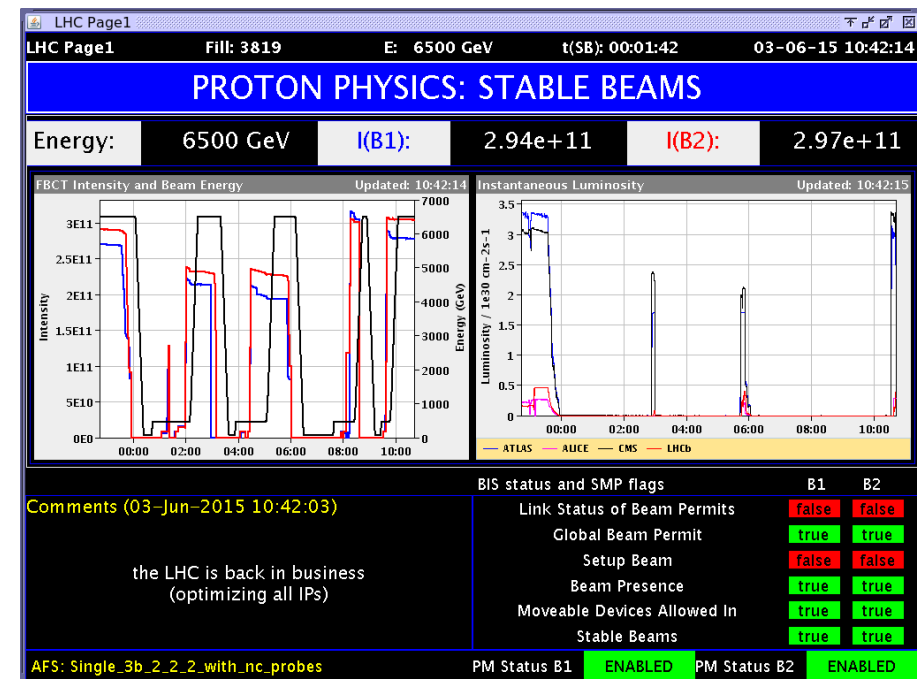
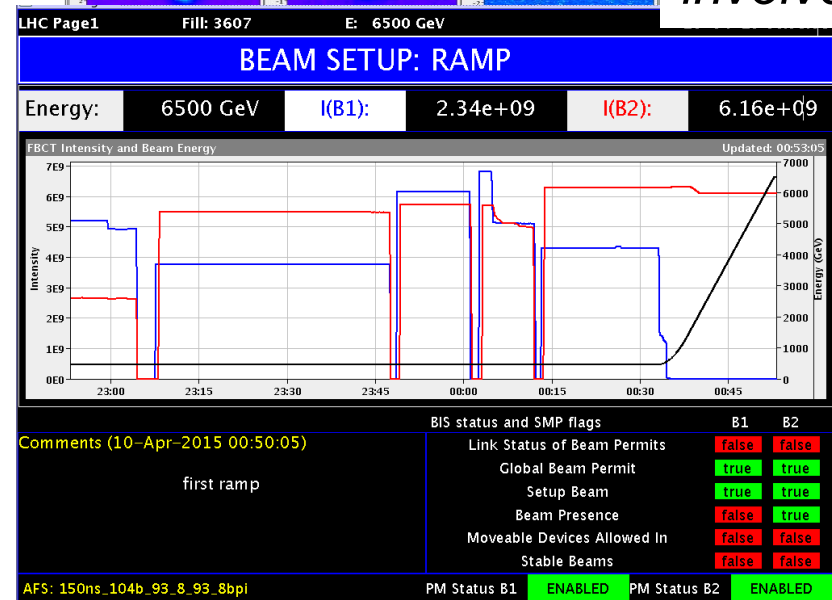


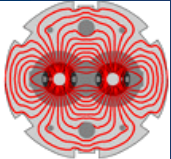
2021 beam test



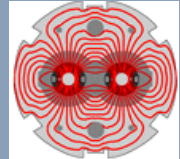
*J. Wenninger, M. Solfaroli
on behalf of all colleagues and teams
involved in beam preparations*

02/07/2021



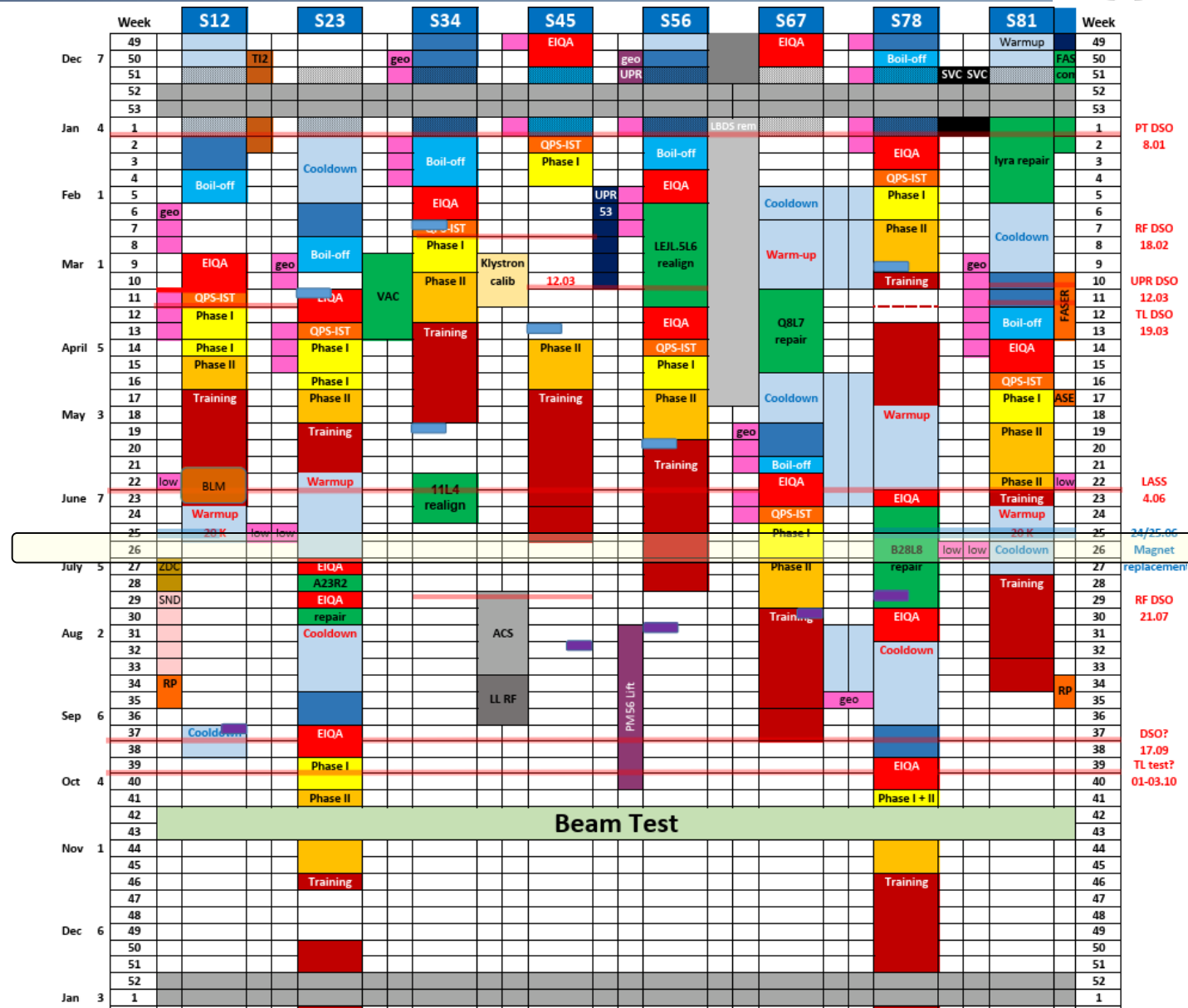


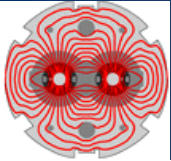
2021 beam test preparation



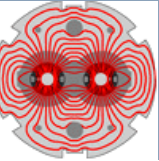
Activities with impact on experiments:

- **Beam DSO tests: September 17th.**
 - Exp. caverns patrolled and closed.
- **Beam tests of the TI2 / TI8 transfer lines:**
 - **TI2: Fr 1st – Sat 2nd October.**
 - **TI8: Fr 8th – Sat 9th October.**
 - **ALICE and LHCb patrolled and closed.**
 - **No radiological impact on ALICE and LHCb.**

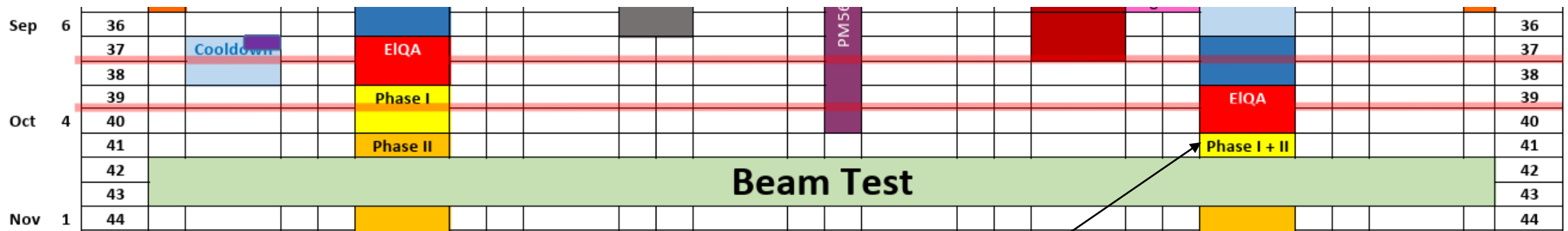




Program weeks 37-42

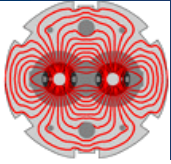


- Powering tests phase I and some phase 2 test must be performed in S23 and S78 for operation at injection – corresponds to over **90% of test total**.
 - Tight schedule, **only 10 days (weekends included) for S78**.
 - Some optimization required wrt machine cycling.
- **Checkout – ~3 days** (part of beam test, beginning W42) :
 - **Caverns closed and all vacuum valves (ready to) open Monday 18.10.2021**.
 - Some gain possible if we get the caverns closed already on the Friday before...
 - Some gain due to reduced scope (injection only), offset by late readiness of circuits and transfer of some activities into the checkout – **duration ~ unchanged**. Beam injection as soon as checkout completed.
 - Last transfer line and SPS-LHC synchronization tests.

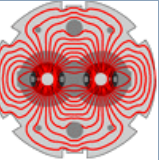


DSO?
17.09
TL test?
01-03.10

10 days



Beam test objectives and priorities



Circulate the two beams at injection.

Setup machine at injection.

Verify machine aperture – global & local.

– Triplet aperture defines β^* reach.

Pre-commissioning of key systems.

Collisions for experiments.

– Request for a few periods of ~6+ hours.

Ramp to 7 TeV not possible.

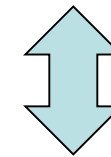
Low energy ramp may be possible, no priority !?!

**Impact on 2022,
window for repair
after beam test**

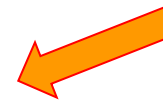
Beam conditions : $I < \text{SBF limit}$

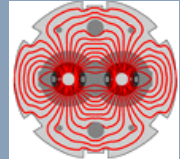
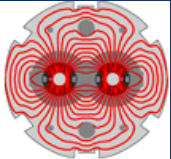
○ Probes,

○ Max 3 x 1E11 p/b for collisions



Minimize time for MP setup





Beam test workflow

