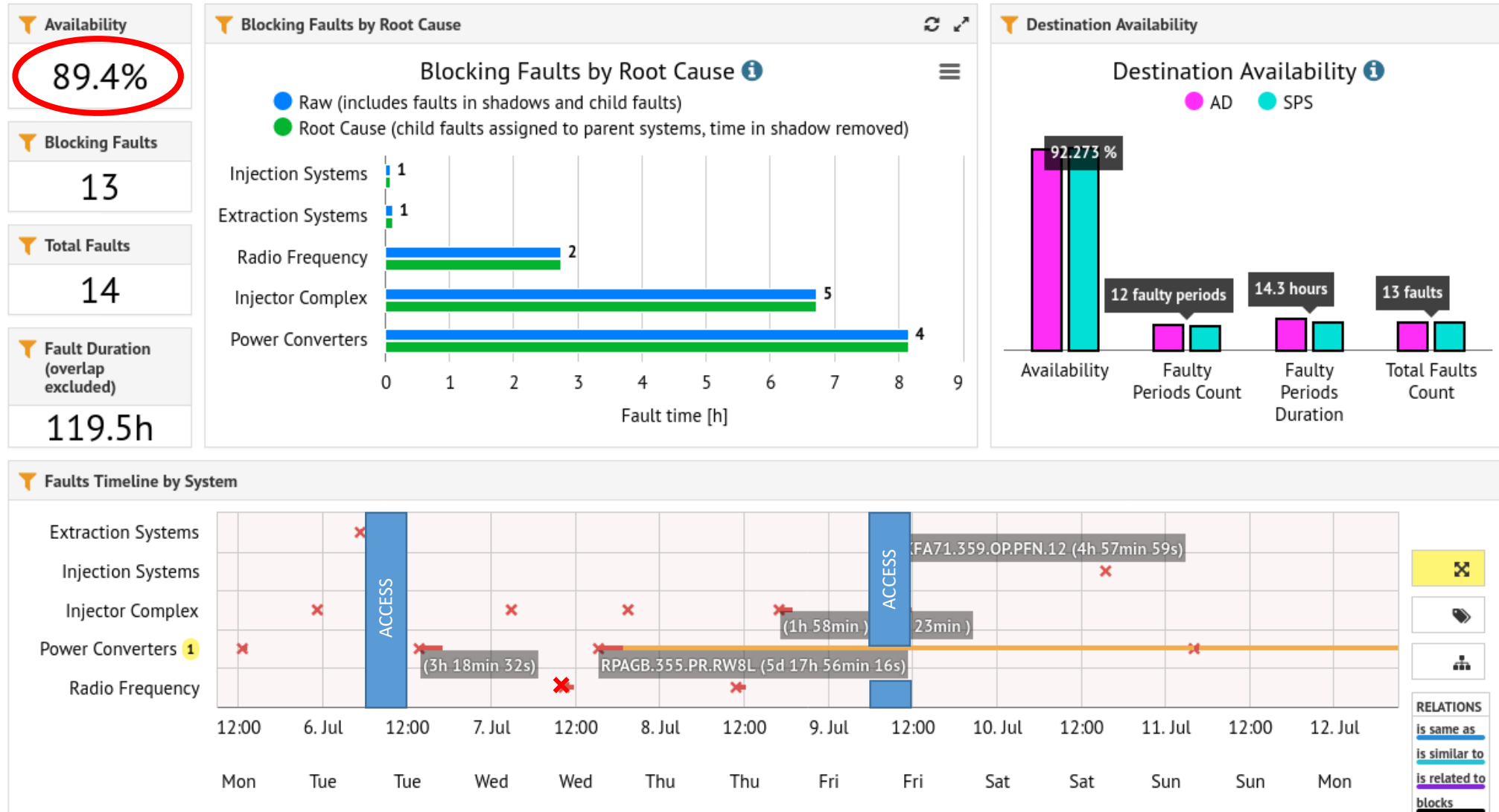


PS Report W27 – “Beam Commissioning”



Many thanks to: Fernando, Marc, Patrick, Mike, Antoine, Thierry, Pieter, Alvaro, Didier, Thibaut, Denis, Frank, Raul, Vincent, Fabrice, Abdel, Oliver, Stephane, Jeroen, James, Yves, Fulvio, Quentin, Gilles, Jean-Marc, Todor, Carlo, Heiko, Alexander, Alexandre, Matthew, Ana, Olivier, Dominique, Anthony, Hannes, Ben, Bettina, Klaus, Gil, Benoit, Ewen, Gerd, Tom, Anti, Guillaume, ...

Accelerator Fault Tracking (AFT)



Access activities

- **Access work completed during beam stops of the 6th and 9th of July:**
 - TT2 BLM cable grounding improvements, and cable trays grounded in switchyard
 - DFA shielding attempt with nanocrystalline cores on the DFA242 cables
 - PU67 fixed, sum signal for TFB from PU98 fixed (amplifier taken from PU02)
 - WR B-Train and LLRF SW updates made
 - 10 MHz amplifier interventions: C36 and C86 amplifiers repaired
 - 80 MHz calibration: cavities 80-88 and 80-89 increased towards 80-08
 - PR.ODN regulation investigations
 - SMH61 cooling issue confirmed and being followed up: preventative exchange being considered
- **Requests for future beams stops:**
 - **PR.W8L power converter investigations necessary ASAP and Reboot of central timing: stop L4 source and RF: we propose to stop Thursday morning until 9 - 12h (no access needed)**
 - TFB pick sum signal (PU02) amplifier repair: **PSR**
 - Another access added to requested for TT2 grounding: **TT2**
 - C36 cavity amplifier repair: **Switchyard**

Operational issues

- **Earth fault on W8L power supply started Tuesday afternoon:**
 - SY-EPC switched to spare converter, which continued to trip throughout the week
 - Expert intervention on Friday afternoon stabilised the trips of the spare
 - SY-EPC investigations have located the original fault on the operational converter in a common rack that shares a busbar with the spare
 - **For safety reasons an intervention will need a stop:**
 - **Propose Thursday morning in parallel to TOF DSO tests: 9 – 12 h**
 - SY-EPC will also attempt to install a safety barrier (plexiglass cover) to allow any future interventions on W8L: to go ahead in parallel to operation
- **H8/H16 phase loop:** start timing of phase loop lost, cable found unplugged
- **KFA71:** trips of module 12 being followed up by experts

Summary of operational beams

Fixed target beams	Status	Comment
SFTPRO (core only)	Operational	Delivered to SPS at $\sim 6...7 \cdot 10^{11}$ p/p
SFTPRO (5 turn extraction)	Intensity increase	2 - 5 · 10¹² p/p delivered to SPS, up to 1.5 · 10¹³ p/p
AD	Operational	1.4 · 10¹³ p (significant improvements on BLMs)
TOF	Setup high int	Until 800-900e10 p/b, extracted to D3 with BR
EAST	Setup	Basic setup, parasitic TOF to D3, EAST bunch internal dumped at 24 GeV – dedicated optics measurements
LHC-type beams	Status	Comment
LHCPROBE, LHCINDIV	Operational	
LHC25 (72b)	Operational	Polished up to $1.3 \cdot 10^{11}$ p/b setup at $2 \cdot 10^{11}$ p/b e_h (C2595 flat-top) \approx 2.1 mm mrad e_v (C2595 flat-top) \approx 1.8 mm mrad
LHC25 (12b or 24b)	Temporary	3 BP cycle delivered to SPS
LHC25 BCMS (48b)	Operational	Polished up to $1.3 \cdot 10^{11}$ p/b

Commissioning and OP activities

- **OP work on AD, TOF and SFTPRO has significantly improved BLM levels:**
 - Injection bump settings, transition crossing and extraction (tune, steering)
- **TOF ready for 19th July at 100, 350 and 800e10 ppb:** advanced further on RF set-up
- **East Area:** setup and HW checks for T8/T9/T10/T11 continue
- **Monitoring script and vistar for 20 MHz cavities:** tested and implemented to disable 40/80 MHz functions in case 20 MHz cavities don't pulse, avoiding trips
- **Investigating ways to provide SPS with an INDIV at 5 μm :**
 - Blow-up transverse emittance with TFB not effective
 - Will look today at using at approaching a resonance or add multipoles

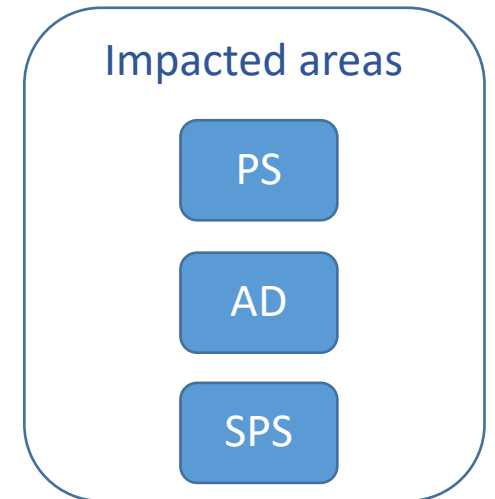
nTOF Target – Patrols and BE-DSO Tests

Actions:

- Patrol procedure released, it is available in EDMS and OP-Webtools.
 - Agreement with BE-DSO, SY-DSO and SY-STI concerning the patrol of sectors 6, 7 and 8 (they are under SY-STI responsibility). These sectors are considered as experimental areas where BE-OP is not aware about the activities carried out and/or risks associated to those activities.

Planning:

- Patrol – 14th July afternoon.
- **DSO Test – 15th July morning (from 9h00 to 12h00).**
 - **Impact TT2 operation due to PE.SMH16 lockout.**
 - Should we profit for giving access to the machines?
 - Should we profit for doing some tests/studies?



Questions and Comments

PS Supervisor of the week 28 – **Alexander Huschauer**



8:45 Daily Zoom meeting during beam commissioning

Web address: <https://cern.zoom.us/j/9372114100?pwd=L29BcmIjHUENCdFBRStYtXYVcrM1B4Zz09>

Meeting ID : 937 211 4100

Passcode: 525463