

PS Report W14

PS & SPS User meeting



Many thanks
to the PS OP and coordination teams as well as all equipment experts and support teams!

Availability

- Accelerator Overview
- AD FOM Report
- East Area FOM Report
- FOM
- ISOLDE GPS FOM Report
- ISOLDE HRS FOM Report
- ISOLDE REX-HIE FOM Report
- LEIR FOM Report
- LHC Overview
- Linac 2 FOM Report
- Linac 3 FOM Report
- North Area FOM Report
- PS FOM Report**
- PSB FOM Report
- SPS FOM Report

Availability

83.1%

Blocking Faults

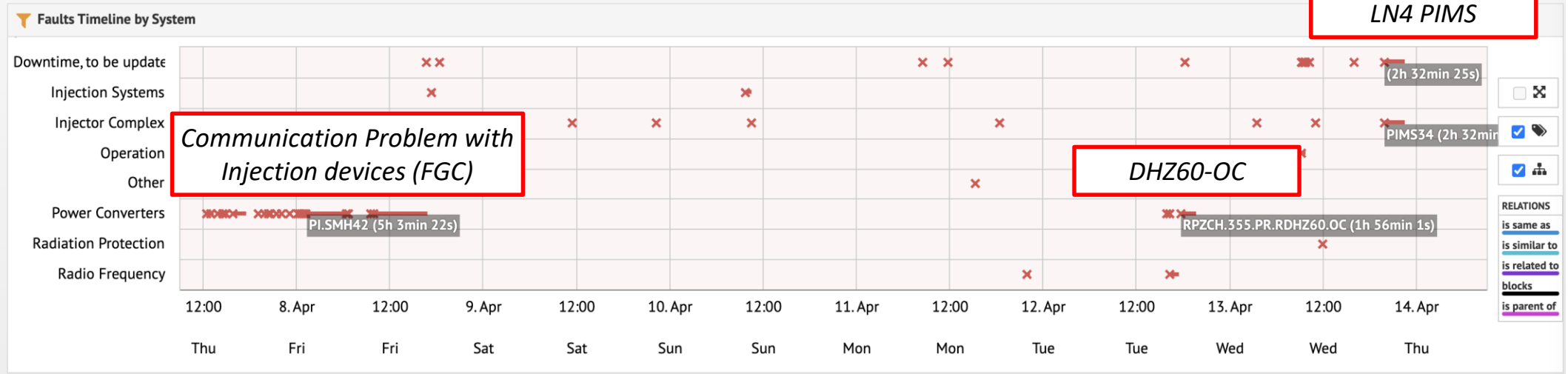
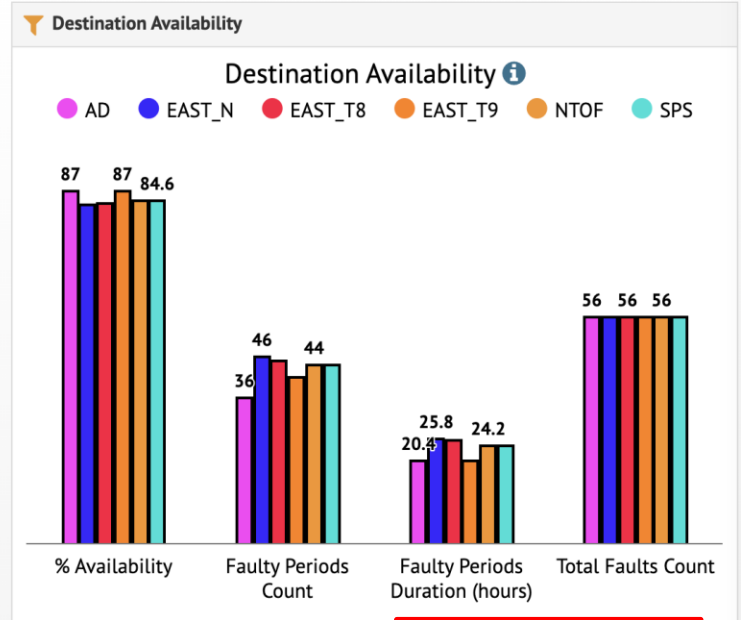
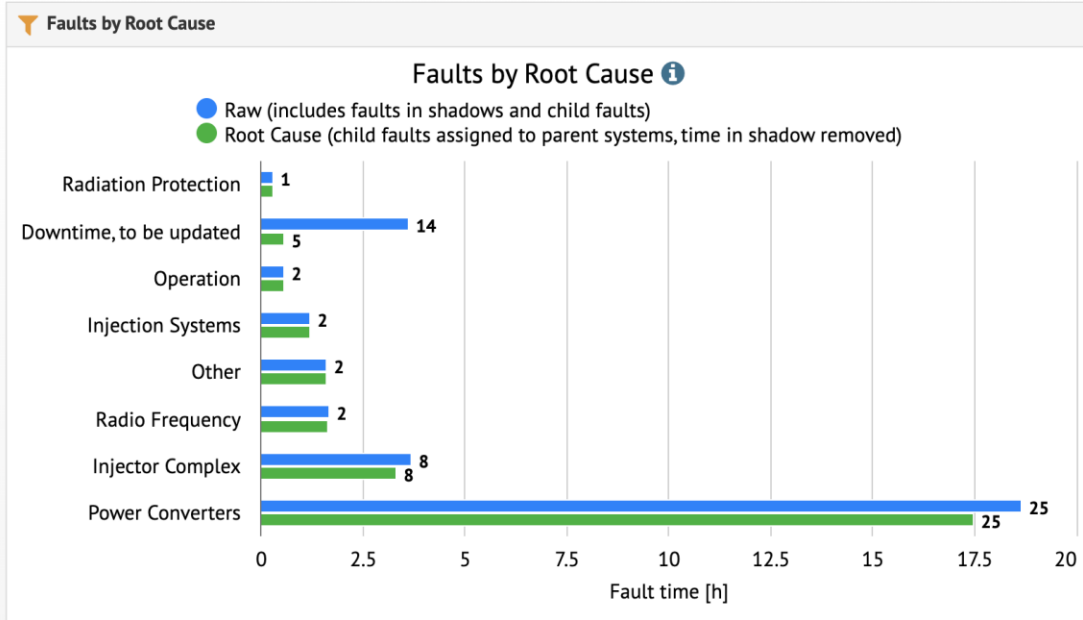
56

Total Faults

56

Fault Duration (overlap excluded)

26.6h



PS injection FGC issue

- FGCs in blg 365 tripping due to **ethernet communication errors**:
 - Started Thursday after lunch, fixed Friday evening: roughly **18h of downtime in total**
 - Affected **PS injection equipment** (PI.SMH42, PI.BSW and PI.QLB)
 - **Ethernet switch in blg 365** was exchanged to try to address the issue, but did not solve the problem
 - New "managed" Brocard switch thought to be producing DHCP noise tripping converters
 - After old "unmanaged" CISCO switch taken from EPC lab at CERN and re-installed problem remained...
 - **Found the spare FGC converters were also producing noise tripping the operational converters**
- **Additional confusion introduced by updating to new FGC frontend software version**:
 - PI.BSWs advanced by 500 us (half the pulse length)
 - FGCs intermittently not pulsing correctly but not in fault (every 30 mins to 1 hour)
- **Source of problem not fully understood. Post-mortem needed**:
 - **EPC report to FOM (in 2 weeks)**
 - Further investigations on spare FGCs to be carried out during next long beam stop (> 4h)
 - Thanks to EPC (Raul, Quentin, Jose Luis...) for their hard work during a long intervention

Main Issues

- Group of 10 MHz RF cavities repeatedly tripped on Tuesday 12.04
 - Access needed to exchange final amplifier of C10-86 and repair C10-11 relay gap.
 - **~1h30 without beam**
- DHZ60-OC regulation issue:
 - Tuesday evening, several trips of DHZ60-OC on AD user.
 - AD user is very demanding on negative current > 300A in few milliseconds.
 - EPC expert need further fine tuning to be able to handle this request (around 4h without beam) to be planed ideally during a technical stop.
 - Meanwhile DHZ60-OC function has been adapted/modified with lower di/dt
 - **~1h30 without beam**

Main Activities

• SFTPRO/MTE

- 5-turn extraction at 500e10 p/p sent to SPS for setting-up
- Successful first attempt at DFA island-core trajectory optimization with GeOFF using TT10 BPMs
- Polarity of DFA254 to be discussed (descending staircase...!)

• TOF:

- Parasitic TOF setting up on EAST_T8 cycle setup at 300e10 ppb

• AD:

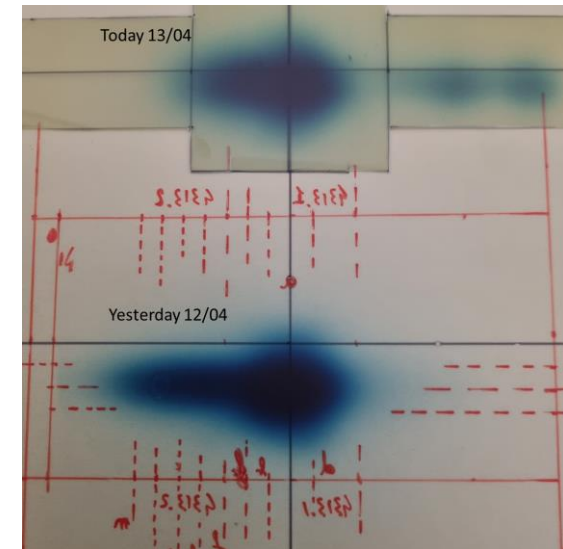
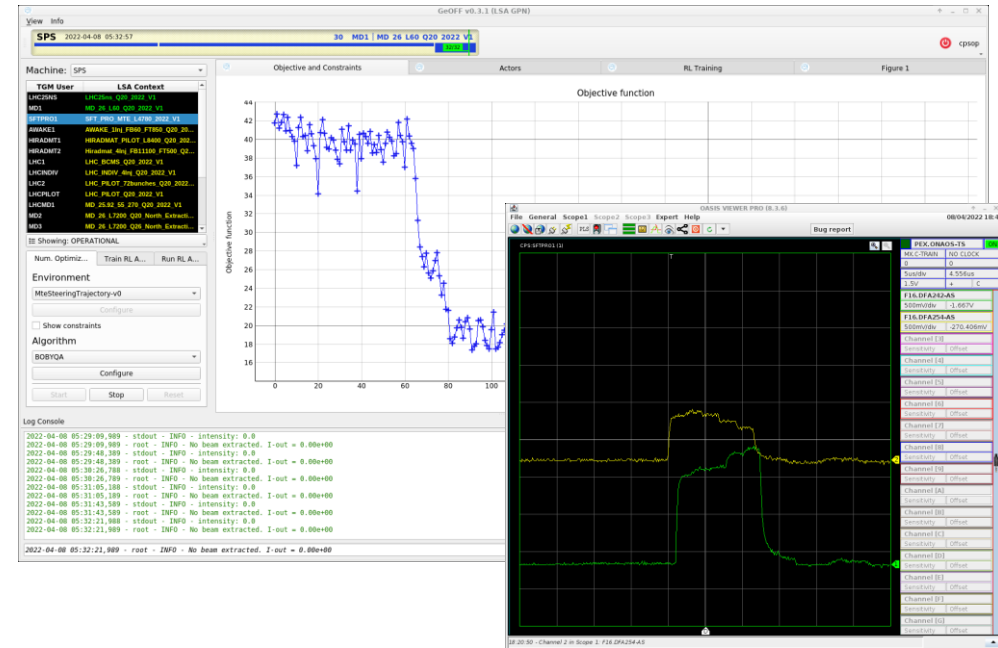
- Successful reliability run of 5 bunch beam sent to the target
- 5b variant to remain operational in 2022
- FTA optimization ongoing

• EAST:

- Optics measurements (quad. scan) started in F61
- Ongoing iterations with IRRAD (Al-Foil mini-run)

• LHC

- LHC25 prepared for SPS at 2.2e11 ppb
- BCMS ready for SPS at 1.7e11 ppb



Status of operational beams

Fixed target beams	Status	Comment
SFTPRO (core only)	Operational	Available up to $2 \cdot 10^{12}$ p/p
SFTPRO (5 turn extraction)	Setup ongoing	Ready up to $1.8 \cdot 10^{13}$ p/p , beam quality to be optimized for high intensity
AD	Operational	Nominal intensity, new LLRF tree commissioned for odd number of bunches
TOF nominal	Operational	
EAST	Operational	Slow and fast extracted beams available; fine-tuning of SE continuing. Working on «Beam sweep» reduction in T8.
LHC-type beams	Status	Comment
LHCPILOT, LHCINDIV	Operational	
LHC25 (72b)	Operational	Available up to $2.2E11$ ppb for SPS scrubbing
LHC25 (12b or 24b)	Operational	
LHC25 BCMS (48b)	Operational	-
AWAKE	Not started	-

Questions and Comments

PS Coordinator for week 13 – **Matthew Fraser**

PS Coordinator for week 14 – **Denis Cotte**



9:00 Daily Zoom meeting

Web address: <https://cern.zoom.us/j/9372114100?pwd=L29BcmIHUENCdFBRSyYVcrM1B4Zz09>

Meeting ID : 937 211 4100

Passcode: 525463