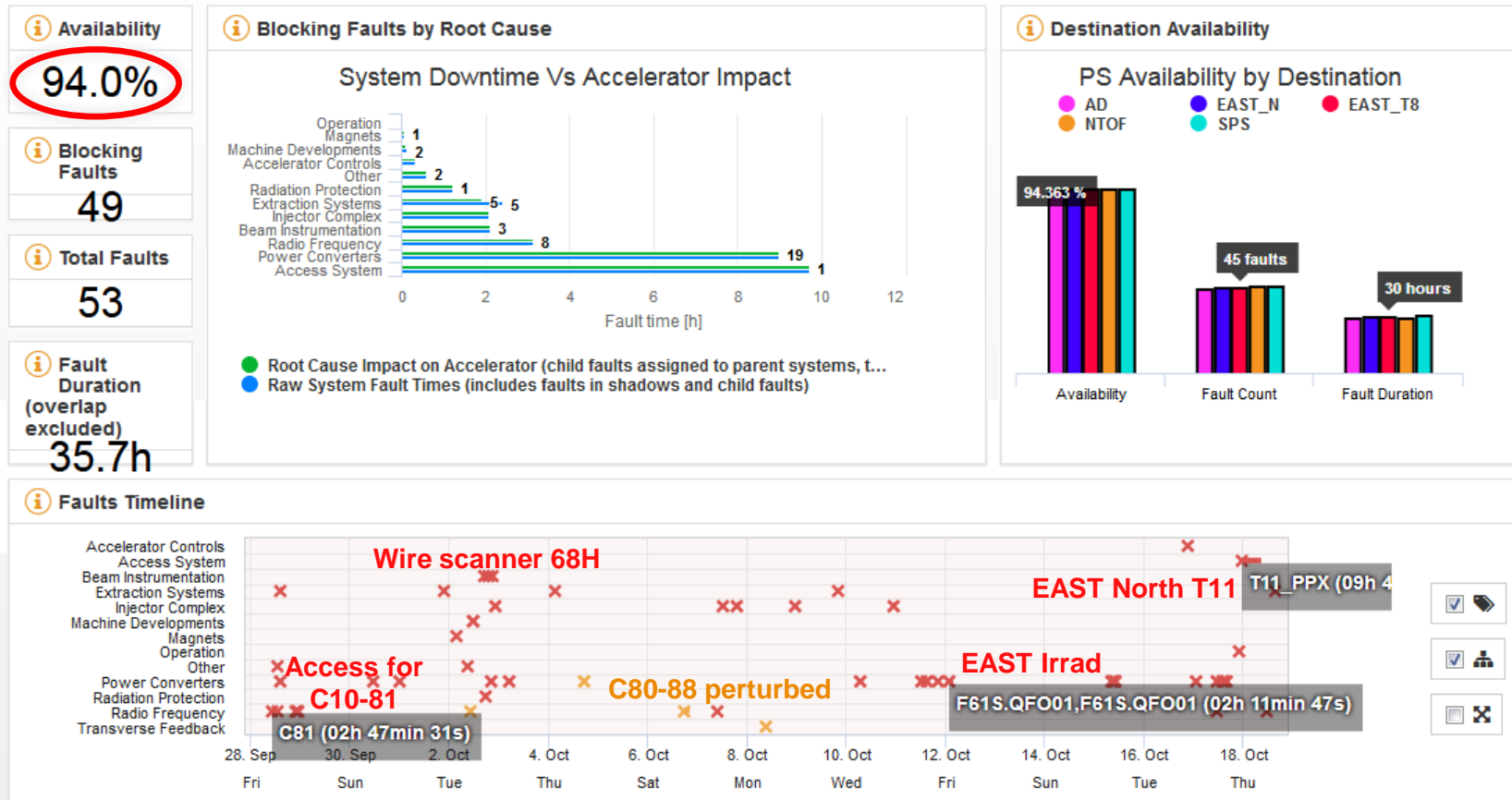


# PS status 28 September – 19 October 2018

H. Damerau, K. Hanke on behalf of PS operations and supervisor team

Thanks to A. Huschauer for the input on transverse studies

# PS status 28<sup>th</sup> September – 19<sup>th</sup> October



# PS status 28<sup>th</sup> September – 19<sup>th</sup> October

→ **Good weeks for the PS with about 94% beam availability**

**No single major problem during last 3 weeks, but many issues**

- Multiple stops of POPS → **solved after ventilator repair on 03/10**
- Trips of PFW power converters during down-ramp
  - **source not identified**
  - **Decreased slope of down-ramp to cover, but needs modification of cycles**
- Frequent stops of C80-88 on 05-06/10 due to multi-harmonic feedback
- Trips/interventions: C10-11, BSW14, KFA13, KFA21, F61S.QFO01

# PS status 28<sup>th</sup> September – 19<sup>th</sup> October

→ **Good weeks for the PS with about 94% beam availability**

- Horizontal wire scanner SS68 in undefined position on Tuesday (02/10)
  - **Access to move manually**
  - **Wire scanner moved to defined position, but wire broken**
  - **3h15 downtime** in total for all beams in total (1h15 due to 'RP veto')
- Horizontal wire scanner SS65 not available (05-08/10)
  - **Multiple initializations**
  - **Repaired by BE-BI experts on 08/10**

# Status of operational beams

Fixed target beams	Status	Comment
EAST Irrad/North	Operational	With parasitic TOF $\sim 3.5 \cdot 10^{13}$ p/p
MTE	Operational	Delivered to SPS at $\sim 1.53 \cdot 10^{13}$ p/p
TOF	Operational	Up to $\sim 8.2 \cdot 10^{12}$ p/p (optimized rotation)
AD	Operational	$\sim 1.48 \cdot 10^{13}$ p/p
LHC-type beams	Status	Comment
LHCPROBE, LHCINDIV	Operational	
LHC25 (12b, 72b)	Operational	
LHC25 BCMS (12b, 48b)	Operational	
EARLY Pb <sup>54+</sup>	Operational	Taken for setting-up in SPS ( $h = 16/21$ )
ILHC100 (4b)	Operational	Taken for setting-up in SPS
ILHC75 (3b)	Available	To be checked at higher intensity

# Preparation of beams for studies

- **Pb<sup>54+</sup> ions to EAST area**
  - Setting-up with ions sent to EAST dump
- **Short high-intensity batches for LHC MD**
  - 12 bunches spaced by 25 ns with up to  $2.5 \cdot 10^{11}$  p/b
- **High-intensity 8b4e for LHC MD**
  - Batch with 48 bunches ( $6 \times 8b4e$ , standard) prepared with  $1.85 \cdot 10^{11}$  p/b
  - Re-checked in PSB/PS after test in SPS
- **Short BCMS batch for SPS MD**
  - 3 basic period cycle with single injection to generate 24 bunches using BCMS

# Status of transverse studies

- MD3105 – Tune diagram measurements
  - Resonance identification using BCMS low-chromaticity setup
- MD3367 – Transverse impedance measurements
  - Tune shift versus intensity
- MD3368 – Optics measurements
  - Impact of super cycle configuration on optics, RDT measurements on MTE
- MD4224 – Emittance scans on LHC beams
  - Benchmarking experiments approaching the integer resonances
- MD4263 – BCMS brightness studies
  - Simultaneous emittance versus intensity measurements in PSB and PS
- MD4511 – PFW matrix measurements
- MD4603 – Benchmarking of new WS
  - Comparison between operational and new scanners

# Status of longitudinal studies

- MD3319 – intensity ramp-up with LHC-type 25 ns beam
  - Coupled-bunch and multi-harmonic feedbacks, 40 MHz cavity as Landau system
  - Measurements at  $2.6 \cdot 10^{11}$  p/b
- MD3387 – beam measurements of cavity impedances
  - Impedance of C80-89 after changes during ITS2, effect of air line
  - Comparison of beam impedance at nominal and high intensity
- MD4513 – barrier buckets with Finemet cavity
  - Long (~500 ns) flat bunches kept in barrier-bucket at flat-bottom
  - Optimization and moving barriers, next at 14 GeV