PS status 10 August – 17 August 2017

H. Damerau, F. Tecker on behalf of PS operations and supervisor team

PS 10th - 17th August

→ **Busy week for PS Complex with about 88% availability**

Main events only:

- Planned stop on Thursday for PSB and PS
  → **2h45 downtime for all beams, minor issues to recover**
- Pole face winding power converter (PR.WFW) issues on Thursday night
  → **1h25 downtime for all beams**
- Unstable conditions from Linac2 since Saturday
  → **Various stops for investigation, installation of observation (buncher 1)**
  → **Ok since Wednesday intervention: replaced directional and output couplers**
  → **~7h30 downtime for all beams in total**

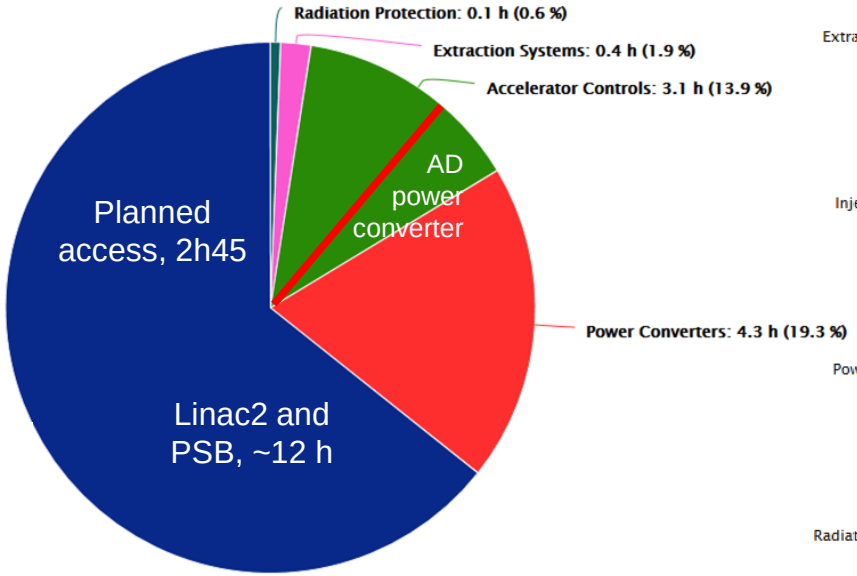
PS 10th - 17th August

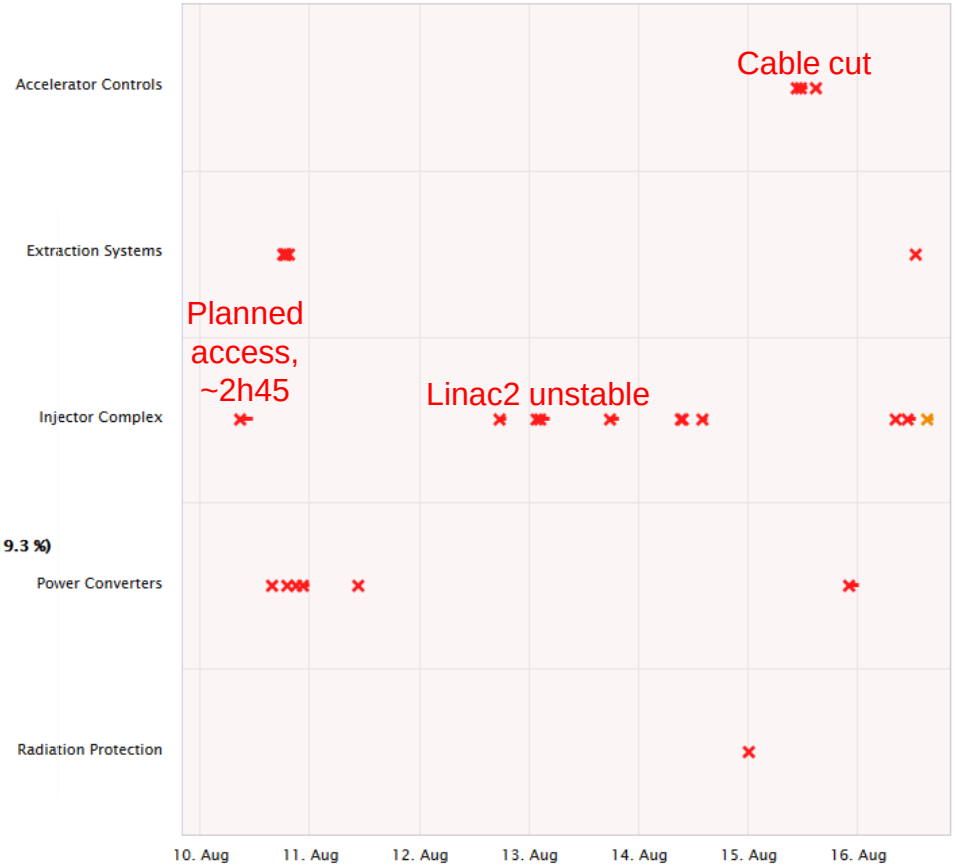
→ Busy week for PS Complex with about 88% availability

- PSB ring 1 RF unstable (phase of splitting)
  → **2h interruption for MTE to SPS**
- Timing cable cut towards SPS (PEX.WSPS) on Tuesday
  → **1h without beam to SPS**
- Inspection on module of fast extraction kicker (KFA71, module in SS79) today
  → **1h30 stop for all beams, restarting**

PS faults 10th - 17th August (AFT)

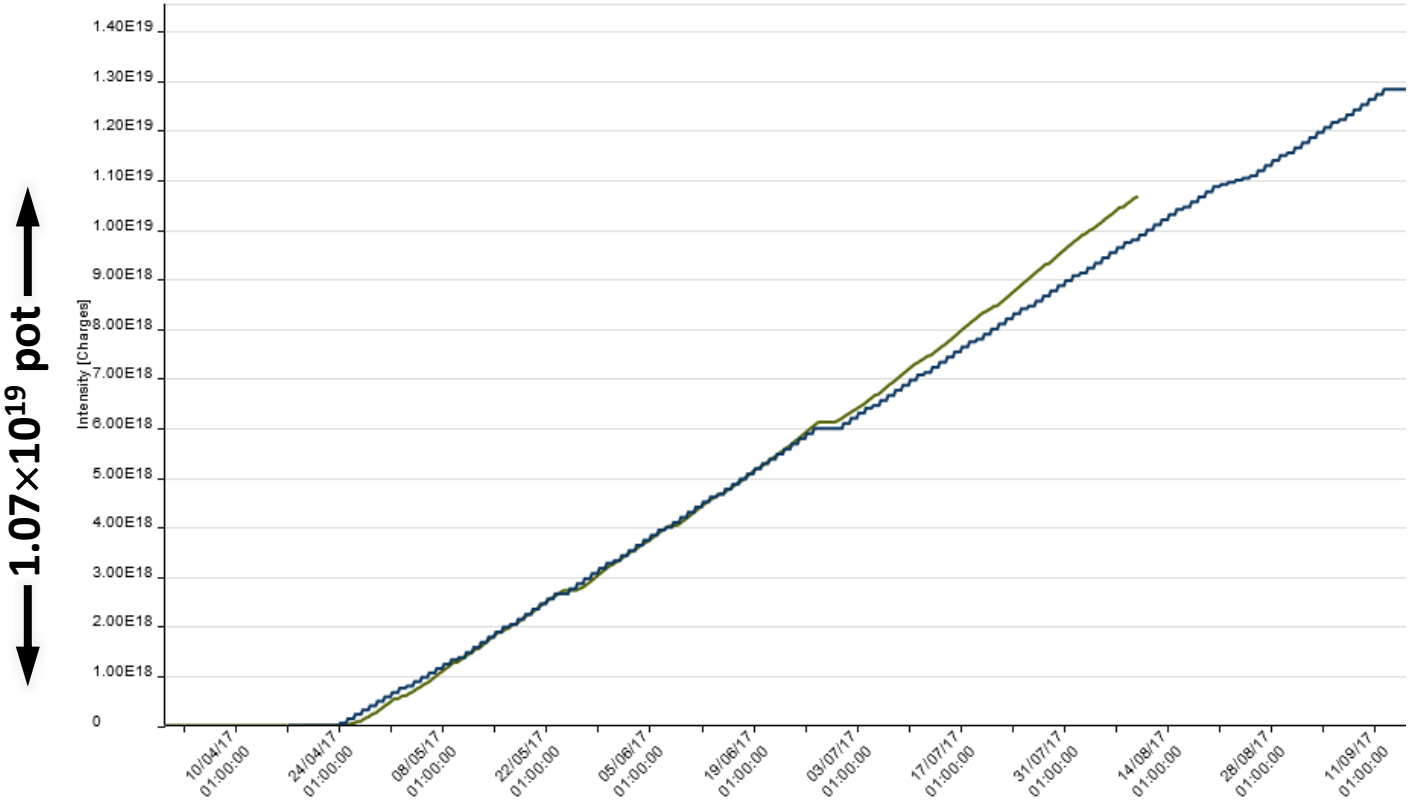
PS overview and cardiogram





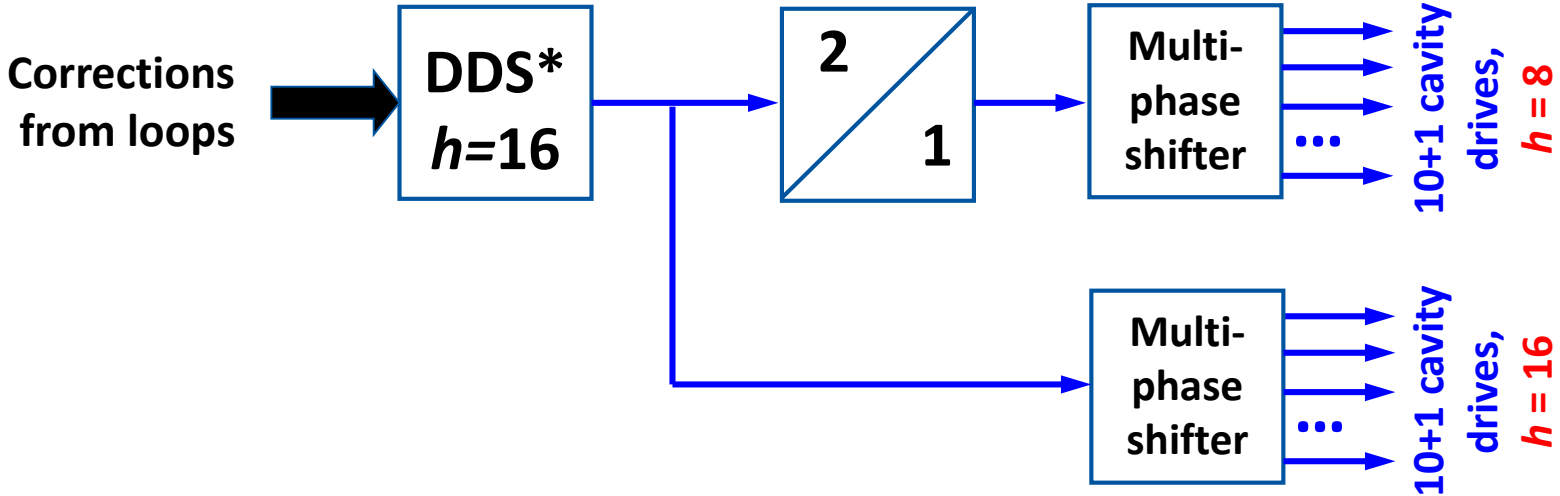
PS 10th - 17th August

- Accumulated TOF intensity: **1.07×10^{19} pot** (**57%** of 2017 target, ~10% above plan)



RF beam control upgrades

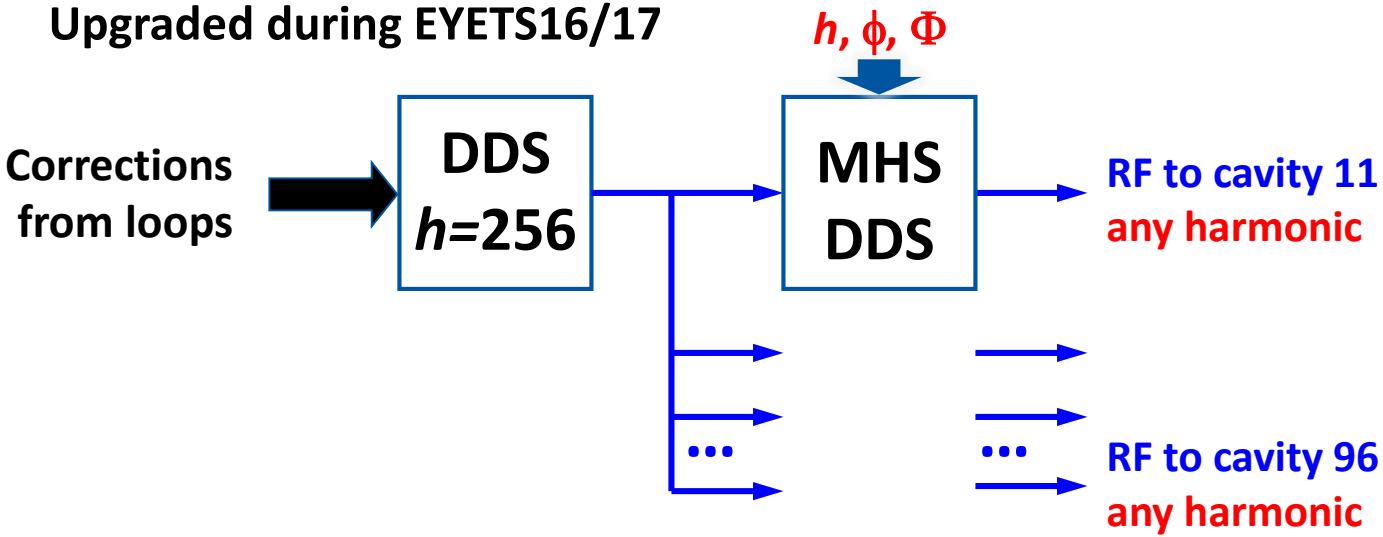
- 10 + 1 main accelerating ferrite-loaded cavities in PS
- Compensate time of flight such that field sums up for beam → Dephasing
- Fixed-target and EAST beams presently produced with analogue dephasing



*DDS: Direct Digital Synthesizer

RF beam control upgrades

- Beams to AD and LHC: more flexible RF source system for dephasing
- Single, fully programmable multi-harmonic RF source per cavity (MHS)
- Upgraded during EYETS16/17

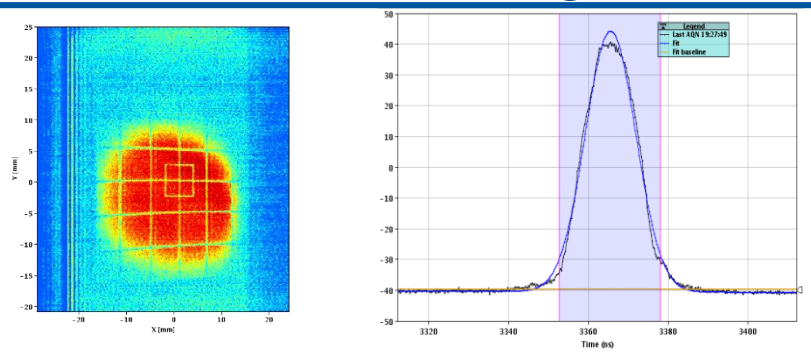
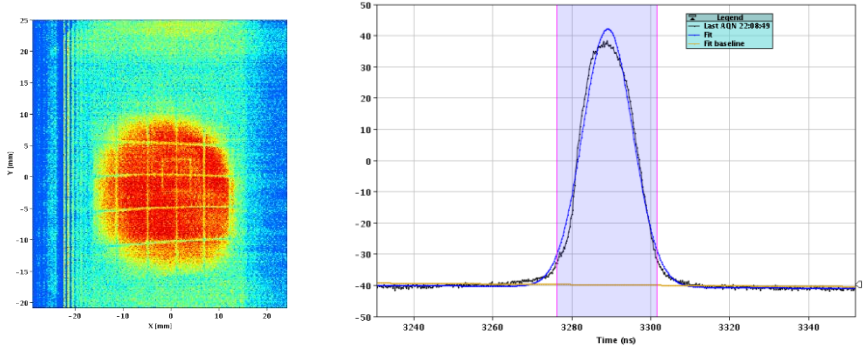


→ Migrating all user beams to MHS system, only longitudinal settings affected

→ Recently done for LHCPROBE and LHCINDIV → transparent

Example: TOF

Comparison of operational TOF beam with new clone using MHS

	Transverse	Longitudinal
Operational TOF cycle		
New MHS TOF cycle		

→ **No measureable difference in beam parameters**

→ **Migrate operational beams**

→ **Accumulate experience**