

# LIC Central Timing changes to be deployed

FOM

06/02/2024

G.Kruk on behalf of the Timing team

# Changes

- [TIMING-4414](#): New particle types [**Magnesium**, Boron and Krypton]
  - LEIR & PS: Mg7+ → SPS & LHC: Mg12+
  - LEIR & PS: B3+ → SPS & LHC: B5+
  - LEIR & PS: Kr22+ → SPS & LHC: Kr36+
- [TIMING-4376](#): New external condition to inhibit protons in the EAST T8 line
  - Inhibit button in the PSB island to prevent mixing protons and ions in the T8 line
- [TIMING-4461](#): New external conditions (beam permits) for PS, calculated by UCAP devices
  - 9 new conditions: I\_P.SOFT.<DESTINATION> that can be masked
- [TIMING-4463](#): Beam permit for LLRF and calculation of Dynamic Destination in LEIR
  - Do not accelerate the beam in LEIR if beam is not permitted (bad external conditions in PS/SPS) or batch not requested (LHC/HRM)
  - Option: Allow accelerating the beam and sending it to the LEIR DUMP if OP chooses to do so (tests/measurements)
  - New flag in the telegram LEI.COMLN.BEAM\_ON → Accelerate the beam → LTIM to generate a permit pulse for LLRF
  - DYN\_DEST timing field: if BEAM\_ON → [PS or LEIRDUMP] else [LEIRDUMP]
- [TIMING-4374](#): [BugFix] Include EAST\_DMP dest in the calculation of CPS.COMLN.DEST\_EA telegram bit

# The intervention

- LIC Central Timing needs to be restarted
  - No events & telegrams on the GMT cables for: LN3, LEIR, LN4, PSB, PS, SPS
- LEIR & PS FECs need to be restarted (new particle types)
  - No need for SPS FECs restart as the new particles won't be sent there in 2024
- We would like to reserve a bit more time than usual → ~45 min
  - Verification of all telegram changes & new external conditions
  - Reboot of FECs
- Preference for this Thursday or Friday morning, otherwise next week