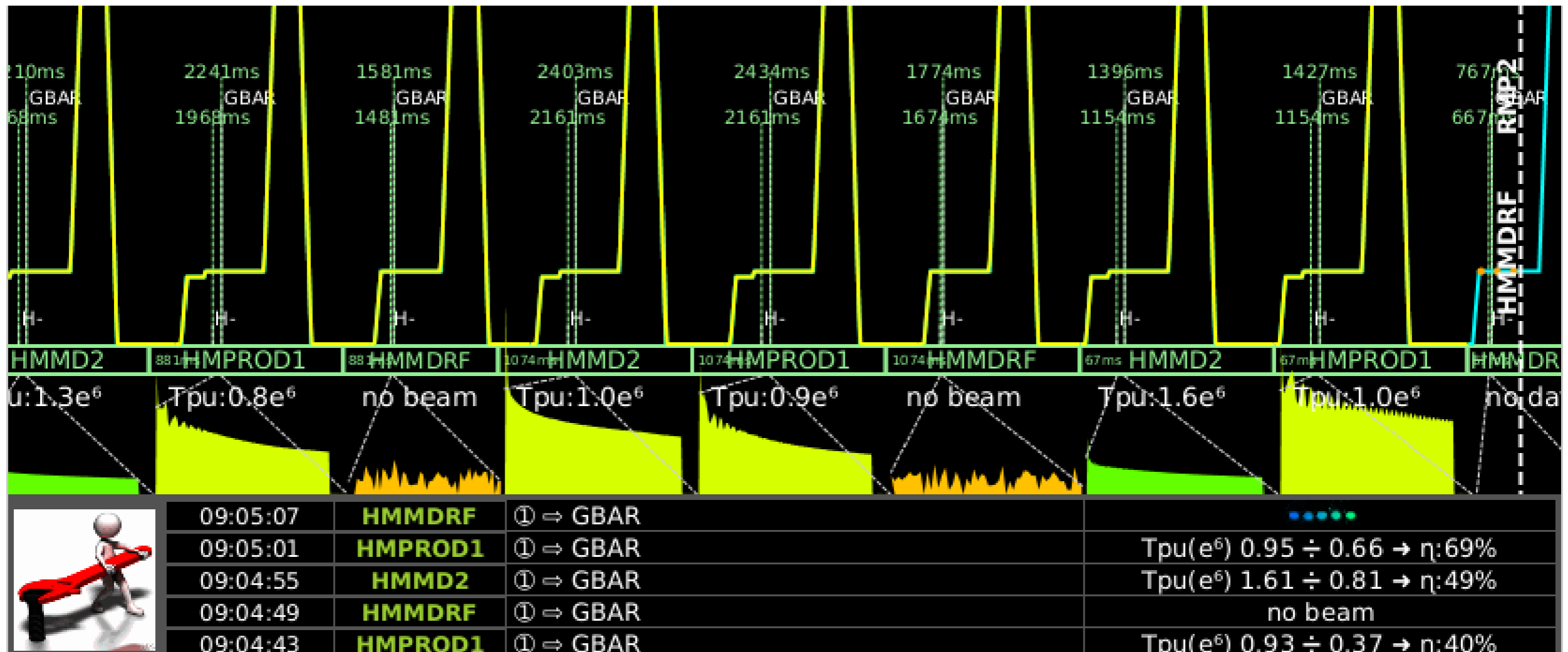


ELENA beam commissioning status



- Setup LNA.USER.HMPROD1 for **GBAR production beam**
 - h=4 + bunch rotation (manual); **~100 ns FWHM** beam
 - Using re-matched **optics** by ABT
 - Easily possible to **steer** the beam in the experiment with the dedicated knobs
- **GBAR** observed some first (partial) **beam deceleration**
 - **Orbit drift** observed between morning/evening on Wednesday, which was not visible elsewhere. No explanation so far.
- Source **H₂ cartridges** has been exchanged on Tuesday
- E-cooler **electron gun** cathode heated at nominal current over the week
- Advancements on **tools** for machine optimization
 - Successfully tested prof-of-principle setup for new **extraction timing** with ~1 ms delay set on fast delays
 - Defined **knobs** and mastered **incorporation rules** for ions orbit optimization in the cooler
 - Injection **oscillation** analysis
 - **Scraper** measurements
 - Data taking for optics measurement from BPM **turn-by-turn data**
- **Not possible to pulse the ion switch => no beam to LNE00/ALPHA**

- **iSeg power supplies** are still the weak point of ion switch powering
 - **Ion switch** itself has been **re-conditioned** up to about 31.5 kV with no breakdowns
 - Attempt to use a **newer iSeg firmware failed**
 - Attempt to **pulse FUG power supplies (1Q)** showed that we would require some additional circuit (HV resistors?) to obtain a fast discharge, presently of ~13 s.
 - Solution being explored by EPC
 - Presently, **iSeg operational as before**, but **still using FUG** → will switch tomorrow for ALPHA beam test
- **Cooling water circuit** is common among the whole AD hall and has **limited filtering capabilities**
 - On Friday, by opening some AD circuit the **conductivity increased** and the **H-source tripped** on overcurrent on the main HV circuit.
- **Power converter limits** are **not easily predictable** by LSA/cycle editor tools
 - Working on cycle structure adjustment is lengthening by settings inconsistencies
 - We need “**transactional**” trim from FGC_63, to **be deployed** and tested by EPC (January?)
- Baseline of **LNE50.BSGW.5060** (vertical plane only) is **still jumping**
 - Investigation (Ion pump, electrostatic quad, valve/beam stopper) did not reveal any issue
 - **Note:** on Tuesday the **baseline was jumping much less than usual**
 - **Only 2 profile monitors in the line for Gbar beam alignment**
- **Time jitter of extracted beam:**
 - **~20 ns rms jitter** always present. Unclear source: unstable **b-train**? LLRF **loop settings**?