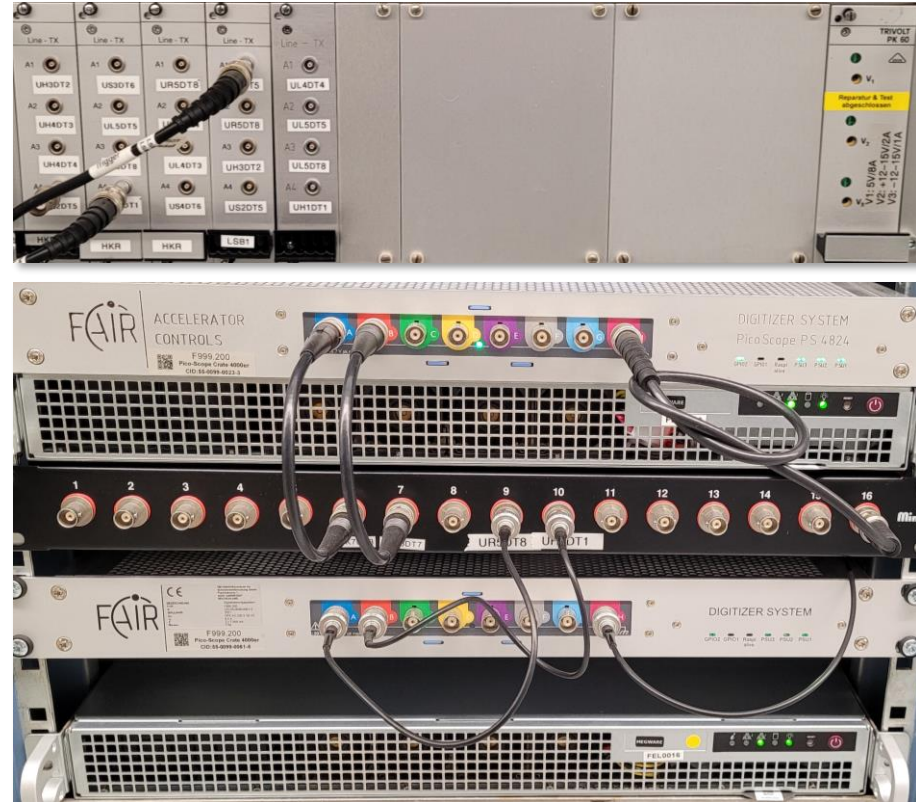# Modernisierung HKR UNILAC

Quellenoszilloskope

Digitizer Test-setup at LSB4

- **Test-Setup**:

  1x Server + 1x Digitizer

- **Test-Signals** − ACCT-s in LEBT:
  - GUL5DT8 (high current IS; Ter. North)
  - GUR4DT5 (PIG-source; Ter. South)
  - GUH1DT1 (both ion beams)

- **GUI**:

  Digitzer-Expert App

Test results

- **Time resolution of signals**:

  - two modes were compared :   **1 MHz** and **20 MHz**   =>   no need to have the "sample rate" higher **1 MHz**

- **Signal delaying/ageing** (for HC IS only):

  - signal delaying was **< 0.1 s**
  - NO signal ageing was observed

- **Acquisition rate**:

  - notably higher performace of Digitizer App compare to the Web-interface of the Osci
  - by **up to 10 Hz** operation **every single pulse** was registered and displayed in Digit. App
  - by operation with **16.7 Hz and higher**:
    - NO difference with **10 Hz** by displaying rate
    - appearance of „empty" pulses
    - **„hanging up"** of the Digit. App after a certain operation time
      (as higher repetition rate as shorter operation time to hanging up)

To be achieved

- **Acquisition rate:**
  - 50 Hz acquisition rate
    (observation of "failure" IS-pulses from PIG source)

- **Timing:**
  - integration of UNILAC timing into the new control system

- **User interface:**
  - displaying multi-channels (adjustable vertical scale for each channel)
  - possibility to switch between different trigger-events
    (for 3 injectors: Ter. North, Ter. South, HLI)

- **Archiving:**
  - Option of **Enable / Disable** archiving for each channel
  - User interface for working with archived data