PSI

RRL measurements on June 16th

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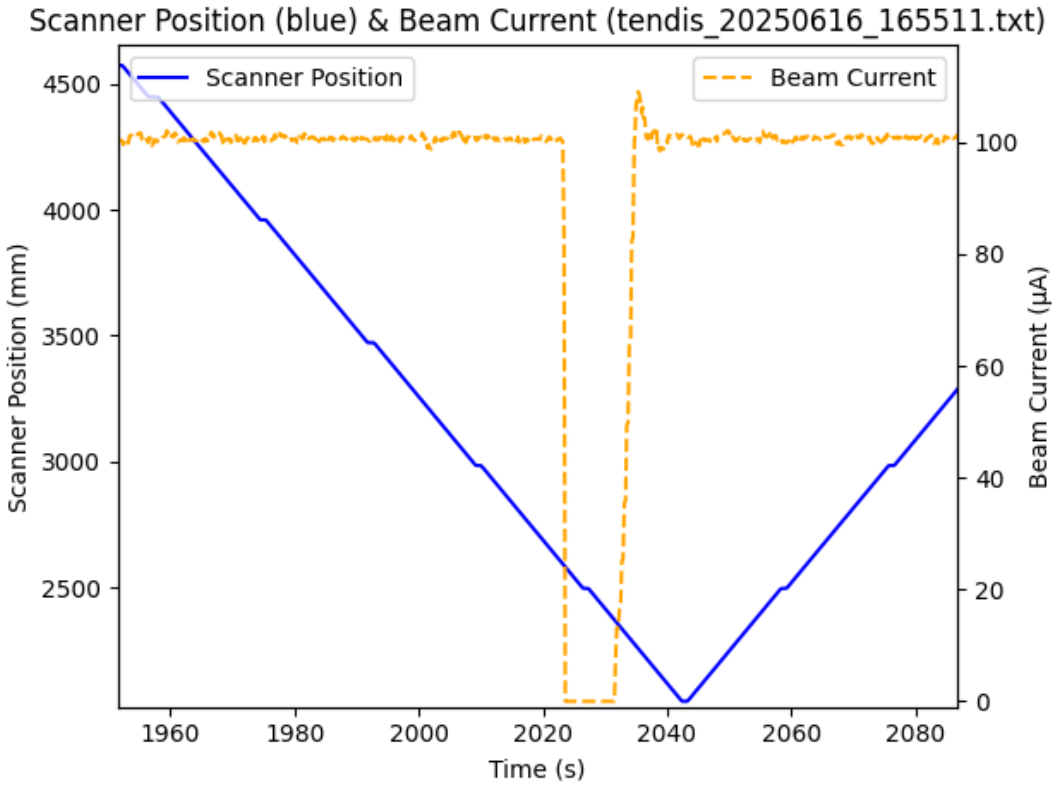
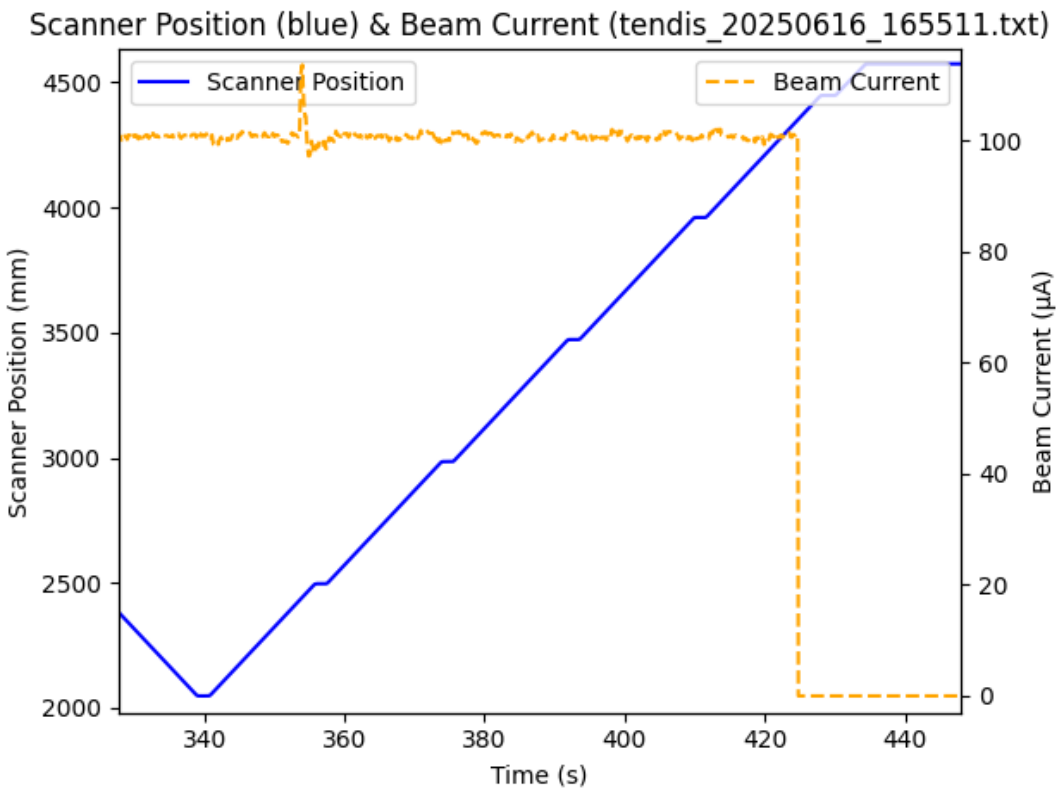
Investigation of EIC interlocks and position accuracy

- RRL movement generates EIC interlocks.
- RRL moves over 2.5 meters distance and stops every ~ 50 cm to perform data transfer.
- It was observed that sometimes the wagon moves back, affecting precision of beam position measurement (large variation, not possible to correct).
- The motor keeps holding current for 1 second after the end of the movement; changing requires motor driver firmware change and is not easy, but…
- Something can be done also in control-room application.
- Jochem made 2 versions of the application which reduce the time.
- We’ve done 6 scans at beam current of 100 uA for each version of the application.

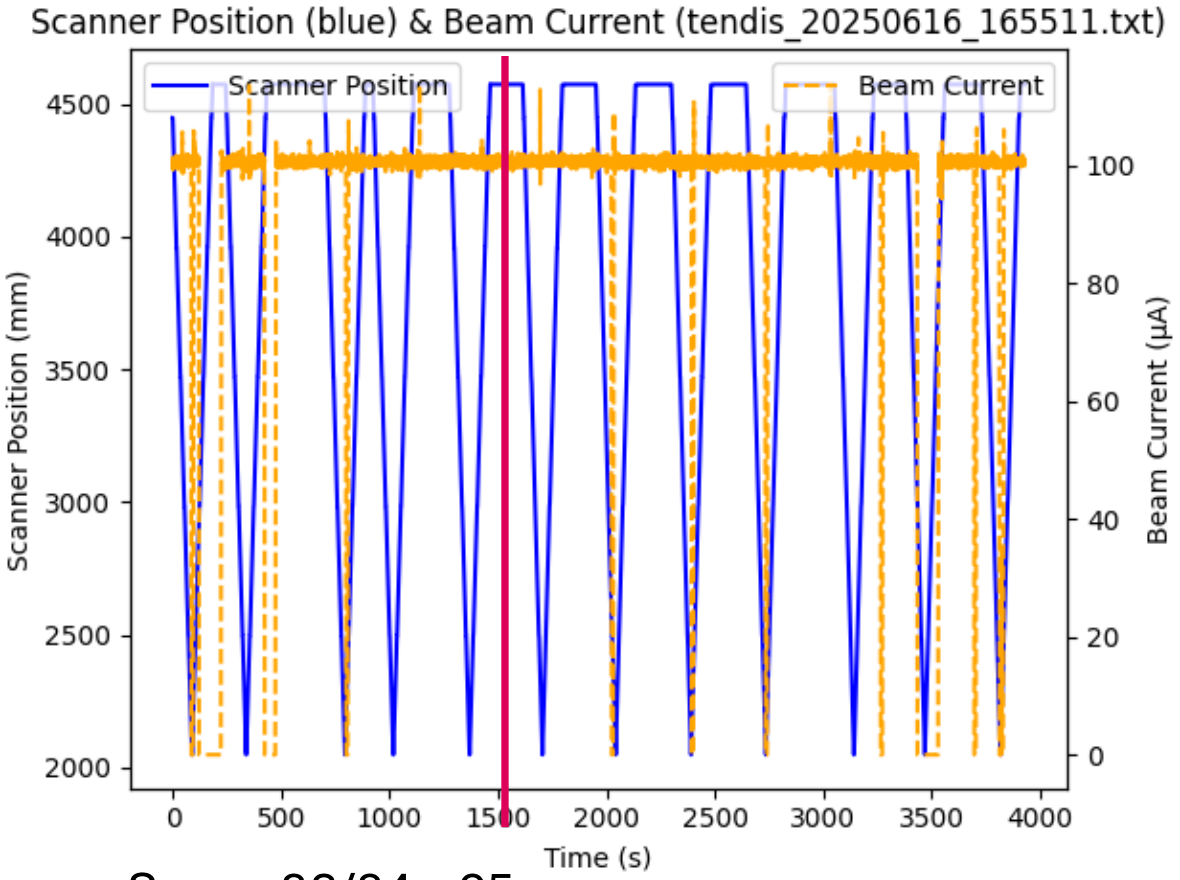
Investigation of EIC interlocks – examples:





Investigation of EIC interlocks – observations:

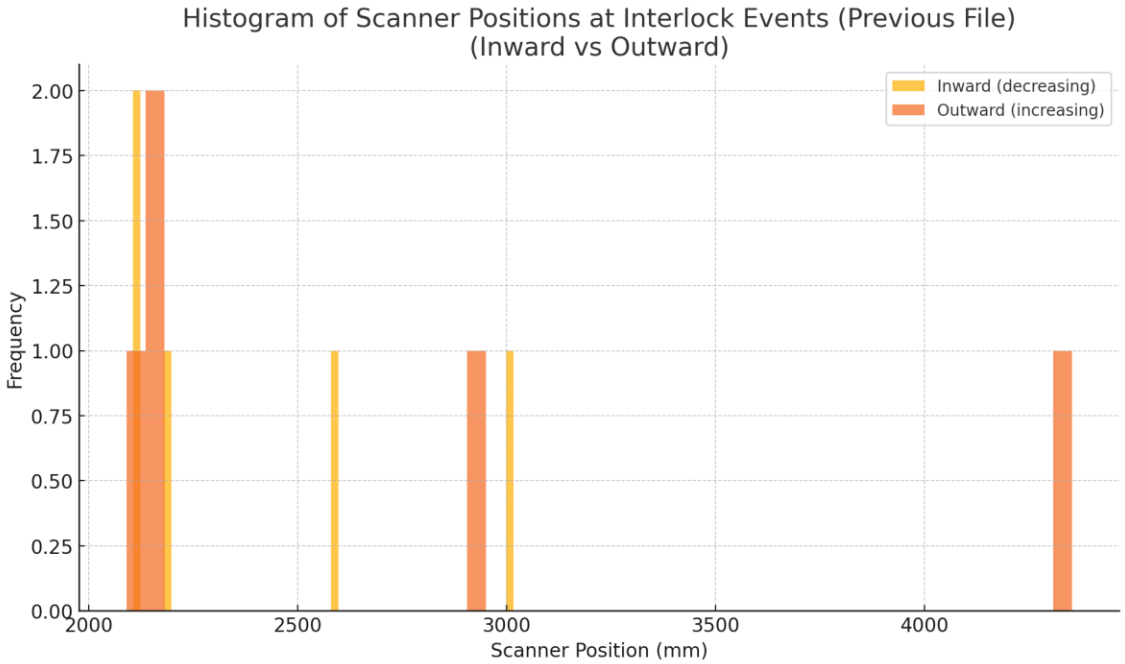
1. No obvious relation between number of interlocks and application version.
2. Temperature interlocks!
3. App v1: no start position calibration
4. App v2: + reduce waiting time
5. After this reverse to default version of the app but no time to do 6 scans for comparison.

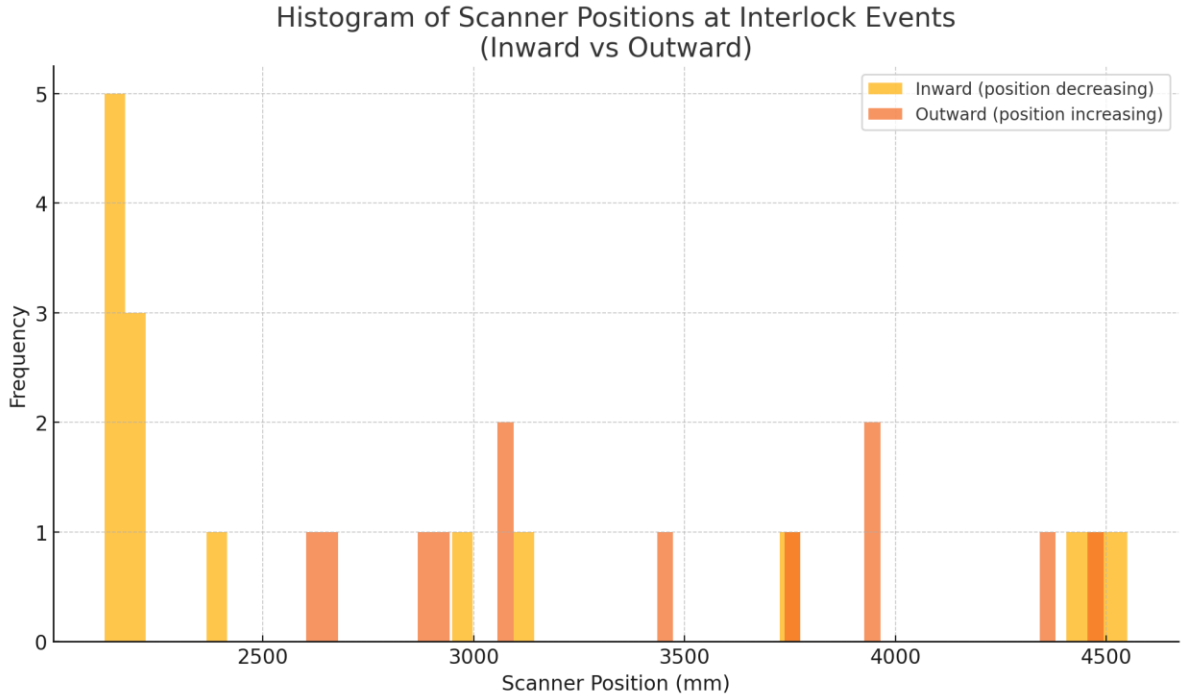


Scans 83/84 – 95
App version 1: scans 83-88, 3 EIC interlocks
App version 2: scans 89-95, 5 EIC interlocks

Investigation of EIC interlocks – observations:

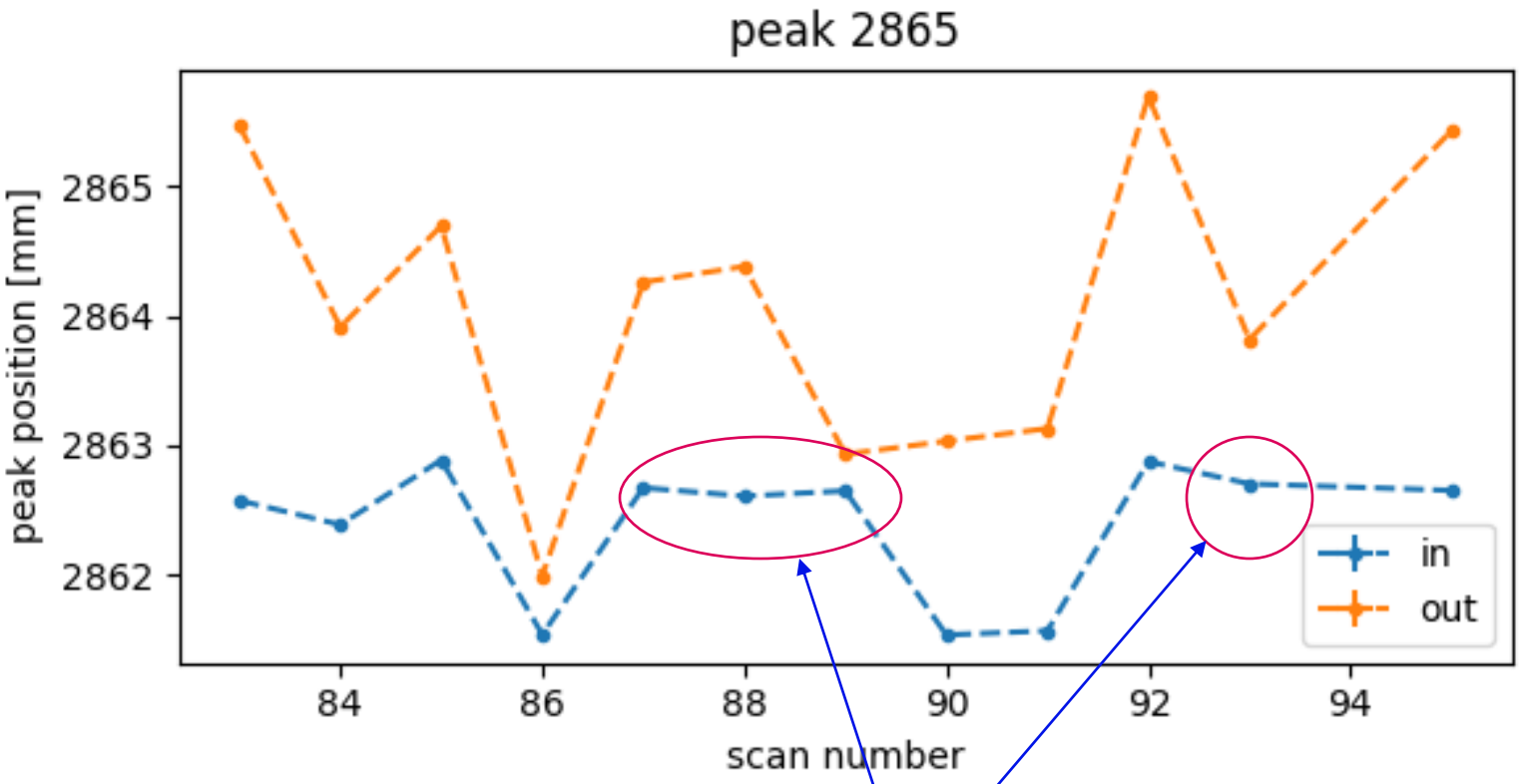
Location of interlocks: 100 uA and 1.7 mA beams:





Often interlock close to EIC (not really observed before!).

Beam position measurement repetability



1 mm spread, should be reduced to 0.1 mm

No EIC interlocks