

RPW LFR Flight software update

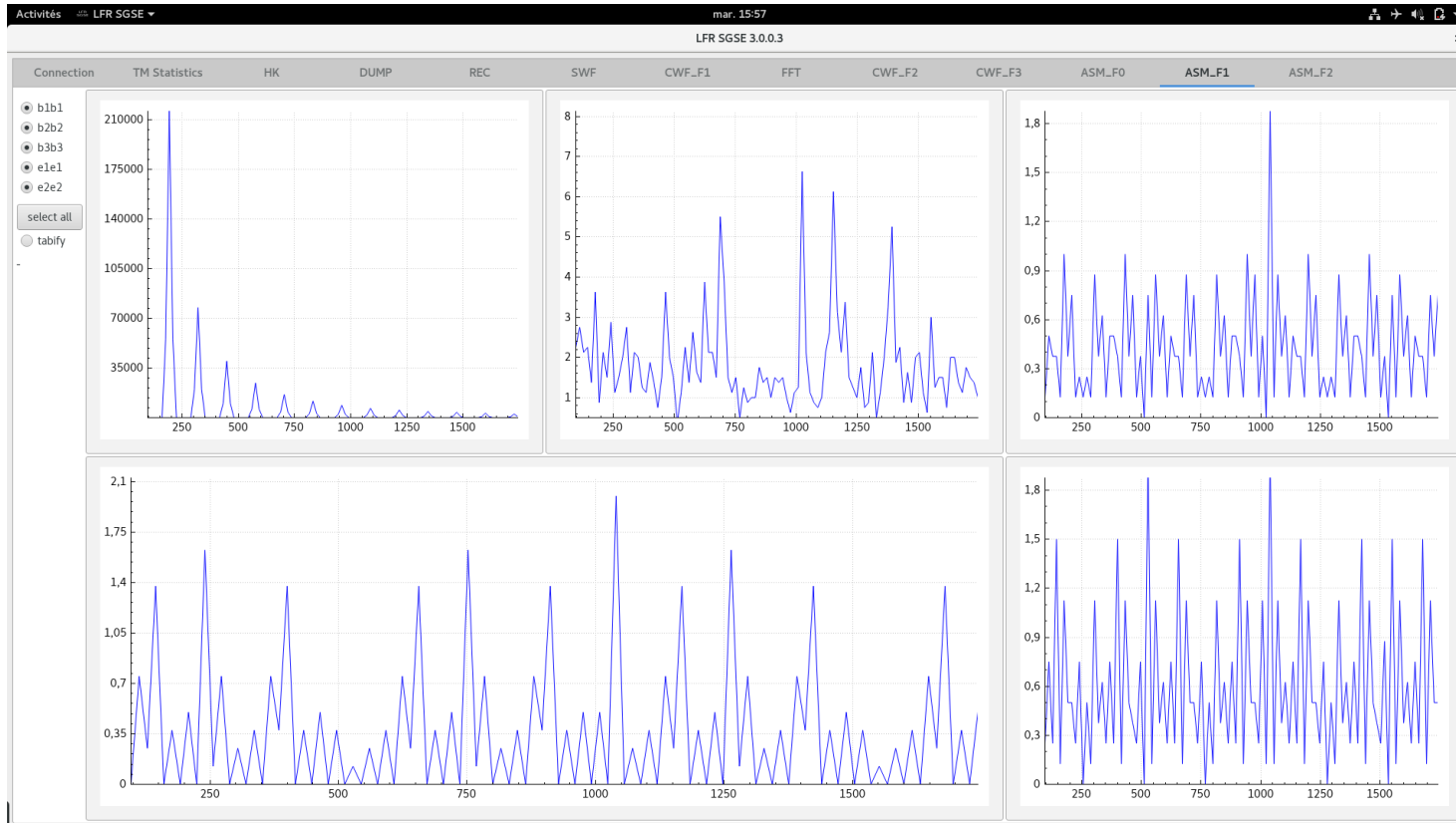
Progress meeting, 17/03/2021.

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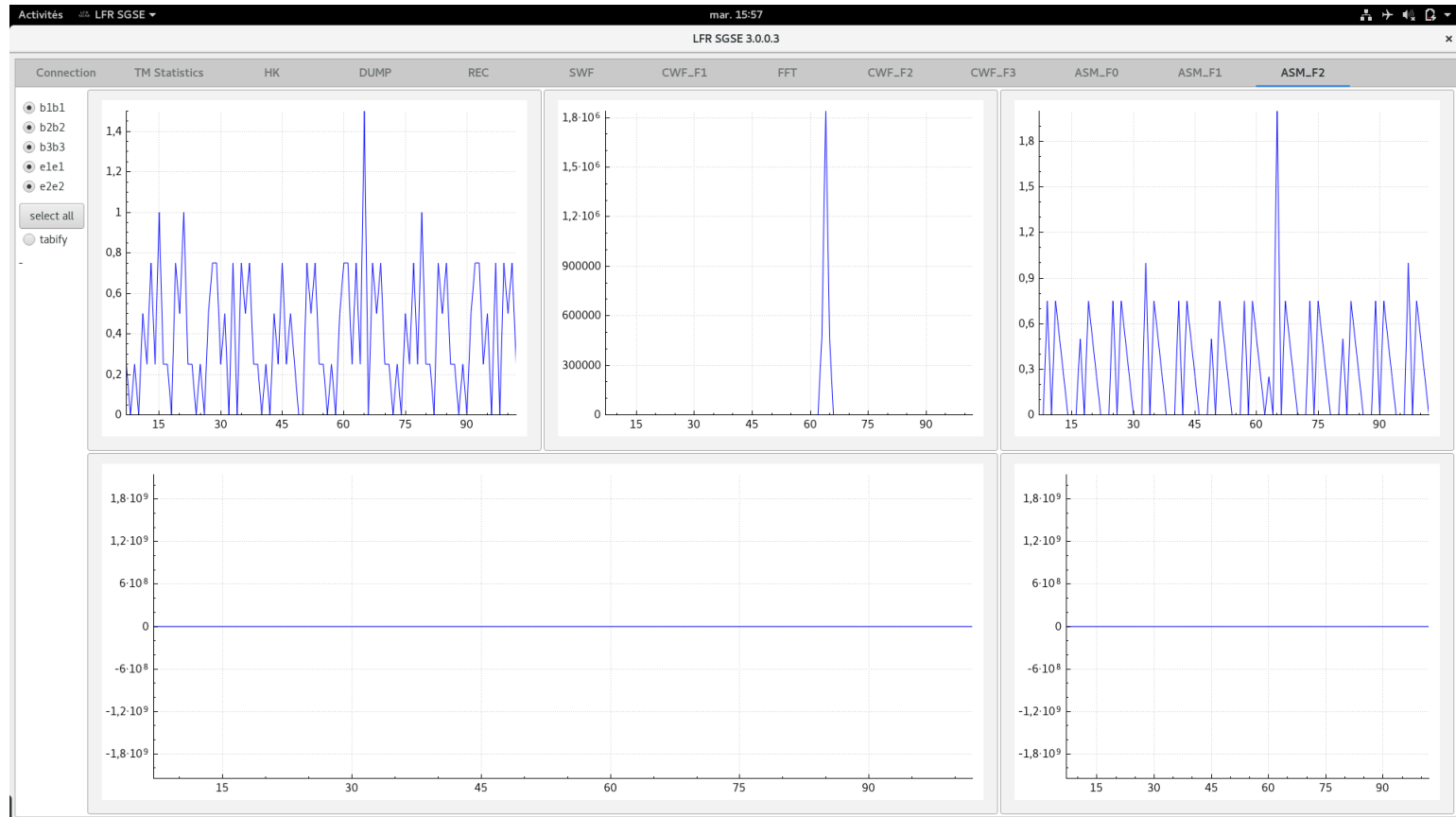
What is done since 10/02

- SGSE
- FSW update
 - Implementation and optimization of ASM Calibration
 - Manual on-board tests
 - BP1 computation rewrite and update (no more k coefs and updated some formula)

F1 ASM with 64Hz square signal on B1 and identity calibration matrices



F2 ASM same signal and 90° rotation calibration matrices



What has to be done

- SGSE rewrite (P1)
 - Gave-up for now
- FSW update (P0)
 - Complete BP1 and BP2 rewrite (<10 days)
 - Write BP unit tests (<10 days)
 - Update SGSE tests (TBD Bruno/Veronique)
 - Evaluate F2 FFT+ASM with CPU to increase resolution

Conclusion

- ASM calibration is implemented and seems to consume less CPU than “expected”
 - Normal mode 59% (Vs 54%)
 - SBM2 close to 83% (Vs 56%)
 - SBM1 not working yet (Vs 62%)
- New BP implementation is expected to save more CPU
- A lot of LFR FSW has changed so regressions are possible
- **Does calibrating ASM → changing E/B PSD ranges impact DPU(triggers)?**