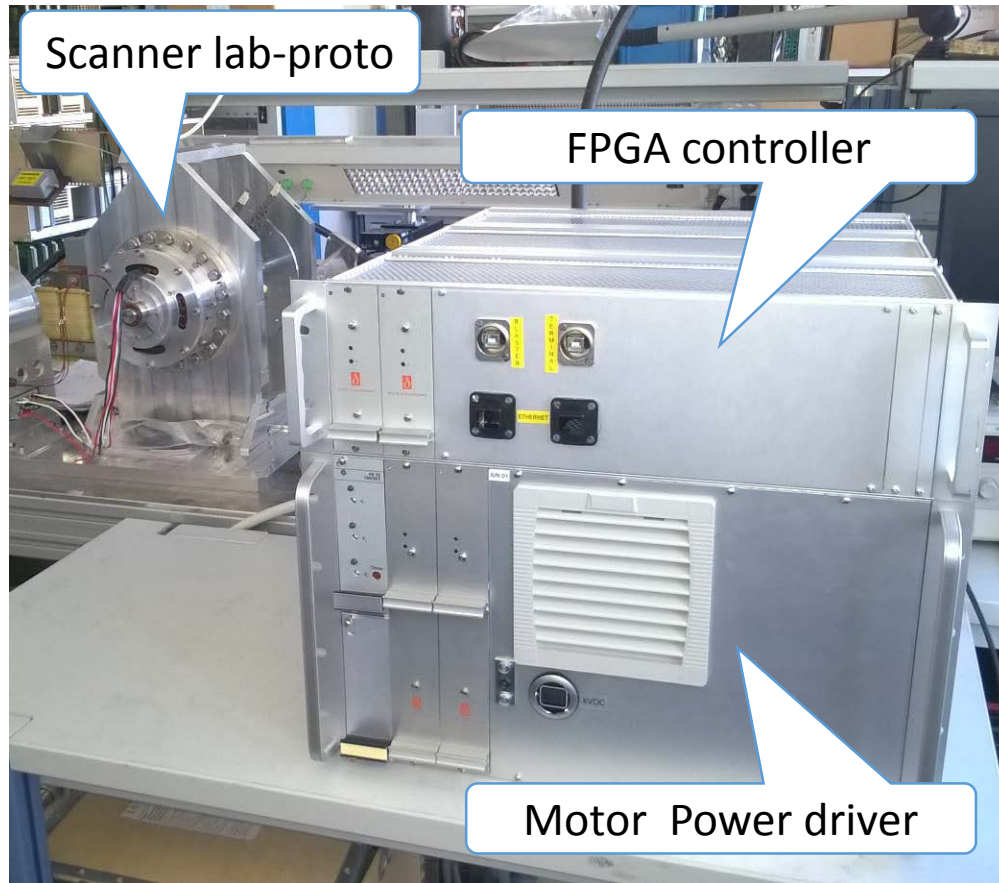


BWS Electronics status for the PSB installation

J. Emery for the electronics team
5 September 2016

Control Electronics Prototypes status



- DSpace laboratory system:
Ready for SPS and PSB scanner tests!
 - Custom FPGA systems for SPS:
 - 1 system in BA5 ready for tests
 - 1 system for 867 ready for installation
 - 1 system for Firmware development
- > All now capable of outputting the OPS with analog lines (to connect it to an oscilloscope)

=> Firmware FPGA being modified to adapt custom systems for the PSB scanners (Minor release)

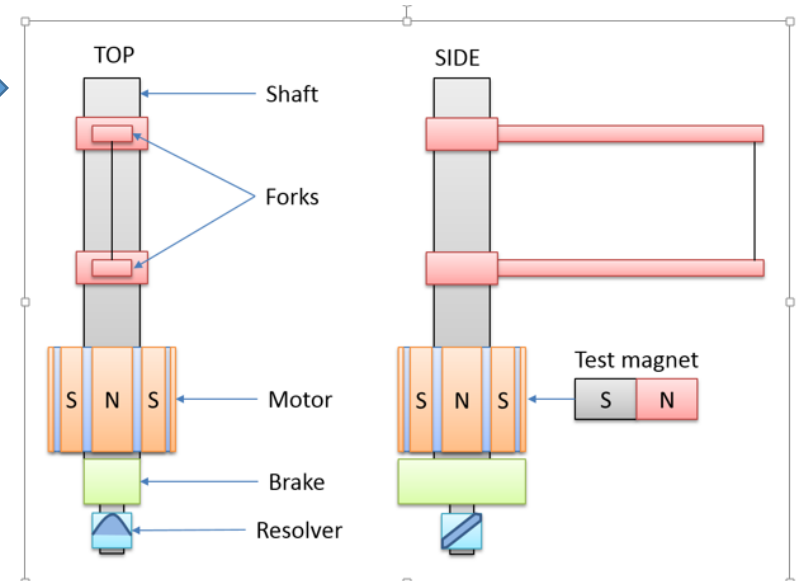
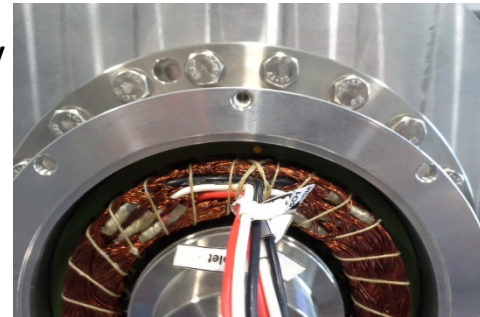


On-going electronics development

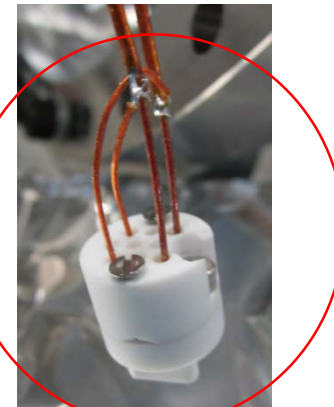
- Firmware for the PSB control (Jonathan)
- New inverter power board (Patrik)
- Communication between intelligent drive and VFC board (Cedric)
- October: Work with Design office for the version 2 of the inverter board (Patrik).
- November: Work with Design office for version 2 of the scanner mezzanine board (Jonathan)
- We will build 4 new control systems next year based on version 2 boards and on the VFC (depending on it availability).

Prototype assembly requirement for magnetic and electric compliance

- Magnetic alignment of the rotor
- Stators alignments:
 - Motor: mechanically always in the same way as for the SPS prototypes
 - Resolver should rotate and will be done when commissioning in the BI-PM laboratory

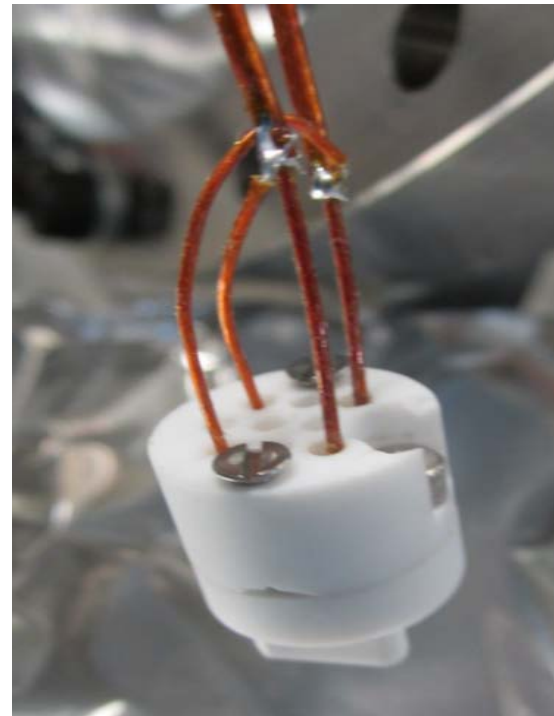


- Motor, resolver, wire cabling
- Electrical feedthrough
 - > Need time with the scanner to develop the procedure and the tooling



Components lists for PSB prototypes

- 4x Electrical feedthrough
- 4x Connectors for vacuum side
- 4x Connectors for air side
- Coax cabling for vacuum
- 1x Resolver new type
(3x Delivery in October)





Prototype cables PSB and PS

- Requests done on time for the copper and fibres to EN-EL
- PSB & PS are planned to be pulled this YETS
- New surface racks will be installed in the PSB next to the new BLM by EN-EL.
- We should provide them tunnel mini-rack to be able to install the fibre optics.

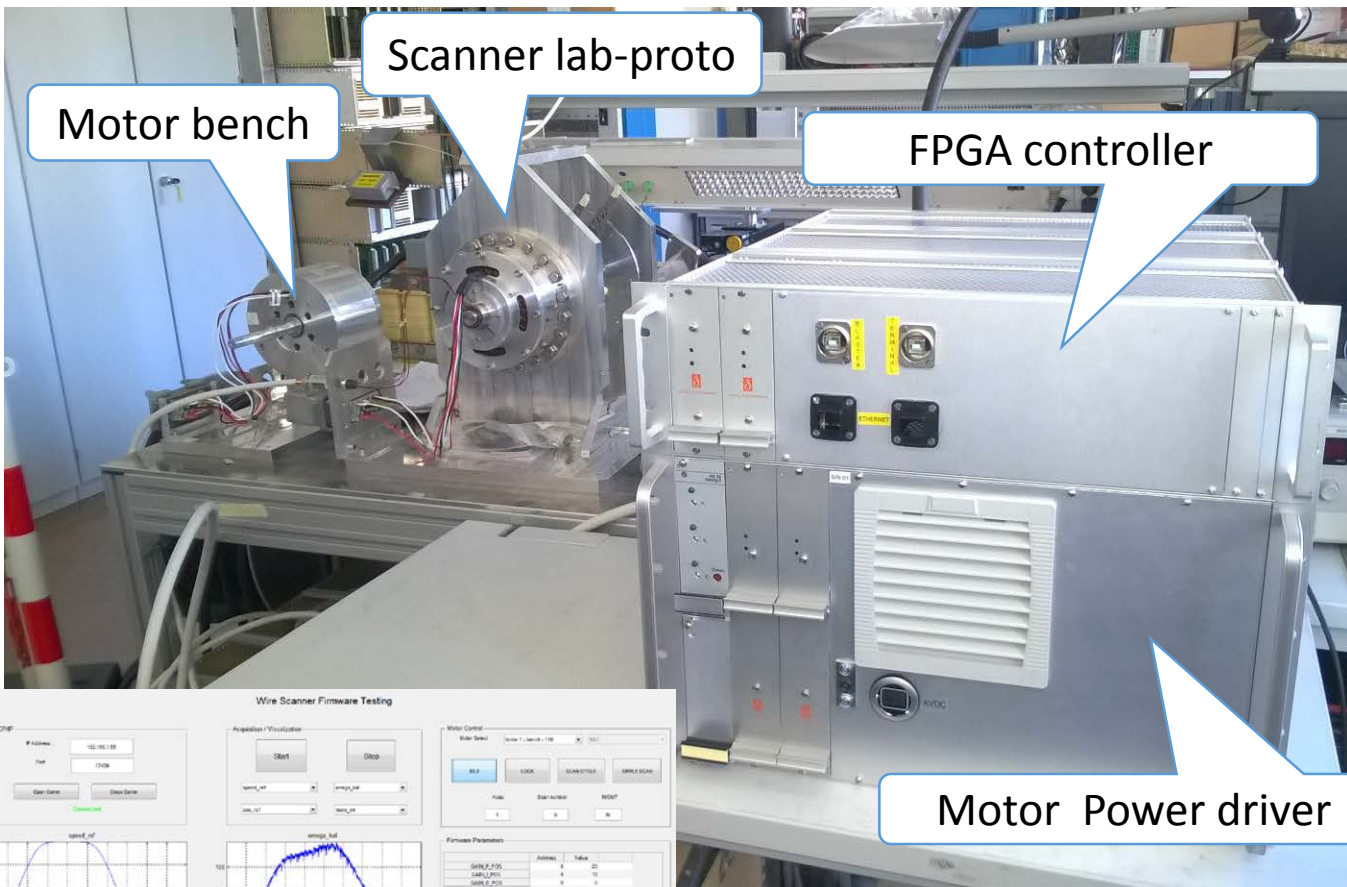


Calibration bench

- Control electronics SPS ready for installation in 867.
- So if we want to start the calibration commissioning and debugging with SPS scanner, the control electronics is ready
- Possible also to make multiple scans automatically if needed to make an accelerated aging (as we did last year, but under vacuum)



BWS Intelligent driver re-installed in the SPS



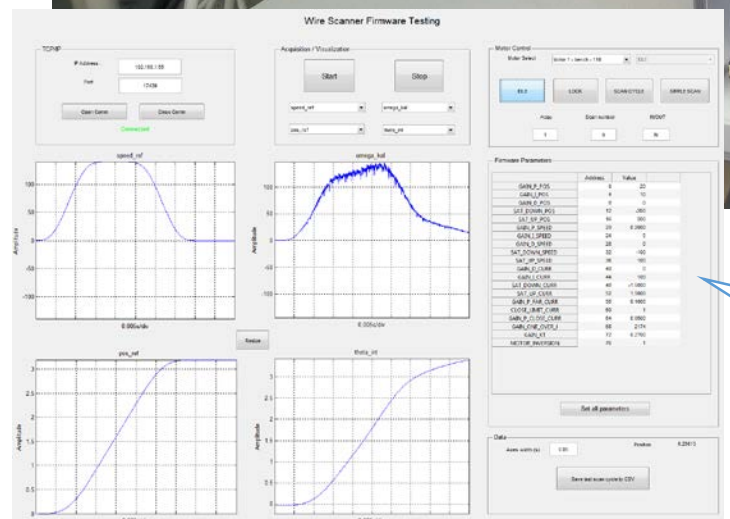
Motor bench

Scanner lab-proto

FPGA controller

Motor Power driver

Installed in BA5 and connected to the SPS scanner proto (02.09.2016)



Software interface to the FPGA controller over Ethernet (MatLab)

Wire scanner electronics status - 05.09.2016 - J.Emery



BA5 status for the control electronics

- Scanner Control system & PC installed ready for test synchro with beam (if possible without beam first).
- Wire integrity checked & good!
- VME crate configured by BI-SW:
 - 1 LTIM for the 'FLY'
 - 1 LTIM for the 'ACQ'waiting finalisation by Lars when he is back (Wednesday).
- Acquisition electronics & second PC being installed (by Jose)