



**ELENA:
Status of the Longitudinal Pickups**

Date: 21/09/2017

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1 STATUS OF THE LONGITUDINAL PICKUPS

J. Sanchez-Quesada presents the general status of the electronic modules.

The analog combiner module is being produced. The Extraction line buffer has been installed and tested. Display and control modules are ready to be installed, but their firmware differs depending on in which crate they are installed.

The power modules are ready but they still need to be tested. The Low noise amplifiers have been tested and are ready for installation.

The filter boxes that needs to be installed next to the pickups are ready but they could be improved in order to reduce the noise floor at low frequencies.

Low and High frequency PU installed in the ring are calibrated. They fulfil the specifications. There are still tests to be done in order to be able to compare them with the electrostatic PU.

The extraction line pick-ups are being assembled. They still have to go through the vacuum tests. The modified chambers are in interference with the coils and present some discrepancies on the connection point location (180 degrees rotation).

The corrected vacuum chambers are expected during this week. F. Butin asks about the impact on the delivery. Jorge answers that it should be checked with the person in charge of the modifications. Technicians should know how to assemble the whole system. The characteristics of the coil should be measured after the mounting. This could be done by R. Louwerse if we explain to him what to measure and how to measure it.

Jorge says that there is no problem for him to explain all the insight of the PU to someone before his contract ends.

W. Hofle says that it should be nice to have a written document describing the steps needed that would lead to the installation of the complete system. It would be good also to know what to check after the welding and how to test it.

F. Butin insists on the fact that opening the machine for the PU installation is a 2 week work. It implies that the system must come fully tested beforehand.

Jorge reminds that bake-out temperature is 205 degrees and that the alignment is not critical. There is a support that can be used for aligning before welding.

Measurements were performed using the combiner prototype (LF+HF) but without time of flight compensation. Some ringing was observed due to a matching problem but it has been solved in the new combiner version that is being produced.

There is still a spurious content around the Frev carrier that need to be studied.

Jorge says that the Safety documentation has been sent for review long time ago. The system has no particular safety concern (no HV).

The work that still need to be done :

Electronics:

Test the combiner modules from production, including the programmable time-of-flight compensation.



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Fill the transfer line control crates in AY02 rack.

Beam transformers:

Continue with the assembly.

Test the transformers before and after the electron beam welding.

Remaining work in the main workshop:

Welding of the vacuum flanges.

Preparation of the chambers for the vacuum tests.

Remaining work to be done by the vacuum experts:

Conformity tests (includes bake-out)

(after installing the transformers in the transfer lines): connecting the vacuum chambers, and proceed with the bake-out.

RF expert:

Installation of the low noise amplifiers, and calibration. • Filter box and cables. • Final test.

Firmware:

A firmware for the control module is required, in order to gain remote control over the head amplifier gain, calibration switch, input switch, power switch and voltage/current/temperature readouts.

Firmware for the display module is also required, but not a show-stopper.

Software:

The Tomoscope should have the possibility to **invert** the combined signal coming from the ring pick-ups. This can be done in software, if the option is not available at the digitizer.

FESA classes required for the remote control.

T. Eriksson asks about who will be in charge of finishing the Firmware and software. Jorge answers that M. Jaussi has all the elements to end the firmware. M. Jaussi priorities may have to be redefined to allow him to work on this package.

M.E. Angoletta says that so far we can't tell if the already installed PU is enough for the LLRF. It will be known soon after the tests with PBars.

R. Louwarse is now the person to contact for technical matters about the LPU while the overall responsibility is within the RF/FB section