



LHC RF Meeting

14th June 2007

Participants: Maria-Elena Angoletta, Luca Arnaudon, Philippe Baudrenghien, Olivier Brunner, Edmond Ciapala, Trevor Linnecar, John Molendijk, Eric Montesinos, Elena Shaposhnikova, Joachim Tückmantel.

1. P4 RF Installation/Commissioning


 **General P4 planning:** As last week, cool-down of sector 4-5 remaining as planned. An overview of the general planning will be presented at the LHC Machine Advisory Committee this afternoon. (*Post meeting:* Power testing is planned in Sector 4-5 from mid-September to end of November. In Sector 3-4, from beginning to end November. The connection of cryo in 3-4 to 4-5 (QUI intervention) is in August; this needs warming up of the QRL. We will therefore try to obtain liquid in the cavities in the forthcoming cool-down, so that we can do the low power measurements in the eight cavities in Sector 4-5. We could then safely connect waveguides in the tunnel with cavities and cryo lines empty during the cryo work, being ready for conditioning after the second cool-down).

 **Vacuum work:** The final vacuum interconnections are just being installed. These and other sections need to be baked and there is serious doubt as to whether this can be completed next week, before the start of cool-down, when there will be no access in the RF sectors. It may be possible to do bakeout or pumping during the fixed constant 80 K running period which precedes cool down to 20 K.

For low-power measurements we can work with the sector valves on the modules closed, independently of the rest of the vacuum sector. For conditioning however, the whole RF sector, both beams, needs to be completely baked and pumped. (Note that the sector valves limiting the RF zone are just next to the Synchrotron Radiation Undulator Magnets for the BSRT, before the D3s).

Post Meeting: We will not attempt to condition with sector valves on the modules closed. Also there is no problem to run RF on cold cavities when neighbouring cavities are warm. Note that the LSS vacuum layouts and status can be found at:


`\\cern.ch\dfs\Divisions\EST\Groups\IC\LC\Public\LSS_Schematic_View_V1.1`

 **Access system tests:** We understand that these were completed successfully last week as planned. Some remaining work remains to be done next week. This partly concerns the special arrangements to be put in place temporarily for the cool-down of sector 4-5. (e.g. blocking off ground floor tunnel linking the RF and cryo sides of UX45)


ACS in UX45/RUX 45:


- **Klystron in UX45:** Twelve klystrons have now been powered. Powering of the remaining four is in progress. The modified collector cooling parts from Thales will be tested here in one week. We are reasonably confident that the test will be successful. In order to allow testing, calibration and conditioning up to full power the changing of these parts will be done as soon as possible in UX45, four klystrons at a time.


2. LLRF:

 **Dual DDS Conditioning module** – The first of the series production batch of 25 has been fully tested. Only one minor modification is needed to the series.

 **Polar loop:** Series production has been launched

 **Switch and protection:** While the first part series will not be available in July, we expect delivery to be well in time for the first power tests in September in Sector 4-5.

 **Clock distribution** Modifications and tests nearly complete. A remote identification chip will however be added to each module.

 **Patch cables:** We still need to order around 20 SMA/SMC cables per cavity in the Faraday cages to connect the VME modules to the patch panels. This is stores material and should be ordered straight away. We can use the installation budget code for this.

Next Meeting: Thursday 21st June at 08:45 in the JBA room

E. Ciapala, 18th June 2007.