

LHC RF Meeting

22nd February 2008

Participants: Frode Weierud, Daniel Valuch, Elena Chapochnikova, Thomas Bohl, Edmond Ciapala, Andy Butterworth, Vittorio Rossi, Joachim Tuckmantel, Luca Arnaudon, Olivier Brunner, Maria Elena Angoletta

1. Status of UX45 equipment

- ✚ All eight cavities of sector 45 are now fully conditioned. On Monday a test of the coupler polarization was performed, with the whole chain from the power supply to the end of the cable verified. We still need to switch on to check if we have the correct voltage and current.
- ✚ John and Philippe have set up the Low Level loops on three cavities and started a fourth. The exercise took 1 week for the first cavity, 3 days for the second and 1 day for the third.

2. UX45 planning

- ✚ Sector 45 is now warming up. Sector 34 will start cooling down at the end of March and should be ready for RF by the end of April.
- ✚ No access will be possible to ADT before week 12.

3. Preparation for Sector 34 commissioning

- ✚ A list of things which need to be done before the sector 34 cooldown has been compiled by Olivier and is on the whiteboard in the lab 864-RA27 next to the operation console area.
- ✚ Power converter tests: We still need to test running all four HV converters simultaneously at full power. This will be done with the klystrons running into short circuits. The short circuits are in place in the sector 34 lines, and need to be re-installed in 45. The access interlock will need to be strapped, and this has been agreed with G. Roy. The spare power converter will also be tested, along with the spare HV cable between the surface and UX45.
- ✚ Low Level hardware: Everything will be installed and ready in sector 34 for cooldown. The required modules are currently being tested in the lab.
- ✚ Software: The software team will deploy and test all the remaining FESA classes (8 in total) for the Cavity controller.
- ✚ TS/EL: UPS circuits (and some normal ones) have 16A fuses in racks, protected upstream by 10A fuses which are not accessible, need to break the zone to access. Pablo is following this up.
- ✚ The time before the start of sector 34 commissioning will also be used for installation of the RF Synchro equipment in SR4.

4. LLRF progress

- ✚ Beam Control Loops module: The first prototype has been launched for the Beam Control Loops interface card. Enough Tuner Control/BC Loops Processor cards are in the process of being produced. 400 Category 7 RJ45 connectors have been ordered, which will be sufficient for all series production including Daniel's boards.

5. ADT

- ✚ ADT power: the power tests are not completely finished. There is a list of things to be done from the last 2 weeks of March onwards, which should be finished by the end of March.
- ✚ The cabling campaign in UX45 is almost completed.
- ✚ The 1W pre-drivers are now finished, and when installed will be able to drive all amplifiers from the surface for the power tests.
- ✚ Cable delay calibration: In total 32 cables must be adjusted with compensation cables. Some data exist from last year for existing cables, but some are new cables which still need to be measured. One day is probably sufficient to do the measurements for experienced people: it requires 3 people, 2 in the tunnel, 1 on the surface. The two FSU colleagues are currently fully occupied with module testing; we will investigate the possibility of getting help from operators. Sector 34 is open and the work could be started immediately. Sector 45 is prepared but still requires installation of some loads.
- ✚ Broken cable: This will be further investigated when the zone is open.

6. ADT Low Level

- ✚ The pickup front end digital card will soon be back from production.
- ✚ Prototypes of the analogue front end card are expected in 2 weeks time.
- ✚ Series production of the comb filters is ongoing, which will be followed by the assembly of the associated crate. A bunch signal has been simulated with a fast pulse generator and the result looks good.
- ✚ The digital processor card is in the design office and the design will be terminated in 2 weeks. 4 pre-series cards will be produced, out of 8 needed for installation.

7. LTC extended meeting

- ✚ This will take place on 4-7 March. Three presentations will be made by the RF group: Olivier on preparation for beam, Philippe on beam commissioning, Wolfgang on ADT beam commissioning.

8. High power RF workshop

- ✚ To be held at CERN on March 25-28. There will be a Working Group on clean RF power. Daniel suggests it would be interesting for some people from the RF group to participate in this and present work on the klystron noise reduction for LHC.

Next meeting: Friday 14th March at 08:45 in the JB Adams room 864 2 B-14.

A. Butterworth, 6th March 2008