

LHC RF Meeting

26th June 2008

Participants: John Molendijk, Frode Weierud, Daniel Valuch, Elena Chapochnikova, Edmond Ciapala, Andy Butterworth, Vittorio Rossi, Luca Arnaudon, Olivier Brunner, Maria Elena Angoletta, Thomas Bohl, Trevor Linnecar

1. Point 4 status and planning

- ✚ **Sector 3-4:** Both modules of sector 3-4 are full, and cryo stability is very good. The access interlock tests have been done. Helium recovery via the warm recovery line has been tested successfully. The patrouille is done, we can now start conditioning. The low power measurements have been done; the tuning ranges and Q versus coupler positions agree well with previous measurements, apart from in Module 1 cavity D where the effect of the corrective spring seemed to be smaller in LHC than in SM18.
- ✚ **Access:** The zone is closed, but we can have access if necessary. It has been agreed with the control room that there will be no other access until 7 July. Thereafter there will be at least 1 day access for BI in week 28, then a full week of access for BI in week 29. Interventions on the DFBs will require access in week 29 all week, plus maybe some days in week 28, so this means 2 weeks without RF (this coincides with holidays for many RF group members).
- ✚ **Programme:** Start conditioning today, condition to 20kW CW to do RF leakage tests. It is hoped to do a full Low Level test on the first cavity by the end of next week.
- ✚ **Sector 4-5:** This is the last sector to be cooled down, and is now close to 80K. It will be possible to fill the cavities in week 29 (14 July).

2. General LHC planning

- ✚ Sector 7-8 has its last 5.5TeV tests today, followed by 3 weeks stop to move electronics due to radiation worries.
- ✚ The official planning has been updated today by K. Foraz. The first possible date for beam is now around end August. ATLAS is warming up its end-cap, and this should be ready for end July.

3. Low Level RF

- ✚ **Tuner/coupler control:** The new DSP code is ready for the Tuner Control module, giving full control of the coupler position. It will be installed this morning, along with the FPGA firmware for the Tuner Control VME board and motor control chassis.
- ✚ **Crate management module:** the series has been launched.
- ✚ **Beam Phase module:** now in production. The last 6 filter boards have been received from external manufacturer, and all are within 500kHz of the correct centre frequency. The chassis are being assembled.

4. ADT Low Level

- ✚ 4 ADT DSPU modules have been received. Vittorio has started to test these, so far without problems. Daniel would like to test the communication with his card as soon as possible.

5. Software

- ✚ **US-LARP collaboration:** Dan Van Winkle and Claudio Rivetta from SLAC are at CERN working on the Baseband Network Analyser software for Cavity Controller optimisation. This is software running under Matlab which makes use of the embedded diagnostic acquisition and excitation buffers in our LLRF VME boards. This is progressing well and has been useful in helping us to debug the front-end software at the same time.
- ✚ **Application software:** Many LabView interfaces are now available for expert applications. These are operational for the power system, and nearly operational for the cavity LL system.
- ✚ **Documentation:** A "Blue Book" operations manual has been started with instructions for using the software, and also interventions on the hardware (interlocks etc.). The PLC FESA software for ADT is nearly finished and will be tested tomorrow.

6. AOB

- ✚ **Klystrons for India:** The test of the last klystron is almost finished.
- ✚ Daniel has found that cables have been taken from ADT equipment in SR4 for use in LLRF tests. The cables were clearly labelled as belonging to the ADT system. Colleagues are kindly requested not to remove equipment in this way in future.

A. Butterworth, 1st July 2008