LHC RF Meeting
22nd September 2006

Participants: Luca Arnaudon, Philippe Baudrenghien, Thomas Bohl, Olivier Brunner, Andy Butterworth, Edmond Ciapala, Trevor Linnecar, Pierre Maesen , Eric Montesinos, Joachim Tückmantel, Daniel Valuch.

1. ACS cavities and couplers:

- **Coupler for single cavity module:** Coupler MC130 has been mounted but a leak is suspected around the polarization ceramic. This has still to be confirmed. If so, it will have to be dismounted and its SA2 conditioning partner MC125 fitted instead.

2. UX45/RUX45 installation (Olivier et al)

Olivier gave present status with an account of recent progress and presented some photographs: (\\cern.ch\dfs\Departments\AB\Groups\RF\Sections\MK\pictures\HRF Meeting 22.9.06)

- **Alignment:** Delayed due to other priorities for SU group - now planned for next week, but still to be confirmed.
- **ADT kickers:** A prototype of a protecting cage has been made.
- **APW:** We will slightly delay installation of the delicate APW monitors till work is completed in that area. The patch panels for the flexwell cables have been completed and the cables connected.
- **HV bunkers:** A first bunker has been completely installed.
- **Faraday cage and trench patch panels:** The RF drive cables have been connected to the Faraday cage front patch panels. The difficult job of installing the patch panels in the trenches at the klystron end is nearly finished.
- **ADT water cooling:** The fitting of rubber strips on support brackets for the ADT water pipes is nearly complete.
- **Electricity for bake-out in RF area** – Distribution boxes have been put in place.
- **Passageway between centre modules:** This has been studied by the integration team. It will have to be quite high (~2 m) in order to pass over the vacuum valves of the modules. We should make sure that the valves are protected from objects accidentally dropped over the passageway.
- **ACS antenna cables:** The two flexwell ACS antenna cables which have been bent too tightly around a corner of the tunnel wall still remain to be measured. **(Action: J-C Perrier)**
- **380 V distribution box in Faraday cage:** The light switch still has to be fitted to the box and coloured labels put on the on the black phase wires. **(Action: J-C Perrier)**
- **BPM monitors:** BI have installed the BPMWA monitors in RUX45

3. SR4 status:

- **PLC units** for ADT power control will be put in place next week.
- **Control room enclosure:** Jean-Claude has obtained two offers. However we need to go through a divisional request procedure before we can make any purchase. This has been started with FI department. We should follow this up, with the aim of having the enclosure installed before the end of the year.

4. ADT Amplifiers:

- **Schedule:** The Dubna team leader will visit in October. We will aim for delivery before the end of the year, with fitting of all remaining parts here. The Russian team will then do the amplifier testing in B867.

5. ACS HOM Cables

- **Layout Proposal:** Daniel has re-studied the problem and made a proposal, taking into account considerations such as power absorption vs. frequency, temperature rise and RF reflection.

We expect we expect 100W of HOM power from the narrowband antenna (@500MHz) and about 500W from the wideband antenna (@800MHz).

For the narrowband there will simply be 60 m RG213 (brown cable), followed by another 20 m roll or by inexpensive 250W loads that would only dissipate 10 W, hence not requiring heat sinks and easily mounted. The proposal is to wind the first cable as a flat spiral on a simple support, so that it does not overheat. Several spirals would be mounted side by side on the wall, taking minimum surface area.

For the wideband, RG213 would overheat, even in a spiral configuration. The first spiral will therefore be 3/8 flexwell cable (40-60 m) giving 4-6 dB attenuation, followed by RG52 for the remaining 160-120 W, without termination.

Daniel will organize production of prototypes and do tests.

- **Cables on top of waveguides:** A number of the ACS HOM cables pass through waveguide holes. We are looking at means avoiding them touching the waveguides.

6. AoB

- **BI Pick-Ups.** The PU at Q8 will not be used by BDI. We already have Q7 and Q9 for the dampers. If we wish to use this as an extra PU we would be required to look after cabling, test etc.

- **TS-DEM services:** We will use their component ordering services for the Linac LLRF test project. For LHC work we still have to provide an indication of the estimated work load.

- **RF Seminar:** There will be a special RF seminar: "Matlab simulations for LHC Cavity Controller," by Janne Holma, Monday, Sept 25th, 15:30 in 354-1-001.

- **Budgets:** We must have clear justification for all expenditure on the LHC exploitation and spares budget codes.

Next Meeting: Friday **29th September** at 08:45 in the JBA room.

E. Ciapala, 24th September 2006.