LHC RF Meeting

17th June 2009

Participants: Philippe Baudrenghien, Pierre Maesen, Eric Montesinos, Erk Jensen, Trevor Linnecar, Andy Butterworth, Daniel Valuch, John Molendijk, Maria Elena Angoletta, Oliver Brunner, Luca Arnaudon

1. LHC status and planning

- **Sector 4-5:** Sector 4-5 is currently being warmed up, and the splice measurement is planned for next week. No cavity tests will be possible before mid-August.
- **Power tests:** All 16 power stations have been tested to near maximum power into a short-circuit.
- **Access during powering:** No access will be possible in the RBs when testing of adjacent sectors starts, not only sectors 3-4 and 4-5 but several sectors either side. However, UX45 should still remain accessible. The 2 doors on either side of UX45 (towards RUX45) will be reinforced. The access doors to the platform will be interlocked. The 2 elevators will be linked and access will be only available via the PZ, restricted to a reduced list of persons. An access request (ADI) will have to be done for each person each week.

2. ADT

- **Low-level measurements:** All kickers have been measured through the HOM ports. All cabling of HOMs has been checked. Now need to check each kicker for swapped electrode polarity in the vertical plane. Inversions may have been introduced on reconnection after an intervention. The stripline pickups have been measured, and all except Q10 vertical found to be OK, where the reflection was measured to be too low above 1 GHz. The measurement will be double-checked.
- **Abort gap cleaning:** Daniel has started work on the abort gap cleaning implementation in the DSPU card, which involves a system of DDSs implemented in the FPGA.

3. Sector 3-4 incident consequences on cavities

- Following the risk analysis review, a report was written detailing the consequences of the sector 3-4 incident from the RF point of view. M. Jimenez now expresses doubts as to whether everything is OK with the cavities. However, it is now far too late to remove and clean any modules. We must discuss fully with him his worries and agree on a course of action.

4. Controls and software

- **Function distribution:** Reliability checks have been done in SR4 by John. The frame loss diagnostic in the Crate Management Module had a problem which is now fixed and reliable. The top crate (Beam Control 1) has no frame losses, but the bottom crate (Beam Control 2) loses frames. Some boards in the BC2 crate do not consume functions but have repeaters, and it is suspected that the problem is in this part of the firmware. Losing a few frames per second is not a problem since the frame rate of 1ms is much faster than the variation of the functions. The ADT crates have been checked, the serial link loop is closed but some frames are not acknowledged. John is investigating this with Maarten.
- **SR4 software:** New front-end software for the Beam Control and Synchro has been deployed and tested in SR4. The FESA classes have been migrated to version 2.10 and reorganised as one class per hardware module and to use the generic class for the VTU. The LabVIEW interfaces have been adapted and tested, allowing the system to be set up correctly and the synchro loop closed.
- **Slow acquisition crates:** Still no progress with the slow acquisition digitizer software for ADT. The problem is the deployment of the National Instruments drivers and libraries on operational machines. Andy will get help from Stephane Deghaye to sort this out, as it will soon become urgent.

5. SM18

- Tests start next week with several magnets in parallel, which precludes RF tests in the next few months. It is also foreseen to do a splice test in SM18 later.
- The priority will be to condition the spare cavity before the end of the year.

6. Klystron collectors

- The SM18 klystron collector has been opened for inspection, and looks fine. One klystron will be opened in UX45 next year to double check.

A. Butterworth, 17th June 2009