LHC RF Meeting
15th October 2003

Present: Luca Arnaudon, Philippe Baudrenghien, Olivier Brunner, Andy Butterworth, Edmond Ciapala, Trevor Linnecar, Roberto Losito, Joachim Tückmantel.
Excused/Absent: Thomas Bohl, Elena Chapochnikova, Wolfgang Höfle, Eric Montesinos, Volker Rödel, Daniel Valuch.

Agenda:
Round Table - News

1) Module 3 status & planning (Roberto)
- Bake-out of Module 3 couplers is finished. Vacuum is good at 5E-11. Coupler parts and waveguide parts are being fitted in the bunker. Cool down will start on 20th October, to be followed by RF measurements on cavities and HOM couplers. Power tests will start the following week.

2) ACN cavities (Roberto)
- Cavities 7 and 8 will be measured at the factory in the first and second weeks of November. The fitting of the nose cone sleeve in cavity 8 was carried out successfully.

3) Ex LEP equipment in ISR (Olivier)
- There are a number of requests for ex-LEP RF equipment from outside institutes and a certain amount of effort is going into following these and making the resulting agreements. A full catalog of LEP RF equipment to be recuperated and outside requests has been compiled. A new request has come from INEA. The status of the request from Lignaro should be checked. **(Action: Roberto)**
- Four bare cavities stored off-site should be brought to SM18 **(Action: Roberto)**
- Racks – Material to be kept will be marked with stickers. In general, commercially procured material will be kept.
- The empty racks will be distributed by J-C Guillaume

4) Cryogenics interface. (Luca) A meeting was held on 14th October with Antonio Suraci (AT/ACR). The Cryo specialists have a preference for conditioning signals with their own electronics. Additionally the PLC for helium regulation will be close to the cavities. However the status of the required developments has to be confirmed; in any case nothing will be available before end 2005. Our requirements remain:
- Full testing in SM18 of all equipment and (as far as possible) all procedures before use in the tunnel.
- Required safety and equipment protection via the appropriate interlocks within the RF system. Some minimal duplication between Cryo and RF desirable.
- Minimum risk of perturbation to operation.

A further meeting will be held in November.

5) Software: (Andy)
- Software for module conditioning and testing is in preparation. The first phase concerns HV and klystron controls. The first phase of module testing will involve access to the present PXI based module data acquisition system.
- Our CO linkman for Front End (FE) software is Alain Gagnaire. He has requested information on the LLRF VME tuner card in order to decide on the type of driver needed. **(Action: Andy)**
- We should closely coordinate this work with similar work ongoing for the LEIR RF systems.

6) Radiation Studies: (Andy)

- BDI group are faced with risks of single event upsets in electronics, similar to our own in UX45. Andy will present our UX45 results to BDI. Testing of electronics will be coordinated by Thijs Wijnands (AB/CO)

7) Low Level RF Status: (Philippe)

- The EVM Gantt chart display shows reasonable progress with respect to planning, although a few items are lagging.
- The ACS set-point (I & Q reference) module will not be available for the first SM18 RF loop tests. In addition some form of ramp control (function generator) will be needed. Solutions based on SPS ROCS, or a commercial FG with analog outputs could be envisaged, however the preferred solution (Andy) would be the LHC function generator with analog outputs (probably existing). To be followed up with Quentin King (AB/PO) **(Action: Ed)**
- Control requirements (function generator) for the ACS couplers and the means of implementation need to be settled. **(Action Ed, Luca)**

8) Infrastructure: (Ed on behalf of Volker)

- **Cooling and ventilation:** B. Lambert and B. Pirollet have finalized the ACS power water layout in UX45. CV group are preparing the drawings and they should be ready by next week. Since IR4 is the lowest point of the tunnel special valves (one for each of the two inlets) will be installed to prevent water draining into UX45 in the event of a leak. In addition pressure limiting valves (10 bar) must be installed to protect the delicate water-cooled RF loads. There will either be a separate valve for each klystron or one for each group of four klystrons.
- **Civil Engineering:** A rough layout for UX45 has been prepared by Sylvain, including the ventilation units above the klystrons. Tunnel roof openings for the tunnel ventilation systems should be specified and requested by CV group. **(Action: CV group via Volker)**
- **Crash Barriers:** Material (rails and supports) has been obtained by C. Ruivet and will be stored in SR4

Next Meeting:
To be announced

E. Ciapala, 15th October 2003