

LHC RF Meeting 12th November 2003

Present: Luca Arnaudon, Philippe Baudrenghien, Andy Butterworth, Edmond Ciapala, Wolfgang Höfle, Eric Montesinos, Trevor Linnecar, Volker Rödel, Joachim Tückmantel, Daniel Valuch.

Excused/Absent: Olivier Brunner, Thomas Bohl, Elena Chapochnikova, Roberto Losito.

Agenda:

- 1) Module 3 status
- 2) Integration follow up from last meeting (Volker)
- 3) Report on LHC Installation Day 11th Nov (Volker)
- 4) Round table

1) Module 3 status in SM18 (From Roberto)

Nearly all the interlocks have been checked. Those remaining are being checked. Shielding blocks are in place in front of the bunker. The short circuit on the waveguides will be taken away and RF tests will start Thursday afternoon or Friday.

2) Integration follow-up from last meeting (Volker)

The complete list of items to be added into the integration, or to be corrected, was sent to the Integration team. Some minor errors have been found and corrected (e.g. cable trays and their numbering). Important items to be finalised are ADT electrical and water connections, APW arrangement and cables. Dust traps should also be included but possibly later as they are not yet defined:

ADT Connections: All water and electrical connections to the amplifiers will be on the front, as there is no room for access at the rear. There are two water inlets and two outlets per amplifier, as there are separate circuits for tetrodes and resistors. Groups of four amplifiers will be fed from single pipes running next to the main water supply and return; this to reduce the number of connections to the main pipes. There will be a single overpressure release valve for each group. Short pipes with valves and outlet flow meters will be connected to the amplifiers by flexible hoses. Connectors and flanges will be placed such that the access to the cryo line can be easily cleared.

Cables – HV, interlocks and controls- will pass down from the main cable trays on vertical trays. The 3/8 inch Flexwell cables for the drive signals will be taken to patch panels from which lower quality more flexible cables will be taken to the amplifiers.

Part of the installation, as presently drawn, would block the alignment volume for survey. SU group should be contacted to make sure this is acceptable. **(Action: Wolfgang)**

APW and Cables: (Volker) The arrangement and positioning for all the (5?) PUs per ring has to be established, with the help of Alan Burns (AB-BDI). Responsibilities for the various types has also to be established. **(Action: Thomas, Trevor)**

Dust Traps: We believe that these will be indispensable to protect the cavities. The technical justifications and proposed design should be prepared for presentation in a forthcoming LTC. **(Action: Joachim with BT group)**

Sufficient space must be kept available in the RF zone. **(Action: Volker)**

3) Report on LHC Installation Day 11th November (Volker)

The full report can be found under *presentations* on the [EST-IC web site](#)
Some points of direct interest for LHC RF:

Safety: Special safety courses will be organized for workers. PSOs will be appointed to look after all safety issues in the field. A Visite d'Inspection Commune (VIP) will be held on site, with the contractor, before any major job is started. PSOs will be maintained till the end of commissioning.

Planning and Work Packages: Detailed plannings, based on the overall general planning, are now to be done for each system, in collaboration with EST-IC. There are 54 installation

Work Packages. These are managed by M. Vitasse. WP documentation includes information such as installation procedures, space requirements, necessary drawings etc. Requirements and support (e.g. link man) for RF are in the process of being defined. **(Action: Volker)**

Transport: Normally 5 days notice will be needed for requests for transport into the tunnel. An EDH web-based procedure is used. Equipment MTF (Manufacture and Test Folder) should be in the database to facilitate organization of transport. There is a bottleneck for transport from surface to tunnel. Temporary storage of equipment on the surface is a general problem.

5) Round Table

- **ADT** (Wolfgang)

Drive Amplifiers: A video conference will be held with the drive amplifier manufacturer in the coming week to agree on technical details of the design.

Kicker Tanks: Will be brought up at the forthcoming CERN/Dubna Collaboration meeting. Meanwhile the back-up solution of doing part of the assembly at CERN is being looked at.

- **Controls** (Luca)

Worldfip interface for PO Function Generator: Specification of cable layout is being done with C. Pignard (AB-CO)

Klystron PC Interface: is being specified with AB-PO.

- **Electronics** (Daniel)

Designs are being put in EDMS. Those done by the design offices are entered by them. The prefix is EDA. Our own designs have to be done by us; the prefix is AED. Ideally the data from all measured components should be entered individually in EDMS. Urs Wehrle has rights for EDMS database entry creation.

- **Radiation in UX45**(Andy)

Luminescent screens and their positioning around IR4 will be brought up at a BDI meeting this coming Friday.

Supply and responsibility for payment of AB-CO supplied material (e.g. VME CPUs) has to be clarified. **(Action: Andy)**

- **LLRF Developments** (Philippe)

Revision 2 of the I/Q demodulator performs well, with less than 0.1 dB and 1 ° variation in the range 380 MHz to 420 MHz. The 1W pre-amplifier has been tested.

- **Power Couplers** (Eric)

Coupler 6 has a vacuum leak and will be dismantled to check vacuum joints. Bake-out is being done on coupler 5.

Next Meeting:

Thursday 20th November 2003 at 14:15 in 865-1-B03

Agenda:

- 1) Module 3 news and planning
- 2) Integration - Follow-up.
- 3) Other news & round table

E. Ciapala, 17th. November 2003.