

Status and Planning for the LHC RF systems

HRF Meeting 8th October 2002

Present:

Luca Arnaudon, Philippe Baudrenghien, Pierre Bonnal, Andy Butterworth, Olivier Brunner, Emma Bryant, Edmond Ciapala, Hans Frischholz, Wolfgang Hofle, Trevor Linnecar, Eric Montesinos, Elena Shaposhninova, Joachim Tückmantel.

Invited: Axel Daneels

1) Planning and EVM

Pierre Bonnal explained the EVM breakdown, planning and resource classification structure. Some points were clarified:

- The identity (or group) of the WU holder defines whether the WU is delivered or received.
- WUs must all have at least one resource and at least one deliverable.
- WUs related to spare parts should be considered as Operation type WUs
- We should try to get to the correct format.

Some minor changes have been introduced into the requested Excel format, e.g. email addresses of WU holders instead of name & CERN i/d. It was agreed that Pierre discuss as soon as possible with Luca and Olivier in order to define a standard Microsoft Project "Task Usage" view format that would be the most easy to convert into the requested Excel form. The other system planning and estimates could then be upgraded to this format. The notion of a standard MP view to be converted to Excel using some standard tool was supported by Axel Daneels.

2) Status of the various systems

Power Couplers (Eric)

The SA2 klystron remains out of action: see next item.

RF power (Olivier)

In SA2 the separation of the klystron vertically from its HV tank was achieved only after some difficulties. The sealing O-ring was found defective, explaining the water leak into the oil. The heater transformer was tested and found OK. The ceramic showed no signs of damage. O-ring replacement and re-assembly may not be straightforward.

The AFT load problem was discussed with Thales, who have had the same experience with a load of the same type from AFT. AFT will change the design. The "new" load will have four stages, all with normal ferrites, and will be slightly longer than the 3-stage design. This should not affect our layout. A circulator and load are scheduled for delivery in January 2003.

The next klystron will arrive in November.

A new industrial controller for klystron heater control with PLC interface, has been tested. This results in both simplification and reduced cost compared to the present system.

SC cavity modules & SM18 (Roberto)

The module with the modified second beam tube was cooled down. The temperature did not fall below 16°. This is more than satisfactory for vacuum behaviour and means that the second beam tube design is complete.

The SM18 power converter replacement has been reviewed with R. Genand. If current output is limited to 20 A the converter can be installed for around 50 kCHF, compared to the original 100 kCHF estimate and due to reduced cabling costs. It is likely that we will proceed with this. A planning will be made with PO Group. **(Action: Roberto & Olivier)**

Suitable He level gauges have now finally been found after a long market search. Six have been purchased and one tested successfully in the Cryo Lab. Four gauges will now be

installed in an SC module in SM18. As soon as tests are completed successfully the remaining gauges will be ordered.

ADT (Wolfgang)

CERN's overall fixed fractional contribution to the in-kind collaboration for damper equipment will not be easy to separate out in the EVM system.

Technical progress within the collaboration needs following up.

Installation and layout (Volker)

The UX45 quay is now completed. Coax line holes between ULs and RBs for ACN will be drilled in week 42.

The exact numbers of racks in UX45 and the resulting air and water-cooling requirements are needed by the end of the week. This has first to be finalized with the RF system specialists concerned. Responsibilities for maintenance and repair costs in our various test installations will also be discussed.

(Actions – Volker)

E. Ciapala, 14th October 2002