

Meeting on Status and Planning for the 400 MHz LHC RF system (ACS) 20th September 2002

Present:

Luca Arnaudon, Philippe Baudrenghien, Andy Butterworth, Olivier Brunner,
Edmond Ciapala, Wolfgang Hofle, Trevor Linnecar, Eric Montesinos, Volker Rodel,
Joachim Tückmantel.

1) Installation (Volker) Photographs were shown of the quay in UX45. The concrete floor is being laid and wooden shutters are in place around the top of the quay. We have been assured that the cable passages are as specified. The cryo passages are significantly bigger than the original design used for radiation estimates. We should ask the RP specialist to recalculate the levels on the cryo side of UX45 **Action – Volker.**

2) Planning and status of the various systems

Power Couplers (Eric)

The cut of a first production prototype ceramic with copper seals showed that the welding had been successful, with no cracks in the ceramic. A second ceramic will be cut in week 39. SA2 coupler high power tests have revealed an RF leak which may require special shielding. The klystron will now have to be run at higher DC voltage to allow power levels over 300 kW.

SC cavity modules (Ed – based on information from Roberto)

The modified second beam tube, mounted on one module, has been baked out for 24 hours at 250 °C. Temperature sensors, mounted in between the beam tube protection screen and the super-insulation showed a maximum reading of 62 °C. The level at which the super-insulation would start to show slight degradation is 80 °C. The module will now be cooled down. The lowest second beam tube temperature acceptable to the vacuum group is believed to be around 200 K **(to check with VA group)**

In SM18 no work could be done due to problems with the cryo plant. **Follow up needed with cryo - including valves etc. – Roberto.**

RF power (Olivier)

Clarification is needed regarding RF group liability for cooling system repair expenses in the test stands. **(Action Volker, Olivier & Trevor)**

The need for HV cable junction boxes in UX45 has to be determined. This depends on whether or not the 60 m additional distance to the klystron can be accommodated with the existing cable. If boxes are needed their locations should be defined. **(Action Olivier & Volker)**

The planning and EVM breakdown for the ACS power system is almost complete. A total of 89 work units have been defined

Low level RF system. (Philippe)

The sector test is planned for early 2006. Some fast timing equipment in SR4 will have to be operational by then. This will impose the presence of racks and infrastructure. A proposal should be made outlining the basic requirements for the sector test **(Action – Philippe)** Work has also to be done to determine the exact number of racks and rough cost of a Faraday cage.

Following the global planning deadlines not much time is available between validation of the low level and feedback system in the SM18 test chain and the start of installation in UX45. (16 months). A prototype cavity/klystron feedback system could be available in one year's time.

Controls Electronics (Luca)

The planning and breakdown are complete. Reorganisation of the interlock system (making greater use of PLCs) has brought cost of this item back down to the original estimates. While all information required for the EVM system is produced inside Microsoft Project, some manipulations had to be done to get the information into the required format proposed by P. Bonnal. It was generally agreed that it must be as easy as possible to go from one system to the other. A meeting will be arranged with P. Bonnal to discuss this and the work done so far on the RF systems (**Action – Ed**)

Software (Andy)

The basic planning was presented. Our requirements were presented to the AB-CO technical committee at its last meeting. The SM18 chain test has been taken as a deadline for implementation of basic software facilities. An important requirement is the definition of front-end infrastructure by mid 2003.

In general our specific requests e.g. middleware, logging interface, GUI toolkit etc. are in line with the planned deliverables of the CO group.

3) AoB

We have been asked to prepare our requests for fibres for a meeting to be held on 3rd. October. Generally fibres for SPS-LHC rf synchro, dump/kicker signals and RF signal monitoring are our responsibility while signals for the experiments are AB-CO.

We should aim to have the basic planning and WBS for all systems in the Planning folder by next Friday.

E. Ciapala, 24th September 2002