

Meeting minutes “MICE RF test area at CERN” - November 17th, 2010

Present:

A. Blondel, A. Bross, S. Chattopadhyay, D. Kaplan, D. Li, K. Long, E. Montesinos, D. Neuffer, V. Palladino, M. Popovic, G. Prior, C. Rogers, D. Summers, Y. Torun, M. Zisman.

Short summary of the purpose of the proposal (G. Prior):

There is the availability of a large bore magnet with field up to 3 T, located in the CERN experimental area H2, to test the MICE RF cavities in presence of magnetic field. Because it takes time, resources and efforts, we have investigated through this proposal what is needed in term or service, resources, manpower... in order to run the test and we need from MICE a decision on whether it is worth having this test being performed at CERN or not.

MICE position (A. Blondel slides):

MICE schedule will be revised in Dec. 2010.

Pro/cons of using the MTA prototype cavity versus the 10 MICE cavities: needs to break the shielding wall if we want to access the MTA cavity- MICE cavities need a vacuum vessel (funding for one vessel has been found through MAP) – higher risk to use cavities from MICE than the MTA one if breaking it.

MICE answer in May from the MEC meeting was encouraging but with some reserve such as there is the need of “enthusiasm and a champion at CERN”.

300 kW pre-drive amplifier: there is a missing 300 kW amplifier, but it is budgeted in the U.K budget for after phase V. The one that Eric propose to build is made of SPS parts that cannot be shipped away from CERN. Even if they agreed on using those parts to build that amplifier with the risk that if they need them, they'll need to take back the amplifier, this amplifier cannot leave CERN.

Question: would it be possible to build one such amplifier and have it assembled at CERN if MICE pay for the missing parts ? In principle yes, the cost will have to be estimated.

Possibility to do this test at the MTA:

Was not implemented in the MTA 2011 schedule but Alan confirms that this can be done but would disrupt other experiments plans. Not clear whether there is a gain (or a loss) by running the test at MTA or CERN in term of the magnetic field configuration itself alone, the opinions diverge on that and both are far anyway from the MICE field configuration.

H2 area and magnet possible use constraints:

- considering 2 weeks per cavity we put a request for the magnet use of 20 weeks, which to the magnet experts seems to be quite a lot, given the fact that it never run so long and many small intervention works for

- maintenance of the magnet has to be done. They think that a 3 months operation is still feasible,
- if as foreseen all the accelerators are shutdown in 2012, the magnet experts will be very busy as they are involved with the CMS cryo systems and detector which will have highest priority, therefore we may not have experts being able to help operate the magnet in 2012.

Question: can we run the test in two batches. Say 4/5 cavities in 2011 and the rest in 2013. A priori no big constraint excepted that if we use the 300 kW amplifier built with the SPS spare, it cannot be loaned for more that 2 years and we may not have a 300 kW amplifier in 2013. Also Swapan commented that given the present situation at CERN in term of funding and pressure on LHC work if things are shifted after 2012 they may be shifted for ever and it is better to use a small window in 2011-2012 if possible.

Overall manpower/resources:

MICE is worrying on where the enthusiastic team at CERN is, and who they are. Enthusiasm there probably is but real physical people not for the time being on the RF side despite Roland's attempt to look for someone. We don't know if submitting such a proposal to the CERN management would help change gear and allow people from the RF group to join or not.

Magnet expert can provide support in case something happens with the magnet during working hours but we would have to be trained and do the ramp up/down of the magnet current.

It seems that in term of services at CERN (magnet, shielding, interlock, electricity...) this can be sorted out. In term of someone ready at CERN to baby-sit the cavities and RF amplifiers nobody was identified. Can be put in the proposal in an explicit way as condition for MICE to run the experiment at CERN. Alan is recalling that on the shielding and interlock work we have been a little too optimistic and this is a considerable amount of work that was delayed and delayed at FNAL because this was not of highest priority, we have to make sure at CERN that we don't follow the same path.

Gersende is recalling that if we really want to run this test in 2011 we have to make our decision very soon as it is now that CERN is discussing next year plans in term of experimental zone use, budget...

Alain is proposing that we meet in two weeks (will set up a doodle for that) from now for a more technical discussion. Distribution list will be reduced accordingly. There is also a MICE MEC meeting at the end of the week where this will be a discussion point.

In the meantime:

- Alain, Gersende to discuss in more details at CERN the situation and possibility to have someone from the RF group.
- the test plan/campaign has to be defined in more details (magnetic field configuration and field gradient ? QA only campaign ? Future test on 1 spare ?)

- identify what 300 KW amplifier we would like to have (300 kW borrowed from MICE ? 300 kW with SPS spare parts assembled at CERN ? 300 kW with new parts assembled at CERN ?