

Minutes of the MICE Collaboration Board held on 28th October 2004 at RAL

Present

CB Chair – D Kaplan	INFN Milano – M. Bonesini
Spokesman – A. Blondel	INFN Napoli – V. Palladino
Deputy Spokesman – M. Zisman	INFN Trieste – G. Giannini
BNL – S. Kahn	KEK – S. Ishimoto
Brunel – P. Kyberd	LBNL – D. Li
CERN – H. Haseroth	Liverpool – R. Gamet
FNAL – A. Bross	Louvain – G. Gregoire
Geneva – A. Blondel	Northern Illinois – M.A. Cummings
Illinois Inst. Tech. – Y. Torun	Osaka – M. Yoshida
Imperial College London – K. Long	Oxford – J. Cobb
INFN Bari – E. Radicioni	RAL ISIS – P. Drumm
INFN Frascati – C. Vaccarezia	Sheffield – C. Booth
INFN Genova – S. Farinon	UC Riverside – A. Klier

1) Approval of Minutes of 2nd August 2004

The minutes of the previous meeting were approved.

2) Spokesman's Remarks (Alain Blondel)

Alain expressed the collaboration's thanks to Paul for all his work on the TRD; some of the changes will have a real positive impact on the design of a Neutrino Factory. The major progress made, displayed during presentations to this meeting, was commended. Some worries remain – progress is rather uneven, with some areas held up by funding problems. It is hoped that the funding situation will begin to resolve itself this winter. The way the collaboration is working as a team is very satisfactory. Costs and funding were reviewed. The material cost of MICE stage VI, without contingency, is £11M, consistent with the value in the proposal, while the overall project cost is \geq £25M. (For MICE stage V, the material cost is £9.5M.) The savings anticipated in the proposal (RF power supplies, PSI solenoid, Sci-Fi multiplexing etc.) have been realised, to the tune of €8M, and more are possible. Funding for more than 50% of the project cost has so far been identified.

The funding situation was reviewed as follows.

UK: £7.5M is earmarked by the Office of Science and Technology, £0.5M/yr for 5 years from CCLRC and £1.2M over 3 years in PPARC rolling grants. This situation is good, but unlocking the OST money requires matching funds and contributions from abroad. We need the next stage of the Gateway to release funding for beam-line, development of AFC module and tracker.

Japan: A letter has been sent from Y. Kuno to K. Peach. Contributions will be made to liq. H₂ absorber, SciFi (and possibly magnets), via Japan-US collaboration (~€200k/yr) & Osaka University. A further ¥50M was applied for – not granted in 2004, but will also try for 2005.

US: NSF funding request of \$23M was reviewed; despite excellent reports, this amount was not available. A smaller (~10%) request may be considered. This has led to the concept of an initial “phase 0”, with request for spectrometer solenoid and contribution to tracker. In-kind contributions are being made via MuCOOL R&D, simulation etc.

Switzerland: MICE is on the particle physics road-map. The PSI solenoid is ready to be dispatched. Geneva University provides support via 1 post-doc and 1 student, plus travel and CHF80k investment per year. RF is available at CERN, but money is required for refurbishment.

Italy: An EoI to INFN has been submitted and is being considered by the management. *(Note added: The proponents were encouraged on 15th December to submit a full proposal.)*

Belgium: Request for €50k in 2005 was refused. There is effort available at Louvain for design of the Cherenkov, but not for materials.

Holland: Funding very difficult. They will provide B-field sensors, and hope to fund a student.

E.U.: The expected call for Design Studies in 2005 has been cancelled. We will try to submit a bid to NEST.

3) Technical Coordinator's Report (Paul Drumm)

A number of technical issues were raised. Formal approval was given for changes to the original technical reference document in respect of the shield plate and connections between modules. The Design & Safety Review was described, with attention given to changes in the AFC module. The Review will include the tracker solenoid, tracker and other detectors, and will involve RAL engineers. The TRD is nearly complete and will become the baseline design, superseding that in the proposal. Future changes will be administered via change control. Finally a tentative schedule was presented.

4) MICE UK reviews (Ken Long)

A RAL Cost and Schedule Review will be held on 12th November, chaired by Dr M. Johnson, head of EID at RAL. PPARC Science Committee requires a paper and presentation on 17th November, which must explain the proposed "Phase 0". This will inform the PPARC Council meeting in the first week of December, which will report to the Gateway Review on 20th December, for Gateway 2/3.

5) Issues from Plenary Meeting requiring decisions

a) Tracker Technology Choice (Ghislain Gregoire)

Ratification of the SciFi Tracker as the baseline technology choice was not required, as this decision had already been taken. Validation of SciFi performance was "95% complete" – a tremendous amount of work had been done, and it was anticipated that the final remaining uncertainties (momentum resolution at equilibrium emittance, understanding of bias in transverse emittance, ...) could be resolved in about 4 weeks, leading to full endorsement of the SciFi at the February Collaboration Meeting.

Much progress had also been made on the TPG. This is a backup solution, and probably near to becoming a potential upgrade. The R&D activity should be brought to a full conclusion.

b) Cryocoolers (Paul Drumm)

MICE magnets and cryocoolers are conventional technology! There is no technical reason to believe cryocoolers will not work, though cool-down times will be long. For hydrogen, pre cool-down with liquid nitrogen and helium from dewars will speed up the process. A heater may be needed to prevent freezing of the hydrogen. Cryocoolers are also suitable for liquid helium, with the initial fill being provided from a dewar. **The proposal to accept cryocoolers for H and He, and to embark on a programme of R&D to understand the details, was accepted.**

e) MICE Phase 0 (Dan Kaplan)

The NSF funding requests had led to a compromise, aiming for an initial project for 10% of the hoped-for US money. Something worthwhile must be achieved with about \$2.5M, to help unlock the larger amount of UK money. The plan was to build a first solenoid with instrumentation to enable stages 2 and 2.5. (If INFN money became available for the solenoid, instead the US could contribute to the RF etc.). It is important to avoid delays which could prevent installation of the beamline in the 2006 shutdown. A discussion of physics objectives followed. It is hoped that with a solid absorber, a first observation of cooling could be achieved. **The proposal was endorsed**, with performance details still to be evaluated.

6) Meeting with Ken Peach and John Wood (RAL)

Alain presented a summary of our technical and financial progress, and asked what the Collaboration needed to assemble for the Gateway Reviews and if any difficulties were foreseen with completion of the muon beamline in 2006.

Ken Peach responded by saying that the situation was now much more positive than previously, and a two-phase process, separating beam and detector, was in his view favourable. The provisional Gateway2/3 date is 20th December, after which we might be able to spend money. A complete project plan is required, with a statement from those concerned that the initial project is worthwhile in its own right. He raised the possibility that PPARC agreement on this timescale might be difficult, and that it might be necessary to aim for Gateway approval subject to later PPARC approval (at the February Council meeting). *(Note added: release of funds will indeed have to wait for endorsement by PPARC Council in February.)*

John Wood said he had little to add, but warned us that there could be a UK Parliamentary election in May, in which case the Civil Service might be reluctant to make major decisions from March. We should get ahead of this!

7) Next Collaboration Meeting at LBNL 10th-12th February (Mike Zisman)

The next meeting is planned from Thursday 10th to Saturday 12th February, in Berkeley, immediately preceding the US Muon Collaboration Meetings. At present, 2½ days are scheduled, but this could be extended to 3 days. The day before the meeting, 9th February, will be available for parallel meetings if requested. The Collaboration Board and Dinner are provisionally set for the Friday, though the possibility of moving the Dinner to the Saturday evening was raised.

8) Video Conference Arrangements

It was suggested that future meetings should be phone meetings rather than video conferences. The possibility of using NetMeeting or VRVS was strongly encouraged by some members. Yagmur will be asked to look into these options.

9) Future Collaboration Meetings

This item was postponed to the plenary collaboration meeting.