

MICE Common Fund: report on financial year 2015/16

1 Income and expenditure

The 2015/16 census includes 66 members of the MICE collaboration that are eligible to pay the Common Fund. The list of collaborators eligible was ratified at the Collaboration Board meeting that took place on the 30th October 2015 (see Appendix A). After the census was approved, all institutions were invoiced (except for Serbia). In-kind contributions totalling £12k from Italy, and £15k from NSF-funded US institutes (Iowa, Mississippi, New Hampshire and UC Riverside) have been agreed and delivered. Italy has provided HV cards required for the TOF, KL and EMR and the NSF-funded institutes provided vacuum equipment for the experiment. The University of Sofia (Bulgaria) will also provide an in-kind contribution for £9k but the precise nature of this in-kind contribution is yet to be determined. This should be pursued by the Collaboration Board chair and the Sofia group leader. All cash contributions have been received except for the USA DoE contribution (£45k) and the Serbian contribution (£6k). The expenditure on the Common Fund in the UK financial year 2015/16 as of February 2016 is £49.4k.

Table 1 contains a summary of the income and expenditure for financial years 2008/09 to 2015/16. The classes of allowable expenditure against the Common Fund are presented in Appendix B and the budgets set against each class of expenditure agreed for financial years 2010/11 to 2015/16 are shown in Appendix C.

Table 1: Summary of income and expenditure for MICE Common Fund for financial years 2008/09 to 2015/16.

MICE Common Fund summary sheet										
Financial year		Income							Expenditure	
		Cash	Levy		Contribution (£k)			Collection Kind Value	Total	Category
Kind	Total		Invoiced	Received	Total					
2015/16	66 eligible collaborators Total	162	36	198	156	111	36	147	Total expenditure (February 2016)	49.4
2014/15	63 eligible collaborators Total	153	36	189	153	153	27	180	Total expenditure	87.6
2013/14	62 eligible collaborators Total	144	42	186	144	144	30	174	Total expenditure	94.4
2012/13	61 eligible collaborators Total	156	27	183	153	147		147	Total expenditure	100.68
2011/12	60 eligible collaborators Total	144	36	180	138	153	21	174	Total expenditure	152.53
2010/11	60 eligible collaborators Total	147	33	180	150	147	30	177	Total expenditure	196.50
2009/10	57 eligible collaborators Total	150	21	171	150	138	12	150	Total expenditure	149.27
2008/09	64 eligible collaborators Total	192		192	192	159	3	162	Total expenditure	471.80

In the assumptions document [1] approved by the MICE Collaboration Board on 28th October 2014, a clarification was made between cryogenics used for commissioning and for operations, for the purpose of Common Fund expenditure. In that document, it explicitly says that:

1. Commissioning and training costs for liquid Helium will be borne by each super conducting magnet group;
2. Liquid Helium that will be used for the training and commissioning of the Spectrometer Solenoid and FC in the MICE Hall will be purchased through the MICE-UK project budget using the Common Fund as appropriate;
 - Invoicing to the US at the end of the commissioning / training period;

- Through the purchase of equipment or services of the same value;
3. Liquid helium that will be used for the commissioning and cooling of the focus coil magnets will be borne by the MICE-UK project;
 4. LHe usage during operations where a top-up of cryogenics is required that will not be achieved by gas condensation will be borne by the Common Fund. Liquid helium will be purchased by the MICE-UK using the Common Fund as appropriate;
 5. Each superconducting magnet group will provide expert knowledge and operators for all operations requiring use of cryogenics. Cover will be provided through all commissioning and operational periods.

There has been a requested change by the US team to include cryogen costs during commissioning into the Common Fund. This would increase the allowable charges to the Common Fund by a large amount. Just for example, there was an expenditure of £222k in cryogen charges for superconducting magnet commissioning in 2015-16. If these charges were added to the Common Fund, it would result in a total expenditure of £272k, compared to an expected cash amount of £162k, which is a shortfall of £110k. To cover a similar level of expenditure in the 2016-17 Common Fund budget, the levy would have to be raised from £3K per PhD author to £5k.

Table 2: Summary of cryogenic costs for the MICE Project during magnet commissioning during 2015/16 and expected total Common Fund expenditure if these were included.

<i>To STAK00051 from STAK00061</i>	£
Gasses and Liquid	179196
Control Room Equipment	20082
DS Computer	8605
Helium Compressor Service Contract	14400
Total	222284
Current spend on Common Fund	49360
Total Proposed spend	271644

A MICE collaborators eligible for the 2015/16 Common Fund levy

2015/16 levy of MICE Common Fund			
Contributors to the MICE Common Fund			Census date: 01Apr15
Country	Institute	Contributor	Version 1
Bulgaria	Sofia	Bogomilov, M Tsenov, R Vankova, G	28-Oct-15
China	IHEP,CAS Sichuan	J.Tang Z.Li	
Italy	Milano Napoli Pavia Roma III	Bonesini, M Palladino, V De Bari, A Tortora, L	
Japan	KEK Kyoto Osaka	.	
Netherlands	NIKHEF	Filthaut, F	
Serbia	Belgrade	Jokovic,D Maletic,D	
Switzerland	CERN Geneva	Vretenar, M Blondel, A Karadzhev, Y Noah, E	
UK	Brunel Cockcroft/Lancaster DL Glasgow Imperial Liverpool Oxford RAL Sheffield Strathclyde Warwick	Kyberd, P Nebrensky, H Soler, P Bayes, R Alsari, S Blackmore, V Colling, D Dobbs, A Dorman, P Lagrange, JB Long, K Martyniak, J Pasternak, J Uchida, M.A. Gamet, R Cobb, J Lau, W Bradshaw,T Edgecock,R Ricciardi, S Rogers, C Booth, C Hodgson, P Overton,E Robinson,M Ronald, K Whyte, C Young, A Boyd, S Franchini, P	
USA	<u>DOE labs:</u> BNL JLab LBNL Fermilab IIT Mississippi <u>NSF labs and universities</u> Iowa Mississippi New Hampshire University of Chicago UC Riverside	Witte, H Li,D Luo, T Bowring, D Bross, A Liu,A Palmer,M Popovic, M Hanlet, P Kaplan,D Rajaram, D Snopok, P Torun, Y Cremaldi, L Summers, D Onel, Y Hart, T Sanders, D Bravar, U Hanson, G	
Total			66

B Classes of expenditure allowed against the Common Fund

The list of the items to be covered by the Common Fund provided for in the MICE Common Fund agreement includes:

1. Utilities and infrastructure services to operate MICE (e.g. power, water, gases and cryogenes);
2. Technical/engineering support for repair, maintenance of MICE infrastructure and experiment;
3. MICE Muon Beam operation and maintenance;
4. Office facilities (e.g. desks, pc/internet access, phones, photocopiers etc);
5. Access to RAL services (e.g. purchasing and financial, HSE);
6. Miscellaneous cabling (cable trays, break out panels, etc., ethernet connections, and wireless transmitters) for electronics, DAQ and communication;
7. Data-storage media and facilities for data taking;
8. User support for MICE collaborators and visitors, including local transport, and housing; and
9. (On-site) office supplies, including computing supplies.

The ISIS operation and beam delivery are a contribution from the host laboratory. The cost of electricity, buildings and their upkeep is a host-laboratory contribution and does not form a call on the Common Fund.

C Classification of allowed expenditure on the MICE Common Fund

Classification of expenditure by Common Fund code		Estimate (£k)
Budget line	Example expenditure	
MICE - USER SUPPORT COSTS	Secretarial support* Transport (taxis etc.) beyond MICE collaborator travel MICE van Collaboration meeting expenses	40.00 0.50 1.00 2.00
MICE UTILITIES, INFRASTRUCTURE SERVICES	Experiment consumables Gas for equipment (for example Cherenkov, target, hydrogen system, tracker, etc.) Cryogenic fluids	10.00
MICE TECHNICAL SUPPORT	Technical support for networking and network interventions Technical support for installation of equipment Contribution to cost of technical and rigging effort in the MICE Hall	2.00 30.00
MICE BEAM LINE OPERATION AND MAINTENANCE	Contribution to cost of maintenance of MICE Muon Beam and of equipment in MICE Hall	15.00
MICE OFFICE FACILITIES	Office facilities	2.00
MICE ELECTRONICS, DAQ CONSUMABLES	MLCR consumables Replacement and maintenance of electronics and equipment in MLCR and MICE Hall* Contribution to electronic integration effort in MLCR and MICE Hall A spare NIM and CAMAC crate: recent failure to BLM crate highlights need	2.00 10.00 10.00 15.00
TOTAL		139.50

* Principally R.hayes. Other secretarial support charges as appropriate.

+ MICE Online Group will categorise the electronics in the MLCR and MICE Hall and an appropriate policy will be proposed by the EB to the CB

References

- [1] MICE International Project Office, "MICE Project Assumptions Document." <http://micewww.pp.rl.ac.uk/attachments/2776/2014-10-27-Assumptions-doc.pdf>, 2014.