

## MICE Common Fund: report on financial years 2015/16 and 2016/17

### 1 Income and expenditure

The 2016/17 census included 65 members for a total budget of £195k. A total of £156k have been received in cash and £36k in kind for a total of £192k. The expenditure on the Common Fund in the UK financial year 2016/17 was £34.1k up to the end of January 2017. There is expected to be an increase of expenditure in February 2017 due to two superconducting magnet quenches, requiring the acquisition of cryogenic liquids.

The 2016/17 census includes 65 members of the MICE collaboration that are eligible to pay the Common Fund. The list of collaborators eligible to pay the Common Fund is found in appendix A. This census was first approved at the MICE Collaboration Board (CB) on 29th July 2016 and endorsed at the 9th October 2016 CB meeting.

In-kind contributions totalling £12k from Italy, £9k from NSF-funded US institutes (Iowa, Mississippi, New Hampshire and UC Riverside), £6k from Serbia and £9k from Bulgaria have been agreed and are being delivered. Italy has provided HV cards required for the TOF, KL and EMR and the NSF-funded institutes provided vacuum equipment for the experiment. Serbia has been providing in-kind contributions in the form of Monte Carlo production and Data Manager tasks. The in-kind contribution from Bulgaria includes extra shift allocations to cover operations. However, the latter is at risk due to reduced travel budgets for the Sofia group, since the EC-funded EUCARD2 project that provided transnational access to the MICE Cooling Facility (and provided travel for Italian, Swiss, Bulgarian and Serbian collaborators) finishes at the end of March 2017.

Table 1 contains a summary of the income and expenditure for financial years 2008/09 to 2016/17. The classes of allowable expenditure against the Common Fund are presented in Appendix B.

Table 1: Summary of income and expenditure for MICE Common Fund for financial years 2008/09 to 2016/17.

MICE Common Fund summary sheet											
Financial year		Income							Expenditure		
		Levy			Contribution (€k)				Category	€k	Cumulative €k
		Cash	Kind	Total	Invoiced	Cash Received	Kind Value	Total			
2016/17	65 eligible collaborators <b>Total</b>	159	36	195	159	156	36	192	Total expenditure (February 2017)	34.14	-250.52
2015/16	66 eligible collaborators <b>Total</b>	162	36	198	156	111	36	147	Total expenditure	271.6	-372.38
2014/15	63 eligible collaborators <b>Total</b>	153	36	189	153	153	27	180	Total expenditure	87.6	-211.78
2013/14	62 eligible collaborators <b>Total</b>	144	42	186	144	144	30	174	Total expenditure	94.4	-277.18
2012/13	61 eligible collaborators <b>Total</b>	156	27	183	153	147		147	Total expenditure	100.68	-326.78
2011/12	60 eligible collaborators <b>Total</b>	144	36	180	138	153	21	174	Total expenditure	152.53	-373.10
2010/11	60 eligible collaborators <b>Total</b>	147	33	180	150	147	30	177	Total expenditure	196.50	-373.57
2009/10	57 eligible collaborators <b>Total</b>	150	21	171	150	138	12	150	Total expenditure	149.27	-324.07
2008/09	64 eligible collaborators <b>Total</b>	192		192	192	159	3	162	Total expenditure	471.80	-312.80

The Common Fund agreement (see Appendix B) identifies cryogenics as an allowed expense on the Common Fund during detector operations. At the last Funding Agency Committee Common Fund report, we informed the Committee of a one-off change to the Common Fund expenditure, to include also all gas and cryogenic liquid expenditure during the commissioning of the superconducting magnets (most notably, the spectrometer solenoids). This extra gas and liquid expenditure was £179.2k during the 2015-16 financial year.

The strategy of keeping the magnets cold at all time has paid off and there has been very little cryogenic expenditure during 2015-16. This is why the CF costs for 2015-16 have been kept to £34k up to the end of January 2017. However, while commissioning the flip-mode Step IV channel in preparation for the February-March 2017 run, two magnet quenches occurred in February 2017, so there will be an increase in expenditure in liquid helium at the end of the financial year. We do not have the final costs yet, but should be of order £10k. As a consequence, we continue to carry forward a net overspend in the Common Fund budget from 2008-09 to 2016-17 of at least £250k, dominated by the liquid helium costs of 2015-16.

## A MICE collaborators eligible for the 2016/17 Common Fund levy

2016/17 levy of MICE Common Fund			
Contributors to the MICE Common Fund			Census date: 01Apr16
Country	Institute	Contributor	Version 1
Bulgaria	Sofia	Bogomilov, M Tsenov, R Vankova, G	3
China	IHEP,CAS Sichuan	J.Tang Z.Li	2
Italy	Milano Napoli Pavia Roma III	Bonesini, M Palladino, V De Bari, A Orestano, D	4
Netherlands	NIKHEF	Filthaut, F	1
Serbia	Belgrade	Jokovic,D Maletic,D	2
Switzerland	CERN Geneva	Vretenar, M Blondel, A Karadzhev, Y	1 2
UK	Brunel	Kyberd, P Nebrensky, H	2
	DL Glasgow	Soler, P Bayes, R	2
	Imperial	Alsari, S Blackmore, V Colling, D Dobbs, A Dorman, P Kurup, A Lagrange, JB Long, K Martyniak, J Pasternak, J Uchida, M.A.	11
	Liverpool	Gamet, R	1
	Oxford	Cobb, J Lau, W	2
	RAL	Bradshaw,T Ricciardi, S Rogers, C	3
	Sheffield	Booth, C Hodgson, P Overton,E Wilbur, S	4
	Strathclyde	Ronald, K Whyte, C Young, A	3
	Warwick	Boyd, S Franchini, P	2
USA	<u>DOE labs:</u> BNL	Palmer, M Witte, H	2
	JLab LBNL	Li,D Luo, T	2
	Fermilab	Bowring, D Bross, A Liu, A Neuffer, D Popovic, M Stratakis,D	6
	IIT	Hanlet, P Kaplan,D Rajaram, D Snopok, P Torun, Y	5
	Mississippi	Cremaldi, L Summers, D	2
	<u>NSF labs and universities</u> Iowa Mississippi New Hampshire University of Chicago U.C. Riverside	Onel, Y Sanders, D  Hanson, G.	1 1  1
<b>Total</b>			<b>65</b>

Income (£k)

195

## **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.