

MEMORANDUM

Date: 15 October 2009

To : Members of the LHCb RRB
 From : C. D'Ambrosio
 Subject : Category A M&O status for 2009 and estimate for 2010

Situation for 2009

About 91% of the expected contributions for M&O in 2009 had been received by the end of August. That is a total of 2.28 MSFr. Together with the carryover of funds from 2008, these contributions have ensured that there has been no cash flow problem. The spending until end of August is given in Table 1.

Item List	Spent	Budget
Detector related cost	426.2	914.0
Secretariat	105.3	192.0
Communications	5.0	12.0
Core computing	50.2	100.0
Online computing	407.2	850.0
Test Beam and calibration facilities	0.0	20.0
Laboratory operation	0.0	60.0
General services	199.2	360.0
Power		600.0

Table 1.
Status of Category A M&O at end of August in kSFr.

Based on extrapolations of the spending profile until end of August and the experience from previous years, we expect that the budget forecast for this year is correct for all the items apart from Online computing and Power estimates.

LHCb under spent in chapter Online Computing in 2007 and 2008 mainly in manpower and for 2008 also in the sub line Computers. The foreseen manpower is now in place. However, unexpected changes in the LHC schedule have abruptly changed our purchase, and thereby also our need for replacement, of the online computing farm. It should be noted that the time lag for hiring new staff is very long, whereas new computing hardware is delivered fast.

It has been the stated policy of LHCb to acquire the needed computing power on a "just-in-time" basis. This not only to have a top performing computing farm at the time required, but also to save money and to keep the flexibility to follow changing industrial computing standards.

The total funds available from Common Fund, non Common Fund and Core money for DAQ CPU Farm and ECS/TFC Computing infrastructure was 5.1 M and 2.3 M SFr as of RRB 2005. This has not changed although the time of CPU purchase has moved with new LHC schedules. At the time, a rational replacement assessment performed by our Online Project, based on the LHC schedule and anticipated failure rates, was estimated to be in the range of 300 kSFr starting in 2008. RRB, April 2009, took note of the under spending and agreed that the funds should be kept in M&O Cat.A for future years. In view of the present uncertainties, our best guesstimate for availability of M&O Cat.A funds for online computing is reflected in the forecast for 2010 to 2013.

Therefore, as discussed and agreed with the Scrutiny Group, we ask for your approval to keep an estimated under spending of about 200 kSFr from M&O Cat.A_2009 in Online Computing as a buffer for future over spending on this line.

Technically this sum can be put on a special account or reported on successive years as under-spending in M&O Cat.A Online. However, we ask that this under-spending be not considered in the 10% limit for M&O Cat.A reimbursement.

A compensation for power is proposed for 2010.

Situation for 2010

The budget for 2010, as discussed with the Scrutiny Group, is given in Table 2. The sharing between the different Funding Authorities, Table 3, is modified due to changes in the number of PhD equivalent members at the different institutes.

Item List	Budget 2010
Detector related cost	920
Secretariat	192
Communications	50
Core computing	150
Online computing	750
Test Beam and calibration facilities	30
Laboratory operation	60
General services	360
Power	600.0
VELO Spare (500 kSFr over 5 years)	100.0

Table 2.
Proposed M&O Cat.A budget for 2010 in kSFr.

2010	PhD eq. total/ funding auth.	%	M&O A	VELO	Power	Total
			kSFr	kSFr	kSFr	
			2,512	100	600	
			SFr	SFr	SFr	SFr
BRAZIL	11	3.1	78,724	3,134	18,803	100,661
FRANCE	42	12.0	300,581	11,966	0	312,547
BMBF GERMANY	16	4.6	114,507	4,558	0	119,066
MPI, MPG, GERMANY	6	1.7	42,940	1,709	0	44,650
IRELAND	2	0.6	14,313	570	3,419	18,302
INFN ITALY	47	13.4	336,365	13,390	0	349,755
NETHERLANDS	16	4.6	114,507	4,558	0	119,066
P. R. CHINA	3	0.9	21,470	855	5,128	27,453
POLAND	10	2.8	71,567	2,849	0	74,416
HHNIPNE ROMANIA	5	1.4	35,783	1,425	8,547	45,755
RUSSIA	32	9.1	229,014	9,117	23,177	261,308
SPAIN	16	4.6	114,507	4,558	0	119,066
SWITZERLAND	21	6.0	150,291	5,983	0	156,274
UKRAINE	3	0.9	21,470	855	5,128	27,453
UK	65	18.5	465,185	18,519	0	483,704
USA	9	2.6	64,410	2,564	14,569	81,544
CERN	47	13.4	336,365	13,390	0	349,755
TOTAL	351	100.0	2,512,000	100,000	78,772	2,690,772

Table 3.

Sharing of the proposed Category A M&O budget, power and VELO Spare for 2010.

Changes from 2009

As already pointed out main changes reflect an updated spending profile in the Online Computing due to the unexpected stoppage of LHC and to our policy of acquiring computing power on “just-in-time” basis. In 2010, this line is modified from 850 kSfr to 750 kSfr and will linearly grow during the coming years to meet the initial value only in 2014.

Other changes in the budget forecast are minor apart from a readjustment of the power cost from 970 kSfr to 600 kSfr in 2010 along the line of LHCb policy to readjust this line for year (N+1) if there was no data taking in year (N). EVO cost has also been added and, in agreement with SG, the core computing has been risen to 150 kSfr/y starting from 2010.

2008 under spending

We propose that the under spending from 2008, 106 kSfr, is kept as a buffer in M&O A. This is in agreement with CERN-RRB-2006-026.

Category B M&O

Category B M&O budget for 2009 is given in Table 4. Only minor adjustments are anticipated for 2010. The total is 1266 kSfr, roughly half of the M&O Cat.A total.

CALO	345
HLT	0
Level_0	60
Muons	229
On Line	14
Outer Tracker	120
RICH	292
Silicon Tracker	93
VELO	113

Table 4.
Category B M&O budget for 2009 in kSFr.