

## **RRB Apr. 13<sup>th</sup> 2011**

- Situation of Common Funds
- Situation of Core Funds
  
- Projected M&O Cat. A budgets for the coming years
- Total M&O Cat. A budget and detailed expenditure in 2010
- Approved budget for 2011 and projected for 2012
- Conclusions

## Common Funds situation at February 2010

COMMON FUNDS expenditure situation at February 2011				
All in kCHF				
Detector	Outflow	Inflow	Committed	Totals
OTR	10.5	0	0	10.5
CALO	0	0	0	0
DAQ	35.4	0	3.5	38.9
INFRASTRUCTURE	117.5	0	8.1	125.6
MUON	0	0	0	0
RICH	0	0	0	0
TOTAL	163.4	0	11.6	175.0
RICH HPDs	92.4	-84.9	0	7.5
VELO NON CORE	178.8	-256.2	0	-77.4
	434.6	-341.1	11.6	105.1

A 417 kCHF is still uncommitted at present (February 2011).

In view of the long shutdown in 2013 – 14 and of the foreseeable important interventions on sub-detectors and on general safety and infrastructure, we have asked (see CERN-RRB-2010-040 and -115) for an extension of the Common Funds lifetime to year 2013.

## Core

Most of the Core spending came to an end in 2006. Purchasing for DAQ and data storage continued throughout 2010 with the 3<sup>rd</sup> “tranche” of the FARM expenditure. It has been funded by Core and non-Core resources.

## M&O A forecast (without VELO and Power) in kCHF:

	Year					
	2009	2010	2011	2012	2013	2014
Detector related costs	914	920	920	940	940	920
Secretariat	192	192	185	185	185	185
Communications	12	50	30	12	12	12
Core Computing	100	150	150	150	150	150
Online Computing	850	750	810	880	880	880
Test beams, calibration facilities	20	30	30	30	40	40
Laboratory operations	60	60	60	60	60	60
General services	360	360	360	360	360	360
	<b>2508</b>	<b>2512</b>	<b>2545</b>	<b>2617</b>	<b>2627</b>	<b>2607</b>

Communication, takes in account EVO ( and whatever comes next) and its reduced cost.

Online Computing maintenance part has been re-formulated to take in account the decision to **complete the farm for the end of 2010**, due to the 2011-12 LHC running conditions.

## Budget 2010 main lines (without VELO and Power)

2010	Budget	Used	Difference
detector related	920	816	104
secretariat	192	169	23
communication	50	41	9
core comp	150	195	-45
on line (see text)	750	910	-160
test beams	30	12	18
laboratory	60	41	19
general services	360	309	51
Totals	2512	2493	19

One full year of operations has not changed much our expenditure, as foreseen. A certain stress is visible in the Core Computing, due to the 2010 excellent, but demanding, LHCb activity.

## Budget 2010 main lines (without VELO and Power)

Due to the foreseen LHC activity and the **demanding LHCb running conditions for 2011-12 and beyond**, we anticipated the completion of the Farm for 2010. However, more consolidation has been deemed necessary for the general network infrastructure and the farm.

**Two generous extra-contributions have been given from Switzerland and CERN:**

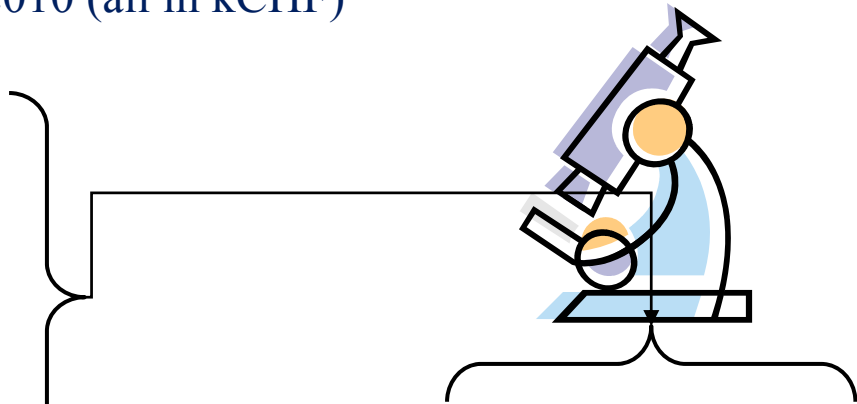
The **first** to reinforce even more our farm and **the second** to strengthens our DAQ network Infrastructure. Both belong to DAQ-NONCORE contributions and are of the order of 300 kCHF each.

The urgency to provide LHCb with extra network power asked for action already end of 2010, which would also allow to effectively use the Christmas stop. Therefore, M&O Cat.A has loaned 256 kCHF towards this acquisition, and it has already been refunded.

2010	Budget	Used	Difference
ONLINE	750	910 (654)	-160 (96)

## LHCb M&O Category A at Book Closing end 2010 (all in kCHF)

2010	Budget	Used	Difference
detector related	920	816	104
secretariat	192	169	23
communication	50	41	9
core comp	150	195	-45
on line (see text)	750	910	-160
test beams	30	12	18
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Totals	2512	2493	19



Detector related costs	
Magnet	44
Gas	339
Cooling	95
Safety	75
Tech. support	143
Beam pipe	43
Secretariat	
Secretarial aid	153
Communication	
EVO	39
On-line computing	
System Manag.	405
Hardware	505
Test beams, calibration	
Operation	12
Laboratory operations	
Operation	41
General services	
Cool., vent. etc	122
Transport	151
Survey	0
	7

Rather well balanced budget. Due to the winter stop, a few orders hit towards the end of the year and are being charged to year 2011.

Therefore, we propose to keep the surplus in 2010 as buffer.

We will report back to RRB in October.

## Approved 2011 M&O Category A Budget :

2011	PhD eq. total/ funding auth.		M&O A	VELO	Power	
			kCHF	kCHF	kCHF	
			2,545	100	970	Total
		%	CHF	CHF	CHF	CHF
BRAZIL	12	3.4	85,546	3,361	32,605	121,513
FRANCE	44	12.3	313,669	12,325		325,994
BMBF GERMANY	16	4.5	114,062	4,482		118,543
MPI, MPG, GERMANY	6	1.7	42,773	1,681		44,454
IRELAND	2	0.6	14,258	560	5,434	20,252
INFN ITALY	53	14.8	377,829	14,846		392,675
NETHERLANDS	14	3.9	99,804	3,922		103,725
P. R. CHINA	3	0.8	21,387	840	8,151	30,378
POLAND	7	2.0	49,902	1,961		51,863
HHNIPNE ROMANIA	5	1.4	35,644	1,401	13,585	50,630
RUSSIA	32	9.0	228,123	8,964	36,839	273,926
SPAIN	18	5.0	128,319	5,042		133,361
SWITZERLAND	24	6.7	171,092	6,723		177,815
UKRAINE	3	0.8	21,387	840	8,151	30,378
UK	64	17.9	456,246	17,927		474,174
USA	9	2.5	64,160	2,521	23,158	89,838
CERN	45	12.6	320,798	12,605		333,403
TOTAL	357	100.0	2,545,000	100,000	127,924	2,772,924



## Projected 2012 M&O Category A Budget :

2012	PhD eq. total/ funding auth.		M&O A	VELO	Power	
			kCHF	kCHF	kCHF	
			2617	100	970	Total
		%	CHF	CHF	CHF	CHF
BRAZIL	12	3.4	87,966	3,361	32,605	123,933
FRANCE	44	12.3	322,543	12,325		334,868
BMBF GERMANY	16	4.5	117,289	4,482		121,770
MPI, MPG, GERMANY	6	1.7	43,983	1,681		45,664
IRELAND	2	0.6	14,661	560	5,434	20,655
INFN ITALY	53	14.8	388,518	14,846		403,364
NETHERLANDS	14	3.9	102,627	3,922		106,549
P. R. CHINA	3	0.8	21,992	840	8,151	30,983
POLAND	7	2.0	51,314	1,961		53,275
HHNIPNE ROMANIA	5	1.4	36,653	1,401	13,585	51,639
RUSSIA	32	9.0	234,577	8,964	36,839	280,380
SPAIN	18	5.0	131,950	5,042		136,992
SWITZERLAND	24	6.7	175,933	6,723		182,655
UKRAINE	3	0.8	21,992	840	8,151	30,983
UK	64	17.9	469,154	17,927		487,081
USA	9	2.5	65,975	2,521	23,158	91,654
CERN	45	12.6	329,874	12,605		342,479
TOTAL	357	100.0	2,617,000	100,000	127,924	2,844,924

## Conclusions

The M&O Cat A budget has again shown to be **well balanced** over the recent years even with our first year of **full** operation (**and of successes!**).

For the near future, we do not expect large fluctuations of the main expenditure lines inside an essentially **constant total budget**. However, the stress of running at very challenging conditions is visible and has required an extra attention.

Thanks to **NON-CORE** extra-contributions, we are consolidating the Online Computing.

## M&O Category B

Typical Category B M&O budgets are given in the Table. The total is ~1100\* kCHF, a bit less than half of the M&O Cat.A total. Category B M&O funds show to be constant over time inside ~10% .

CALO (CERN, ES, FR, RO, RU)	315
Level_0 (FR, IT)	60
Muons (CERN, IT, RU)	151
On Line (CERN)	80
Outer Tracker (GE, NL, PL, PRC)	120
RICH (CERN, IT, UK)	207*
Silicon Trackers (CH, ES, GE, UKR)	80
VELO (CERN, CH, EI, NL, RU, UK, USA)	135

Category B M&O budgets in kCHF

\* It shares contributions for HPD-spare programme

CERN (CA, MU, ON, RI, VE)	230
CH (STs, VE)	81
ES (CA, STs)	35
FR (CA, L0)	140
GE (OT, STs)	93
IT (L0, MU, RI)	140
NL (OT, VE)	90
RU (CA, MU, VE)	115
UK (RI, VE)	195

Per Country “typical” budgets in kCHF  
(≥10 kCHF)