

Most Common Fund spending now goes on infrastructure.

In the course of next year, essentially all the remaining funds will be spent on finishing the sub-detectors and infrastructure. Only the small amount still to be spent on the on-line Farm could remain to be spent.

COMMON FUND Spending 2006 in kCHF		
till end July		
Detector	Spent	Committed
CALO	429	58
DAH	249	5
OTR	16	75
INFRASTRUCTURE	1,152	1,191
MUON	745	86
RICH	72	0
TOTAL	2,662	1,416

Status of Contributions to the CF and the main changes since the previous RRB

The Chinese contribution has been fully paid

Italy is making a contribution of 300 k this year and their requested invoice is “in the post”.

Germany BMBF is now fully paid, and Germany MPI is in talks about the remaining 240 k of which some is expected to be contributed later this year.

There was a recent meeting in Poland at which funds for LHCb were promised such that the present debts are expected to be paid this year.

Our Spanish collaborators are in the process of obtaining payment of almost all the outstanding contribution.

The 500 kCHF indicated as being due from NIKHEF will eventually appear as a contribution in kind. The agreed contribution to the OTR from CF is 900 kCHF of which less than 200 k has been spent so far. The NIKHEF contribution will be spent directly on completing the OTR.

Romania is paying half of their remaining contribution this year and will pay the rest (17 kCHF) next year.

Zurich have requested SNF for their outstanding funds that could be available in the middle of 2007 if the request is successful.

LHCb needs all outstanding CF contributions in order to keep advancing with the installation of the detectors and their infrastructure.

The table of CORE spending for 2007 has been presented at the two previous RRB's and we still expect that spending will be finished by the end of this year with some commitments being carried over into 2007.

Category A M&O

The 2007 estimate was modified following two meetings with the Scrutiny Group and their referees. Most changes were small. The SG would like most of the electronics Pool charges to be moved to Cat B but this has not been possible as yet as the detectors seem to prefer it to remain in Cat A. Cat B would involve more complications for them with the establishment of team codes for the payments.

Regarding on-line items, costs for the FARM for 2007-10 have been re-estimated based on having hot spares and the replacement of PC's dying out of warranty. This latter is taken as about 6% of investment. This covers the period when most of the equipment will still be under guarantee. Replacement plans for later years are still under discussion within the CB with no scenario yet agreed upon.

The sharing numbers have been updated since last year.

Estimated Category A M&O Costs for LHCb	2007
Items	kCHF
Detector related costs	983
Secretariat	189
On-Call communications	12
CORE Computing	0
On-line Computing	580
Test Beams	40
Laboratory Operations	45
General Services	373
Total	2222
Power	600
Grand Total	2822

FUNDING AGENCY	PhD	% PhD	2007	Power	Total Cat A
	Equivs	Equivs.	Share	Share	plus Power
BRAZIL	14	3.88%	86,172	23,269	109,440
CERN	50	13.85%	307,756		
CHINA	3	0.83%	18,465	4,986	23,452
FRANCE IN2P3	48	13.30%	295,446		
GERMANY BMBF	11	3.05%	67,706		
GERMANY MPG	7	1.94%	43,086		
ITALY INFN	53	14.68%	326,222		
NETHERLANDS	15	4.16%	92,327		
POLAND	13	3.60%	80,017		
ROMANIA	4	1.11%	24,620	6,648	31,269
RUSSIA	32	8.86%	196,964	22,535	219,499
SPAIN	17	4.71%	104,637		
SWITZ Lausanne	10	2.77%	61,551		
SWITZ Zurich	6	1.66%	36,931		
UK	68	18.84%	418,548		
UKRAINE	4	1.11%	24,620	6,648	31,269
USA NSF	6	1.66%	36,931	9,444	46,375
TOTAL	361	100.00%	2,222,000	73,530	

M&O Category B

Some of the estimates for Cat B still require updating, and the following table can only be taken as indicative for those detectors that have not yet presented their sharing method.

In particular, about half the sub-detectors have still to provide their agreed sharing method.

Cat B estimates for 2007

Subsystem	VELO	RICH	ST	OT	CALO	MUON	TRIGGER	DAQ	ECS etc	TOTALS
Mechanics		56	2		20	5				83
Gas-system		30				5				35
Cryo-system										0
Cooling system		5		3	5					13
FE electronics	20									20
Standard electronics, PS (LV, HV)		10	20.5	18	150	33				231.5
Standard electronics, Crates	100		5.5	1					40	146.5
Standard electronics, RO Modules		10	5			166	60.3			241.3
Controls, (DCS, DSS)		3	5	5						13
Sub-Detectors		37			150	148			30	365
Areas						55				55
Communications	6			7	15	5				33
Store Items						5				5
Hired Manpower @ CERN (CHF)			45					250		295
Technical Manpower @CERN (FTE)	0.25	2		3						5.25
TOTALS (excl. FTEs)	126	151	83	34	340	422	60.3	250	70	1536.3

Agreed Cat B sharing for 2007

Detector	Cat B cost for 2007 in kCHF					9/8/06
	Totals					
MUON		Italy	CERN	Russia		
	408	285.6	81.6	40.8		
RICH		Italy	CERN	UK		
	151	19.63	19.63	111.74		
STR		Kiev	Lausanne	MPI	Santiago	Zurich
	83	4.15	21.58	21.58	14.11	21.58
L0 Trigger		France	Italy			
	60.3	48.24	12.06			
DAQ		CERN				
	250	250				

2007	
Project management	2.70
Software project engineer	0.90
Physics application leader	0.90
Computing project leader	0.90
Software framework	2.80
GAUDI PL and architect	0.20
General services	1.00
Event model	0.10
Bookkeeping	1.50
Alignment and conditions DB	2.00
Development & coordination	1.50
Deployment	0.50
Software infrastructure	3.00
Code and release management	0.50
User environment support	0.25
Software distribution tools	0.50
Code integrity tools	0.50
User software support	0.50
Documentor	0.50
Webmaster	0.25
Applications	4.70
<i>Simulation: Gauss</i>	<i>1.10</i>
Integration	0.50
Framework	0.10
Generators	0.50
<i>Digitisation: Boole</i>	<i>0.10</i>
Integration	0.10
<i>Reconstruction: Brunel</i>	<i>0.50</i>
Integration	0.50
<i>Analysis: DaVinci</i>	<i>2.00</i>
Integration	0.50
Development	1.00
Interactive analysis	0.50
<i>Trigger:</i>	<i>0.40</i>
Integration	0.40
<i>Visualisation: Panoramix</i>	<i>0.60</i>
Framework & coordination	0.60

2007 LHCb CORE Computing requirements - FTE

Distributed production	10.20
<i>Dirac:</i>	<i>3.70</i>
Coordination	0.20
WMS	1.50
Monitoring & accounting	1.00
Support	1.00
Production tools:	1.00
Personal desktop	0.50
Processing DB & tools	0.50
<i>Ganga:</i>	<i>3.50</i>
Coordination	0.50
Development	1.50
Support	1.50
<i>Grid resource management:</i>	<i>2.00</i>
VO management	0.25
Accounting & resource management	0.25
Data management tools	1.50
Production	5.00
Coordination	0.50
Production manager	0.50
Data management operations	1.00
RC management	3.00
Global Applications	6.50
Pattern recognition	3.00
Track fitting	2.00
Global particle ID	0.50
Global alignment/calibration	1.00

Total = 36.9

Current FTE breakdown

CERN	7.4	Russia	1.0
UK	6.3	Germany	0.95
Italy	3.4	US	0.95
Netherlands	2.75	Brazil	0.6
France	2.05	Switzerland	0.4
Spain	1.2	Poland	0.1

Total = 27.1 (missing = 4.1)