



CMS

M&O Expenditure for 2005

Compact Muon Solenoid

CERN-RRB-2006-054

Cf. CERN-RRB-2006-034

A. Petrilli, RRB-22, 24 April 2006



Introduction

- **This is the fourth time the CMS Collaboration presents an M&O Expenditure report**
- **Reported expenses are for payments and open commitments related to delivered goods**
- **Long-term commitments should normally not occur**
- **Expenses are compared to the budgets**



M&O-A 2002-2005 Contributions

FUNDING AGENCIES	2002-2005		
	Due	Received	Outstanding
MEMBER STATES			
AUSTRIA	105 567	105 567	
BELGIUM - FNRS	165 054	165 054	
BELGIUM - FWO	49 918	49 918	
BULGARIA	39 266	14 891	24 375
CERN	543 853	543 853	
FINLAND	109 271	109 271	
FRANCE - CEA	126 075	126 075	
FRANCE - IN2P3	351 938	351 938	
GERMANY	360 035	360 035	
GREECE	156 195	4 820	151 375
HUNGARY	55 352	55 352	
ITALY	1 357 911	1 262 911	95 000
POLAND	64 617		64 617
PORTUGAL	39 214	39 214	
SPAIN	215 132	215 132	
SWITZERLAND - ETHZ	135 894	135 894	
SWITZERLAND - PSI	91 704	91 704	
SWITZERLAND Universities	61 511	61 511	
UNITED KINGDOM	312 458	312 458	
A) Total Member States	4 340 965	4 005 598	335 367



M&O-A 2002-2005 Contributions

FUNDING AGENCIES	2002-2005		
	Due	Received	Outstanding
NON-MEMBER STATES			
BRAZIL	15 929	15 929	
CHINA	150 397	150 397	
CROATIA	33 675	33 675	
CYPRUS	14 856	14 856	
ESTONIA	25 711	25 711	
INDIA	198 863	198 863	
IRAN	24 827	24 827	
IRELAND	6 882	6 882	
KOREA	146 150		146 150
MEXICO	3 982	3 982	
NEW ZEALAND	20 646	20 646	
PAKISTAN	50 363	50 363	
RDMS - DMS	422 830	258 079	164 751
RDMS - Russia	543 859	543 859	
SERBIA	38 689	38 689	
TAIPEI	101 966	101 966	
TURKEY	126 744	126 744	
USA - DOE	2 077 934	2 077 934	
USA - NSF	464 636	464 636	
B) Total Non-Member States	4 468 939	4 158 038	310 901
GRAND TOTAL (A+B)	8 809 904	8 163 636	646 268

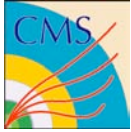


M&O-A 2005 Expenditures Overview

Year	2005
System	A. M&O-A

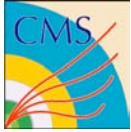
Type	Subsystem	kCHF	
		Budget	Payments
Expense	M&O Without Power		
	A.1. Detector related costs	1,502	1,471
	A.2. Secretariat	205	210
	A.3. Communications	20	3
	A.4. On-line computing	851	766
	A.5. Test beams, calibration facilities	72	72
	A.6. Laboratory operations	220	219
	A.7. General services	715	672
	<i>M&O Without Power Total</i>	3,585	3,414
	<i>Power</i>	250	250
<i>Expense Total</i>		3,835	3,664
<i>Income</i>		3,835	3,515
<i>Balance</i>			(150)

All data extracted from Annex 1



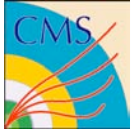
Outstanding Contributions M&O-A

	2002	2003	2004	2005
Budget	924,788	1,765,337	2,497,757	3,692,022
<i>Paid before following year April RRB</i>	805,287	1,548,732	2,301,570	3,371,721
<i>% Outstanding before following year April RRB</i>	12.9%	12.3%	7.9%	8.7%
<i>Paid to-date</i>	871,151	1,658,853	2,331,910	3,371,721
<i>% Outstanding to-date</i>	5.8%	6.0%	6.6%	8.7%



Outstanding Contributions M&O-A

- **Greece outstanding contributions are expected to be paid shortly**
- **Discussions are on going with Bulgaria and Korea for the M&O MoU signature**



M&O-B Expenditures Overview

- **As CMS does not centrally invoice for M&O-B, the Collaboration is reporting qualitatively on these expenses**
- **The arrangements made in 2005 worked satisfactorily**
- **There are no reports of Institutes not participating to their fair share of M&O-B costs.**



Summary

The RRB is invited to take note of the present expenditure report.

- **We kindly ask Funding Agencies to ensure that payments are made as early as possible**
- **We urgently ask Funding Agencies with outstanding contributions for the previous years to make these payments as soon as possible**
- **With the help of CERN, we will keep working on reducing the outstanding contributions**



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Status of M&O MoU Signatures

Compact Muon Solenoid



Status of M&O MoU Signatures

Funding Agency	Signed on
Austria	9/10/02
Belgium-FNRS	23/8/02
Belgium-FWO	20/8/02
Brazil	
Bulgaria	
CERN	4/12/02
China NSFC/CAS	2/8/02
Croatia	8/10/02
Cyprus	16/8/02
Estonia	17/10/02
Finland	19/9/02
France-CEA	26/8/02
France-IN2P3	25/9/02
Germany	12/9/02
Greece	
Hungary	13/9/02
India	16/9/02
Iran	
Ireland	



Status of M&O MoU Signatures

Funding Agency	Signed on
Italy	25/11/02
Korea	
Mexico	
New Zealand	
Pakistan	3/3/03
Poland	19/10/04
Portugal	26/6/02
RDMS-Dubna	17/9/02
RDMS-Russia	
Serbia	12/8/05
Spain	17/2/03
Switzerland-ETHZ	
Switzerland-PSI	
Switzerland-Univ. Basel	15/11/02
Switzerland-Univ. Zurich	27/11/02
Turkey	12/3/03
Taipei	12/7/02
UK	24/9/02
USA-DOE/NSF	14/10/02

Signed end of
March starting
1/1/2007

The M&O MoU has not yet been sent to the following Funding Agencies:
Brazil, Iran, Ireland, Korea, Mexico and New Zealand



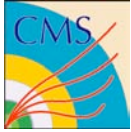
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Preliminary Draft Budget for M&O 2007

Compact Muon Solenoid

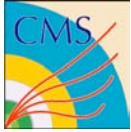
Cf. CERN-RRB-2006-035

A. Petrilli, RRB-22, 24 April 2006



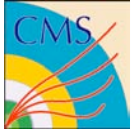
Introduction

- **The CMS Collaboration is presenting, as last year, a preliminary draft Budget Request both for Category A and Category B M&O for information only**
- **The cost sharing presented here is for information only and will change**
- **Further input from the Scrutiny Group will be taken into account in the October M&O Draft Budget.**



2007 M&O-A PDB Comments

- **M&O-A costs will be reviewed by the CMS Finance Board prior to be submitted to the Scrutiny Group**
- **The M&O-A cost estimates have changed with respect to October 2005 RRB meeting in 4 areas with a total increase in the cost estimates of some 550 kCHF**
- **The M&O-A sharing is based on the latest PhDs list available in September 2005 (cf. CERN-RRB-2005-108), this list will be updated for the October 2006 RRB**



2007 M&O-A PDB Overview of Annex A.1

Maintenance & Operations (kCHF)		Year
Group	Description	2007
Maintenance & Operations	Detector related costs	3,242
	Secretariat	245
	Communications	20
	On-line computing	1,810
	Test beams, calibration facilities	165
	Laboratory operations	280
	General services	1,860
	Core Computing Infrastructure & Services	1,680
Maintenance & Operations Total		9,302
Power	Electricity	1,600
Power Total		1,600
Grand Total		10,902



2007 M&O-B PDB Comments

- **M&O-B costs have been reviewed by the CMS Collaboration**
- **This budget request will be further updated before submission to the Scrutiny Group**
- **The M&O-B cost sharing presented is the same as the one presented in October 2005**
- **The sharing is still subject to changes**



2007 M&O-B PDB Overview of Annex B.1

Amount (kCHF / FTE)			Detector					Core Computing	Grand Total
Description	Ref.	Details	Tracker	ECAL	HCAL	Muon	Trigger		
Material Resources (kCHF)	B.1.01	Mechanics	10	55		23			88
	B.1.02	Gas-system	0	4	1	42			48
	B.1.04	Cooling system	0	66	1	21			89
	B.1.05	FE electronics	0	182		340			522
	B.1.06	Standard electronics, PS (LV, HV)	548	164	10	282			1,003
	B.1.07	Standard electronics, Crates	0	79	10	99			188
	B.1.08	Standard electronics, RO Modules	748	193	10	491	490		1,932
	B.1.09	Controls, (DCS, DSS)	74	215		170			459
	B.1.10	Sub-Detector Spares	741	40	3	99			883
	B.1.11	Areas	100	65	28	124			317
	B.1.12	Communications	15	22	125	37			198
	B.1.13	Store Items	40	70	158	58			326
	B.1.14	Hired Manpower @CERN	400	351	330	179			1,260
	Material Resources (kCHF) Total			2,676	1,506	676	1,965	490	
Human Resources (FTE)	B.2.01	Technical Manpower @CERN	6	10	9	12	8		45
	B.2.02	Core Computing Manpower @CMS						75	75
Human Resources (FTE) Total			6	10	9	12	8	75	121



Summary

- **The M&O-A Preliminary Draft Budget 2007 amounts to some 10.9 MCHF**
- **The M&O-B Preliminary Draft Budget 2007 amounts to some 7.3 MCHF and some 121 FTEs of collaborating Institutes manpower**
- **The RRB is invited take note of the present, unscrutinized, cost estimates for M&O-A and M&O-B**