



# CMS

## M&O Expenditure for 2006

Compact Muon Solenoid

**CERN-RRB-2007-048**

Cf. CERN-RRB-2007-026

A. Petrilli, RRB-24, 23 April 2007



# Introduction

- **This is the fifth 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 2002-2006 Contributions

FUNDING AGENCIES	2002-2006		
	Due	Received	Outstanding
<b>MEMBER STATES</b>			
AUSTRIA	171 694	171 694	
BELGIUM - FNRS	303 320	303 320	
BELGIUM - FWO	79 976	79 976	
BULGARIA	69 323	14 891	54 432
CERN	916 569	916 569	
FINLAND	181 410	181 410	
FRANCE - CEA	222 260	222 260	
FRANCE - IN2P3	568 354	568 354	
GERMANY	624 543	624 543	
GREECE	270 414	270 414	
HUNGARY	91 421	91 421	
ITALY	2 331 780	2 236 780	95 000
POLAND	112 709	112 709	
PORTUGAL	63 261	63 261	
SPAIN	395 479	395 479	
SWITZERLAND - ETHZ	232 078	232 078	
SWITZERLAND - PSI	159 596	159 596	
SWITZERLAND Universities	89 803	89 803	
UNITED KINGDOM	558 931	558 931	
<b>A) Total Member States</b>	<b>7 442 921</b>	<b>7 293 489</b>	<b>149 432</b>



# M&O-A 2002-2006 Contributions

<b>NON-MEMBER STATES</b>			
BRAZIL	42 668	42 668	
CHINA	243 981	243 981	
CROATIA	73 782	73 782	
CYPRUS	28 225	14 856	13 369
ESTONIA	39 080	39 080	
INDIA	344 277	344 277	
IRAN	44 881	44 881	
IRELAND	13 567	13 567	
KOREA	120 181	120 181	
KOREA Universities	246 419		246 419
MEXICO	37 404	24 036	13 368
NEW ZEALAND	40 700	40 700	
PAKISTAN	70 417	70 417	
RDMS - DMS	650 107	650 107	
RDMS - Russia	881 118	743 859	137 259
SERBIA	58 743	58 743	
TAIPEI	175 497	175 497	
TURKEY	227 013	227 013	
USA - DOE	3 791 054	3 791 054	
USA - NSF	922 796	922 796	
<b>B) Total Non-Member States</b>	<b>8 051 910</b>	<b>7 641 495</b>	<b>410 415</b>
<b>GRAND TOTAL (A+B)</b>	<b>15 494 831</b>	<b>14 934 984</b>	<b>559 847</b>



# M&O-A 2006 Expenditures Overview

Year	2006
System	A. M&O-A

			kCHF	
Type		Subsystem	Budget	Payments
Expense	M&O-A w/o Power	A.1. Detector related costs	2,206	2,336
		A.2. Secretariat	245	250
		A.3. Communications	20	16
		A.4. On-line computing	888	586
		A.5. Test beams, calibration facilities	195	203
		A.6. Laboratory operations	290	253
		A.7. General services	1,430	1,347
		A.9. Core Computing Infrastructure & Services	978	983
	<i>M&amp;O-A w/o Power Total</i>		6,252	5,973
	<i>Power</i>		700	700
<b><i>Expense Total</i></b>			6,952	6,673
<b><i>Income</i></b>			6,952	6,623
<b><i>Balance</i></b>				<b>50</b>

**All data extracted from Annex 1**



## Outstanding Contributions M&O-A

	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Budget	924,788	1,765,337	2,497,757	3,692,022	6,564,745
<i>Paid before following year April RRB</i>	805,287	1,548,732	2,301,570	3,371,271	6,384,062
<i>% Outstanding before following year April RRB</i>	12.9%	12.3%	7.9%	8.7%	2.8%
<i>Paid to-date</i>	889,273	1,695,414	2,452,561	3,597,021	6,384,062
<i>% Outstanding to-date</i>	3.8%	4.0%	1.8%	2.6%	2.8%



## 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 2006 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 keep working on reducing the outstanding contributions**





# CMS

## Status of M&O MoU Signatures

Compact Muon Solenoid



## Status of M&O MoU Signatures

<b>Funding Agency</b>	<b>Signed on</b>
<b>Austria</b>	<b>9-Oct-2002</b>
<b>Belgium-FNRS</b>	<b>23-Aug-2002</b>
<b>Belgium-FWO</b>	<b>20-Aug-2002</b>
<b>Brazil</b>	
<b>Bulgaria</b>	
<b>Colombia</b>	
<b>CERN</b>	<b>4-Dec-2002</b>
<b>China NSFC/CAS</b>	<b>2-Aug-2002</b>
<b>Croatia</b>	<b>8-Oct-2002</b>
<b>Cyprus</b>	<b>16-Aug-2002</b>
<b>Estonia</b>	<b>17-Oct-2002</b>
<b>Finland</b>	<b>19-Sep-2002</b>
<b>France-CEA</b>	<b>26-Aug-2002</b>
<b>France-IN2P3</b>	<b>25-Sep-2002</b>
<b>Germany</b>	<b>12-Sep-2002</b>
<b>Greece</b>	
<b>Hungary</b>	<b>13-Sep-2002</b>
<b>India</b>	<b>16-Sep-2002</b>
<b>Iran</b>	
<b>Ireland</b>	



## Status of M&O MoU Signatures

<b>Funding Agency</b>	<b>Signed on</b>
<b>Italy</b>	<b>25-Nov-2002</b>
<b>Korea</b>	<b>25-Oct-2006</b>
<b>Mexico</b>	
<b>New Zealand</b>	
<b>Pakistan</b>	<b>3-Mar-2003</b>
<b>Poland</b>	<b>19-Oct-2004</b>
<b>Portugal</b>	<b>26-Jun-2002</b>
<b>RDMS-Dubna</b>	<b>17-Sep-2002</b>
<b>RDMS-Russia</b>	<b>26-Mar-2006</b>
<b>Serbia</b>	<b>12-Aug-2005</b>
<b>Spain</b>	<b>17-Feb-2003</b>
<b>Switzerland-ETHZ</b>	
<b>Switzerland-PSI</b>	
<b>Switzerland-Univ. Basel</b>	<b>15-Nov-2002</b>
<b>Switzerland-Univ. Zurich</b>	<b>27-Nov-2002</b>
<b>Taipei</b>	<b>12-Jul-2002</b>
<b>Turkey</b>	<b>12-Mar-2003</b>
<b>UK</b>	<b>24-Sep-2002</b>
<b>USA-DOE/NSF</b>	<b>14-Oct-2002</b>

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



# CMS

## Preliminary Draft Budget for M&O 2008

Compact Muon Solenoid

Cf. CERN-RRB-2007-027

A. Petrilli, RRB-24, 23 April 2007



# 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.**



## 2008 M&O-A 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 2006 RRB meeting with a total increase in the cost estimates of some 3%**
- **The M&O-A sharing is based on the latest PhDs list available in September 2006 (cf. CERN-RRB-2006-027), this list will be updated for the October 2007 RRB**



## 2008 M&O-A Overview of Annex A.1

Maintenance & Operations (kCHF)		Year
Group	Description	2007
Maintenance & Operations	Detector related costs	3,552
	Secretariat	340
	Communications	120
	On-line computing	2,735
	Test beams, calibration facilities	115
	Laboratory operations	270
	General services	1,615
	Core Computing Infrastructure & Services	1,411
Maintenance & Operations Total		10,158
Power	Electricity	1,800
Power Total		1,800
Grand Total		11,958



## 2008 M&O-B 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 2006**
- **The sharing presented here is subject to changes**





# 2008 M&O-B PDB Overview of Annex B.1

Amount (kCHF / FTE)			Detector					Grand Total	
Description	Ref.	Details	Tracker	ECAL	HCAL	Muon	Trigger		Core Computing
Material Resources (kCHF)	B.1.01	Mechanics	10	28	0	11			49
	B.1.02	Gas-system	14	5	2	45			66
	B.1.03	Cryo-system			0				0
	B.1.04	Cooling system	31	69	2	21			123
	B.1.05	FE electronics	0	0	0	278			278
	B.1.06	Standard electronics, PS (LV, HV)	348	180	0	291			819
	B.1.07	Standard electronics, Crates	0	48	0	74			122
	B.1.08	Standard electronics, RO Modules	748	165	0	280	222		1,415
	B.1.09	Controls, (DCS, DSS)	58	100	0	152			310
	B.1.10	Sub-Detector Spares	550	0	0	79			629
	B.1.11	Areas	233	80	23	145			481
	B.1.12	Communications	23	21	94	31			169
	B.1.13	Store Items	48	40	60	50			198
	B.1.14	Hired Manpower @CERN	400	698	338	313			1,749
Material Resources (kCHF) Total			2,463	1,433	517	1,770	222		6,405
Human Resources (FTE)	B.2.01	Technical Manpower @CERN	8	10	13	15	8		54
	B.2.02	Core Computing Manpower @CMS						96	96
Human Resources (FTE) Total			8	10	13	15	8	96	150



## Other M&O Matters

- **The Collaboration is preparing Memoranda of Agreement (MoA) to fully account for the effort of all CMS members towards service work**
- **To ensure full coherence between the MoA and the M&O budgets, the itemisation of the M&O expenses might change**
- **The RRB will be kept informed of the MoA status**



## Summary

- **The M&O-A Preliminary Draft Budget 2008 amounts to some 12 MCHF**
- **The M&O-B Preliminary Draft Budget 2008 amounts to some 6.4 MCHF and some 150 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**