CMS

Compact Muon Solenoid

M&O Expenditure for 2009

CERN-RRB-2010-053

Cf. CERN-RRB-2010-030

A. Charkiewicz, RRB-30, April 19, 2010

Introduction

- This is the eighth time the CMS Collaboration presents an M&O Expenditure report
- Reported expenses are for payments (open commitments related to delivered goods are reported globally)
- Expenses are compared to the approved budgets

M&O-A 2002-2009 Contributions

- M&O-A received contributions are as indicated in the Finance report (cf. CERN-RRB-2010-029)
- Budget years up to 2007 are now fully paid
- Budget years 2008-2009 are expected to be fully paid by the October 2010 RRB
- CMS thanks all Funding Agencies for their timely payments to the 2009 M&O-A

Outstanding Contributions M&O-A

Budget Year	2002	2003	2004	2005	2006	2007	2008	2009
Invoiced CHF	924,788	1,765,337	2,497,757	3,692,022	6,564,745	8,847,436	10,983,548	11,216,034
Paid before following year April RRB	805,287	1,548,732	2,301,570	3,371,721	6,384,062	8,839,133	10,664,148	10,977,022
Outstanding % before following year April RRB	12.9%	12.3%	7.9%	8.7%	2.8%	0.1%	2.9%	2.1%
Paid to-date	924,788	1,765,337	2,497,757	3,692,022	6,564,749	8,847,436	10,916,985	10,977,022
Outstanding % to-date	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	2.1%

M&O-A 2009 Expenditures Overview

- An overspend of some 2.4 M CHF has been incurred in the 2009 M&O-A expenditures. This is due to the following main reasons (signaled to the Scrutiny Group in the course of the year):
  - The length of the 2009 shutdown was twice the period foreseen at the time the budget was established and necessary work was carried out in parallel with operation to prepare for the very long run period 2010-2011 which required maintaining specialized teams
  - The specific areas affected were: Safety Systems, Heavy Transport, Moving & Hydraulic Systems, Cranes, Survey
  - Gas and Cooling Fluid consumption was higher than foreseen
  - The cost of video-conference software was not included in the budget

M&O-A 2009 Expenditures Overview

- In view of the anticipated budget over-run in the area of Detector Costs, General Services and Communications, in order to limit its impact, efforts were made to reduce the deficit by limiting and delaying expenditures on other activities

- The CMS Collaboration intends to absorb this deficit during the period 2010-2011 assuming that the LHC running schedule established during the Chamonix Workshop is maintained (i.e. constant running mode until November 2011 with a short technical stop at the end of 2010)

M&O-A 2009 Expenditures Overview

Year	2009
System	A. M&O-A

			kCHF	
Type		Subsystem	**Budget**	**Payments**
Expense	M&O-A w/o Power	A.1. Detector related costs	3,913	6,394
		A.2. Secretariat	290	282
		A.3. Communications	120	386
		A.4. On-line computing	2,400	2,033
		A.5. Test beams, calibration facilities	115	114
		A.6. Laboratory operations	270	277
		A.7. General services	1,655	1,901
		A.9. Core Computing Infrastructure & Services	1,645	1,408
	M&O-A w/o Power Total		10,408	12,796
	Power	A.8. Electricity	1,800	436
Expense Total			12,208	13,233
Income			11,216	10,977

801 kCHF of outstanding commitments to be paid in 2010

All data extracted from Annex 1

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 2009 worked satisfactorily
- A Task Force was set up by the Finance Board to ensure that M&O-B cost sharing is carried out in as fair and equitable way as possible
- The Task Force has made specific recommendations to the Finance Board to further formalize the M&O-B budgetary process with a view to ensuring transparency and coherence between the different CMS Sub-systems

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**



Status of M&O MoU Signatures

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Funding Agency	Signed on
Austria	9-Oct-2002
Belgium-FNRS	23-Aug-2002
Belgium-FWO	20-Aug-2002
Brazil	
Bulgaria	7-Aug-2008
Colombia	19-Sep-2008
CERN	4-Dec-2002
China NSFC/CAS	2-Aug-2002
Croatia	8-Oct-2002
Cyprus	16-Aug-2002
Estonia	17-Oct-2002
Finland	19-Sep-2002
France-CEA	26-Aug-2002
France-IN2P3	25-Sep-2002
Germany	12-Sep-2002
Greece	28-Apr-2009
Hungary	13-Sep-2002
India	16-Sep-2002
Iran	
Ireland	
Italy	25-Nov-2002

Status of M&O MoU Signatures

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

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

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Preliminary Draft Budget for M&O 2011

Cf. CERN-RRB-2010-031

A. Charkiewicz, RRB-30, April 19, 2010

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 in document CERN-RRB-2010-031 is preliminary and for information only (based on the latest PhDs list available in October 2009) and will change for the October 2010 RRB
- The M&O-A costs will be reviewed by the CMS Finance Board and further input from the Scrutiny Group will be taken into account in the October M&O Draft Budget

2011 M&O-A PDB Comments

- The M&O-A cost estimates have changed with respect to the October 2009 RRB meeting
- Some of these changes have already been signaled at the October 2009 RRB (On-line DBA, indexation of manpower)
- Others result from unexpected emergency leak repairs, manpower needs in the area of computing and cost of video-conference software

2011 M&O-A PDB Overview of Annex A.1

Maintenance & Operations (kCHF)		Year
Group	Description	2011
Maintenance & Operations	Detector related costs	4,852
	Secretariat	297
	Communications	443
	On-line computing	4,907
	Test beams, calibration facilities	96
	Laboratory operations	857
	General services	1,805
	Core Computing Infrastructure & Services	2,064
Maintenance & Operations Total		15,320
Power	Electricity	1,800
Power Total		1,800
Grand Total		17,120

2011 M&O-B PDB Comments

- M&O-B costs have been partially reviewed by the CMS Collaboration. This is subject to an in-depth analysis by a Task Force created by the Finance Board in June 2009.
- This budget request will be further updated before being presented to the Scrutiny Group and to the October 2010 RRB
- The M&O-B cost sharing presented is the same as the one presented in October 2009. Further modifications may result from adjustments in Sub-systems.

2011 M&O-B PDB Overview of Annex B.1

Amount (kCHF/FTE)			Detector						
Description	Ref.	Details	Tracker	ECAL	HCAL	Muon	Trigger	Core Comput	Grand Total
Material Resources (kCHF)	B.1.01	Mechanics	40	25	133	5			203
	B.1.02	Gas-system	115	15	2	25			157
	B.1.03	Cryo-system			0	0			0
	B.1.04	Cooling system	250	90	0	5			345
	B.1.05	FE electronics		0	284	36			320
	B.1.06	Standard electronics, PS (LV, HV)	330	100	16	114			560
	B.1.07	Standard electronics, Crates		40	37	81			158
	B.1.08	Standard electronics, RO Modules	90	155	6	136	490		877
	B.1.09	Controls, (DCS, DSS)	110	85	27	44			266
	B.1.10	Sub-Detector Spares	0	0	1	58			59
	B.1.11	Areas	100	100	0	89			289
	B.1.12	Communications	20	10	82	20			132
	B.1.13	Store Items	60	50	15	66			191
	B.1.14	Hired Manpower @CERN	620	470	311	575	200		2,176
Material Resources (kCHF) Total			1,735	1,140	912	1,254	690		5,731
Human Resources (FTE)	B.2.01	Technical Manpower @CERN	0	0	0	11	8		19
	B.2.02	Core Computing Manpower @CMS						96	96
Human Resources (FTE) Total			0	0	0	11	8	96	115

Summary

- **The M&O-A Preliminary Draft Budget 2011 amounts to 17.1 MCHF. CMS intends to reduce this amount in the DB proposal to the October 2010 RRB by:**
  - **1.2 M CHF for the leak-related repair by using past M&O-A savings**
  - **Further scrutiny and budget item realignments**
- **This would bring the 2011 M&O-A budget request closer to the amount of 15.2 M CHF already presented in the October 2009 RRB**
- **The M&O-B Preliminary Draft Budget 2011 amounts to some 5.7 MCHF and some 115 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**