

# Status of CMS 2002 Maintenance & Operations Category A Budget

## INTRODUCTION

This document summarises the current status of the Maintenance & Operations Cat. A 2002 budget for the CMS Collaboration.

The year 2002 is a transition year for M&O. In October 2001 the RRB agreed to invoice 30% of the requested budget as presented in *Draft Budget for CMS Maintenance & Operations and Commissioning & Integration in the Year 2002, CMS RRB-D 2001-110*.

In the mean time, the M&O classification and the costs presented in that document, have been further reviewed by the Scrutiny Group and a few changes have been made.

It is therefore important to update the CMS Draft Budget for M&O to take those changes into account and to report on the authorized invoices status.

## STRUCTURE OF THE ANNEXES

Annex 1 presents the sharing of the M&O Cat. A costs used in this document. This is the same as Annex 13.2 of the CMS Memorandum of Understanding for Maintenance and Operations.

Annex 2 presents the Maintenance & Operations budget for 2002, taking into account the new classification and the new costs.

Annex 3 summarises the costs per Funding Agency and per major M&O heading.

Annex 4 presents the current status of invoices sent, based on 30% of the Draft Budget for M&O, CMS RRB-D 2001-110, the contributions received and the amount of the final instalment, calculated on the basis of the new costs as per Annex 1.

## RECOMMENDATION

The RRB is invited to agree to the proposed M&O expenditures and the sharing presented in Annexes 1 and 2. It is also invited to agree to the release of the final instalment for the year 2002 as presented in Annex 3.

**ANNEXES****M&O 2002 Status as of March 28, 2002**

- Annex 1:* Cost Sharing between Funding Agencies
- Annex 2:* Maintenance & Operations 2002
- Annex 3:* Summary Maintenance & Operations 2002
- Annex 4:* M&O Cat. A Budget 2002 Status

# ANNEX 1

## Maintenance & Operations Cat. A Cost Sharing

(Count closed on December 14, 2001)

Funding Agencies	PhDs	%
Austria	14	1.36%
Belgium-VUB	3	0.29%
Belgium-UIA	3	0.29%
Belgium-ULB	4	0.39%
Belgium-UMH	2	0.19%
Belgium-UCL	7	0.68%
Bulgaria	6	0.58%
CERN	64	6.23%
China	16	1.56%
Croatia	3	0.29%
Cyprus	2	0.19%
Estonia	3	0.29%
Finland	11	1.07%
France-CEA	16	1.56%
France-IN2P3	41	3.99%
Germany BMBF	35	3.41%
Greece	16	1.56%
Hungary	5	0.49%
India	24	2.34%
Italy	158	15.38%
Korea	31	3.02%
Pakistan	12	1.17%
Poland	10	0.97%
Portugal	3	0.29%
RDMS-Russia	88	8.57%
RDMS-DMS	51	4.97%
Spain-CIEMAT	12	1.17%
Spain-Univ.	16	1.56%
Switzerland-ETHZ	19	1.85%
Switzerland-PSI	9	0.88%
Switzerland-Univ.	7	0.68%
Taipei	8	0.78%
Turkey	14	1.36%
United Kingdom	31	3.02%
USA-DOE, USA-NSF	283	27.56%
<b>Total</b>	<b>1027</b>	<b>100.00%</b>

# ANNEX 2

## Maintenance & Operations 2002

Estimate of Costs [kCHF] expected in the Year 2002

Revised Costs and Revised Classification as Agreed by  
Scrutiny Group

Ref.	Description	Payments expected in 2002
<b>A.</b>	<b>Maintenance &amp; Operations</b>	<b>1,001</b>
<b>A.1.</b>	<b>Detector related costs</b>	<b>199</b>
A.1.05	Gas consumption	50
A.1.08	External cryogenics	60
A.1.09	Cryogenic fluids (below -50°C)	24
A.1.10	Moving/hydraulic systems	65
<b>A.2.</b>	<b>Secretariat</b>	<b>45</b>
A.2.02	Economat	15
A.2.04	Printing and publication	30
<b>A.3.</b>	<b>Communications</b>	<b>5</b>
A.3.01	GSM phones; on-call service	5
<b>A.4.</b>	<b>On-line computing</b>	<b>80</b>
A.4.05	Software licenses	80
<b>A.5.</b>	<b>Test beams, calibration facilities</b>	<b>150</b>
A.5.01	General operation	80
A.5.02	Common electronics	20
A.5.03	Electronics pool rentals	30
A.5.04	Gas systems	10
A.5.05	Gas consumption	10
<b>A.6.</b>	<b>Laboratory operations</b>	<b>20</b>
A.6.02	Workshops	20
<b>A.7.</b>	<b>General services</b>	<b>502</b>
A.7.01	Cooling & ventilation	67
A.7.02	Power	95
A.7.03	Power distribution system	10
A.7.05	Cranes	30
A.7.06	Cars	30
A.7.09	Storage space	50
A.7.10	Common desktop infrastructure	30
A.7.11	Reviewing & Engineering	130
A.7.12	Outreach	60

# ANNEX 3

## Summary Maintenance & Operations 2002

Estimate of Costs [kCHF] expected in the Year 2002

Revised Costs and Revised Classification as Agreed by Scrutiny Group

Funding Agencies	A.1. Detector related costs	A.2. Secretariat	A.3. Communications	A.4. On-line computing	A.5. Test beams, calibration facilities	A.6. Laboratory operations	A.7. General services	A. Maintenance & Operations
Austria	2.7	0.6	0.1	1.1	2.0	0.3	6.8	13.6
Belgium-VUB	0.6	0.1	0.0	0.2	0.4	0.1	1.5	2.9
Belgium-UIA	0.6	0.1	0.0	0.2	0.4	0.1	1.5	2.9
Belgium-ULB	0.8	0.2	0.0	0.3	0.6	0.1	2.0	3.9
Belgium-UMH	0.4	0.1	0.0	0.2	0.3	0.0	1.0	1.9
Belgium-UCL	1.4	0.3	0.0	0.5	1.0	0.1	3.4	6.8
Bulgaria	1.2	0.3	0.0	0.5	0.9	0.1	2.9	5.8
CERN	12.4	2.8	0.3	5.0	9.3	1.2	31.3	62.4
China	3.1	0.7	0.1	1.2	2.3	0.3	7.8	15.6
Croatia	0.6	0.1	0.0	0.2	0.4	0.1	1.5	2.9
Cyprus	0.4	0.1	0.0	0.2	0.3	0.0	1.0	1.9
Estonia	0.6	0.1	0.0	0.2	0.4	0.1	1.5	2.9
Finland	2.1	0.5	0.1	0.9	1.6	0.2	5.4	10.7
France-CEA	3.1	0.7	0.1	1.2	2.3	0.3	7.8	15.6
France-IN2P3	7.9	1.8	0.2	3.2	6.0	0.8	20.0	40.0
Germany BMBF	6.8	1.5	0.2	2.7	5.1	0.7	17.1	34.1
Greece	3.1	0.7	0.1	1.2	2.3	0.3	7.8	15.6
Hungary	1.0	0.2	0.0	0.4	0.7	0.1	2.4	4.9
India	4.7	1.1	0.1	1.9	3.5	0.5	11.7	23.4
Italy	30.6	6.9	0.8	12.3	23.1	3.1	77.2	154.0
Korea	6.0	1.4	0.2	2.4	4.5	0.6	15.2	30.2
Pakistan	2.3	0.5	0.1	0.9	1.8	0.2	5.9	11.7
Poland	1.9	0.4	0.0	0.8	1.5	0.2	4.9	9.7
Portugal	0.6	0.1	0.0	0.2	0.4	0.1	1.5	2.9
RDMS-Russia	17.1	3.9	0.4	6.9	12.9	1.7	43.0	85.8
RDMS-DMS	9.9	2.2	0.2	4.0	7.4	1.0	24.9	49.7
Spain-CIEMAT	2.3	0.5	0.1	0.9	1.8	0.2	5.9	11.7
Spain-Univ.	3.1	0.7	0.1	1.2	2.3	0.3	7.8	15.6
Switzerland-ETHZ	3.7	0.8	0.1	1.5	2.8	0.4	9.3	18.5
Switzerland-PSI	1.7	0.4	0.0	0.7	1.3	0.2	4.4	8.8
Switzerland-Univ.	1.4	0.3	0.0	0.5	1.0	0.1	3.4	6.8
Taipei	1.6	0.4	0.0	0.6	1.2	0.2	3.9	7.8
Turkey	2.7	0.6	0.1	1.1	2.0	0.3	6.8	13.6
United Kingdom	6.0	1.4	0.2	2.4	4.5	0.6	15.2	30.2
USA-DOE, USA-NSF	54.8	12.4	1.4	22.0	41.3	5.5	138.3	275.8
Total	199	45	5	80	150	20	502	1,001

# ANNEX 4

## M&O Cat.A Budget 2002 Status

Received and Expected Contributions [kCHF] for the Year 2002

Revised Costs as Agreed by Scrutiny Group

Funding Agencies	M&O Share	First Instalment	Paid	Final Instalment
Austria	13.6	4.2		9.4
Belgium-VUB	2.9	0.9		2.0
Belgium-UIA	2.9	0.9	0.9	2.0
Belgium-ULB	3.9	1.2		2.7
Belgium-UMH	1.9	0.6	0.6	1.3
Belgium-UCL	6.8	2.1	2.1	4.7
Bulgaria	5.8	1.8		4.0
CERN	62.4	19.2		43.1
China	15.6	4.8		10.8
Croatia	2.9	0.9		2.0
Cyprus	1.9	0.6	0.6	1.3
Estonia	2.9	0.9		2.0
Finland	10.7	3.3		7.4
France-CEA	15.6	4.8		10.8
France-IN2P3	40.0	12.3	12.3	27.6
Germany BMBF	34.1	10.5		23.6
Greece	15.6	4.8		10.8
Hungary	4.9	1.5		3.4
India	23.4	7.2		16.2
Italy	154.0	154.0	154.0	0.0
Korea	30.2	9.3		20.9
Pakistan	11.7	3.6		8.1
Poland	9.7	3.0		6.7
Portugal	2.9	0.9		2.0
RDMS-Russia	85.8	26.5		59.3
RDMS-DMS	49.7	15.3		34.4
Spain-CIEMAT	11.7	3.6		8.1
Spain-Univ.	15.6	4.8		10.8
Switzerland-ETHZ	18.5	5.7		12.8
Switzerland-PSI	8.8	2.7	2.7	6.1
Switzerland-Univ.	6.8	2.1		4.7
Taipei	7.8	2.4		5.4
Turkey	13.6	4.2		9.4
United Kingdom	30.2	9.3		20.9
USA-DOE, USA-NSF	275.8	85.2		190.7
<b>Total</b>	<b>1,001</b>	<b>415</b>	<b>173</b>	<b>586</b>