TOTEM RRB APRIL 2009 :

M&O BALANCE 2008

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M&O 2008 [RRB November '08] : Cat.A and Cat.B breakdown by funding agencies.

31-Oct-08

TOTEM Cat.A M&O 2008
Budget T299572
Balance Contrib. Cat.A = - 7 k

	CERN	INFN	Finland	Estonia	Prague	US NSF	KFKI
Expected	130	208	51	23	14	37	0
Allocated	130	208	51	23	14	37	10
Paid	130	208	51	23	14	20	10

TOTEM Cat.B M&O 2008
Budget T299570 + Institutes
Balance Contrib. Cat.B = + 57 k

	CERN	INFN	Finland	Estonia	Prague	US NSF	KFKI
Expected	77	100	18	1	5	16	0
Allocated	77	100	18	17	46	16	0
Paid	77	100	18	17	46	16	0

M&O 2008: Cat.A breakdown by operation & maintenance activities.

Expenditures and Balance book-closed at 28 Feb 2009 [FI dpt.].

	B	C	D	E	F	G	H
2	**TOTEM Category A M&O 2008**						
3	**Budget T299572 :**			**RRB**	**Out**	**Balance**	
4	Detector related costs	Type		89	-72	17	
5							
6	Magnet	A	O				
7		A	C				
8	Magnet controls	A	O				
9		A	C				
10	Magnet power supply	A	O				
11		A	C				
12	Gas systems	A	O	14	-7	7	
13		A	C	0		0	
14	Gas consumption	A	O	0		0	
15		A	C	14	-14	0	
16	Cooling systems	A	O	24	-23	1	
17		A	C	0		0	
18	Cooling fluids(above –50°C)	A	O	0		0	
19		A	C	4	-5	-1	
20	External cryogenics	A	O				
21		A	C				
22	Cryogenic fluids (below –50°C)	A	O				
23		A	C				
24	Moving/hydraulic systems	A	O	4	-3	1	
25		A	C	0		0	
26	Detector safety systems	A	O				
27		A	C				
28	Shutdown activities	A	O				
29		A	C				
30	General Technical support	A	O	21	-15	6	
31		A	C	8	-5	3	
32	UPS maintenance	A	O				
33		A	C				
34	Electronics pool rentals	A	O				
35		A	C				
36	Beam pipe & vacuum	A	O				
37		A	C				
38	Counting & control rooms	A	O				
39		A	C				

	B	C	D	E	F	G	H
40							
41	Secretariat	Type		31	-21	11	
42							
43	Secretarial assistance	A	O	24	-20	4	
44		A	C	0		0	
45	Economat	A	O	0		0	
46		A	C	3	-1	3	
47	Printing and publication	A	O	0		0	
48		A	C	4		4	
49							
50	Communications	Type		4	-1	3	
51							
52	GSM phones; on-call service	A	O	2	-1	1	
53		A	C	2	0	2	
54	Automatic call-back	A	O				
55		A	C				
56							
57	CORE Computing	Type		135	-111	24	
58							
59	Central computing environment	A	O	39	-39	0	
60		A	C	0		0	
61	User support	A	O	12	-5	7	
62		A	C	0		0	
63	Software process service	A	O	35	-32	3	
64		A	C	10		10	
65	Central production operations	A	O	30	-30	1	
66		A	C	0		0	
67	Hardware	A	O	0		0	
68		A	C	9	-6	3	
69							
70	On-line computing	Type		92	-90	2	
71							
72	System management	A	O	20	-22	-2	
73		A	C	0		0	
74	Data storage, (temporary on disk)	A	O	24	-21	3	
75		A	C	0		0	
76	Detector controls	A	O	48	-48	0	
77		A	C	0		0	
78	Computers/processors/LANs	A	O				
79		A	C				
80	Software licenses	A	O				
81		A	C				
82	Common desktop infrastructure	A	O				
83		A	C				
84							
85	Test beams, calibration facilities	Type		74	-54	20	
86							
87	General operation	A	O	29	-23	6	
88		A	C	0		0	
89	Common electronics	A	O				
90		A	C				
91	Electronics pool rentals	A	O	0		0	
92		A	C	30	-22	8	
93	Gas systems	A	O	3		3	
94		A	C	5	-1	4	
95	Gas consumption	A	O	0		0	
96		A	C	7	-7	0	
97	External cryogenics	A	O				
98		A	C				

	B	C	D	E	F	G	H
99							
100	Laboratory operations	Type		13	-9	4	
101							
102	Assembly areas, clean rooms	A	O	3	-1	2	
103		A	C	2		2	
104	Workshops	A	O	0		0	
105		A	C	2		2	
106	Laboratory instruments	A	O	0		0	
107		A	C	6	-8	-2	
108							
109	General services	Type		25	-24	2	
110							
111	Cooling & ventilation	A	O	1		1	
112		A	C	0		0	
113	Power distribution system	A	O				
114		A	C				
115	Heavy transport	A	O				
116		A	C				
117	Cranes	A	O				
118		A	C				
119	Cars	A	O	3		3	
120		A	C	0		0	
121	Survey	A	O	13	-13	0	
122		A	C	0		0	
123	Storage space	A	O				
124		A	C				
125	Common desktop infrastructure	A	O				
126		A	C				
127	External expert subsistence	A	O				
128		A	C				
129	Outreach	A	O	5	-9	-4	
130		A	C	3	-2	1	
131							
132	TOTAL without power			463	-381	82	
133	Power	A	O	0	0	0	
134		A	C	0	0	0	
135	GRAND TOTAL			463	-381	82	
136	Operation sub-items			354	-311	43	
137	Consumables sub-items			109	-71	38	
138							
139							
140	Carry-over from previous years					0	
141							
142	Balance contributions '08 Cat.A					-7	
143							
144	**TOTAL BALANCE CAT. A**					**75**	

Remarks:

2008 was the first year of Maintenance & Operation funding for TOTEM (which was entered into the RRB M&O standard loop at the end of 2007).

In facts the 2008 M&O budget was approved at the RRB in April 2008 and fundings from the funding agencies were received starting from mid-2008.

Consequently the book-closing at 28 February 2009 (in sync with FI dpt.) represents about 9 months of maintenance and operation expenditures for TOTEM.

The Cat.A data show a consistent balance with the figures reported by FI dpt. (within 1k precision as usual), taking into account the open commitments in the CET system.

During the last two months TOTEM has continued the foreseen Cat.A expenditures (related to the first year of M&O) and the remaining balance to date is of the order of 15 kCHF.

In the following weeks TOTEM will complete the 2008 Cat.A expenditures and will start exploiting the M&O allocations for 2009 Maintenance and Operation.

M&O 2008: Cat.B breakdown by operation & maintenance activities. Expenditures and Balance book-closed at 28 Feb 2009.

TOTEM Category B M&O 2008

Budget T299570 :			**RRB**	**Out**	**Balance**
Detector related costs	Type		165	-210	-45
RP installation/removal	B	O	12	-26	-14
	B	C			
RP maintenance/repair silicon	B	O			
	B	C	16	-16	0
RP maintenance electronics	B	O			
	B	C	14	-14	0
RP mechanics/movement/vacuum	B	O			
	B	C	18	-25	-7
RP power supplies and cables	B	O	6	-14 -5	-13
	B	C	2	- 7 -5	-10
T1 installation/removal	B	O	15	-15	0
	B	C			
T1 maintenance/repair CSC	B	O			
	B	C	12	-12	0
T1 maintenance electronics	B	O			
	B	C	12	-12	0
T1 mechanics	B	O			
	B	C	8	-8	0
T1 power supplies and cables	B	O	4	-4	0
	B	C	4	-4	0
T2 installation/removal	B	O	8	-6	2
	B	C			
T2 maintenance/repair GEM	B	O			
	B	C	12	0	12
T2 maintenance electronics	B	O			
	B	C	12	-12	0
T2 mechanics	B	O			
	B	C	4	-18	-14
T2 power supplies and cables	B	O	3	-3	0
	B	C	3	-3	0
On-line computing	Type		50	-50	0
Local DAQ (IP5), H8, lab system	B	O	18	-18	0
	B	C	32	-32	0
General services	Type		2	-2	0
Cleaning	B	O	2	-2	0
	B	C			
GRAND TOTAL			217	-262	-45
Operation sub-items			68	-93	-25
Consumables sub-items			149	-168	-19

Carry-over from previous years	0
Balance contributions '08 Cat.B	57
TOTAL BALANCE CAT. B	**12**

Remarks:

Significant extra-contributions have been allocated by some institutes for 2008 Cat.B maintenance and operation.

This allowed the collaboration to cope with the required expenditures, including for unforeseen issues.

The remaining balance to date is of the order of 10kCHF.

In the following weeks TOTEM will complete the 2008 Cat.B expenditures and will start exploiting the M&O allocations for 2009 Maintenance and Operation.

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TOTEM M&O TOTAL BUDGET 2009

[Approved at RRB November `08]

A: TOT DETECTORS RELATED COSTS =	**147K**
A: TOT SECRETARIAT =	**31K**
A: TOT COMMUNICATIONS =	**4K**
A: TOT CORE COMPUTING =	**93K**
A: TOT ONLINE COMPUTING =	**96K**
A: TOT TESTBEAMS, CALIBRATION =	**40K**
A: TOT LABORATORY OPERATIONS =	**13K**
A: TOT GENERAL SERVICES =	**25K**
A: TOTAL =	**449K**

B: TOT DETECTORS RELATED COSTS =	**195K**
B: TOT ONLINE COMPUTING =	**50K**
B: TOT GENERAL SERVICES =	**2K**
B: TOTAL =	**247K**

TOTEM M&O TOTAL = 696K

TOTEM M&O 2009 BUDGET BY FUNDING AGENCIES

[Approved at RRB November `08]

Table 1: Cat. A cost by Funding Agencies (ref. Appendix 1 formula)

CERN	INFN	Finland	Estonia	Prague	USNSF	KFKI	TOT
94	207	54	22	22	36	14	449

The amounts in Table 1 have been invoiced to the Funding Agencies and were in most cases already fully allocated. CERN's contribution has been received. Other payments are expected soon.

Table 2: Cat. B cost by Funding Agencies (ref. Appendix 2 formula)

CERN	INFN	Finland	Estonia	Prague	USNSF	KFKI	TOT
81	120	18	2	5	18	3	247

Table 3: Cat. A+B cost by Funding Agencies

CERN	INFN	Finland	Estonia	Prague	USNSF	KFKI	TOT
175	327	72	24	27	54	17	696

Appendix 1.

Category A: M&O expenses that are shared by the entire collaboration.

Detector Operation:
The sharing is based on the proportion of scientific staff in the collaboration holding PhD or equivalent qualifactions who are entitled to be named as authors of scientific publications of the collaboration.

2009:

CERN	INFN	Finland	Estonia	Prague	US NSF	KFKI
13 / 61	28 / 61	7 / 61	3 / 61	3 / 61	5 / 61	2 / 61
21%	**46%**	**12%**	**5%**	**5%**	**8%**	**3%**

These data were based on the relevant TOTEM authors list agreed with the management of the participating institutes and the Scrutiny Group for 2009.

Appendix 2.

Category B: M&O expenses that are borne by part of the collaboration, i.e. by single institutes or groups of institutes, and their Funding Agencies. The headings in this category are defined with reference to the distribution of responsibilities amongst the various institutes for the construction of the detector.

Detector maintenance and repairs:

The sharing is based on the proportions of the original investment (Hungary took over 80k from US on RP electronics).

SUB-DETECTOR	Responsibilities						
	CERN	**INFN**	**Helsinki**	**Estonia**	**Prague**	**NSF**	**KFKI**
Roman Pots							
Mechanics + Installation	**85%** = 25k				**15%** = 5k		
Si Detectors	**73%** = 12k					**27%** = 4k	
Electronics	**50%** = 16k			**5%** = 2k		**35%** = 11k	**10%** = 3k
T1 Detector							
CSC Detectors		**100%** = 12k					
Electronics		**90%** = 27k				**10%** = 3k	
Supports + Services	**90%** = 22k	**10%** = 3k					
T2 Detector							
GEM Detectors			**100%** = 12k				
Electronics		**100%** = 28k					
Supports + Services	**50%** = 6k		**50%** = 6k				
DAQ							
Read-out Column		**100%** = 50k					

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TOTEM M&O BUDGET REQUEST 2010 :

[Preliminary]

- **For the first time TOTEM can base its M&O budget request onto the experience of a previous year's expenditures profile (2008).**

- **This allows us to further tune some of the 2010 projections made with the Scrutiny Group last year (which already take properly into account several optimizations thanks to various iterations with the Scrutiny Group and/or its referees).**

- **In addition, for Cat. A, TOTEM will review the relevant list of authors with the participating institutes and the Scrutiny Group, for possible updates with respect to 2009.**

- **For Cat. B, TOTEM would propose to keep unchanged the matrix approved in 2009.**

- **A total M&O budget envelope similar to 2008 and 2009 is expected for the year 2010. Savings are going to be maximized wherever possible.**

TOTEM M&O BUDGET REQUEST 2010

[Preliminary]

Breakdown by maintenance and operation activity:

	Projected	Requested
A: TOT DETECTORS RELATED COSTS	**136K**	**136K**
A: TOT SECRETARIAT	**39K**	**37K**
A: TOT COMMUNICATIONS	**4K**	**2K**
A: TOT CORE COMPUTING	**92K**	**92K**
A: TOT ONLINE COMPUTING	**84K**	**96K**
A: TOT TESTBEAMS, CALIBRATION	**30K**	**20K**
A: TOT LABORATORY OPERATIONS	**13K**	**13K**
A: TOT GENERAL SERVICES	**30K**	**30K**
A: TOTAL =		**426K**
B: TOT DETECTORS RELATED COSTS =		**195K**
B: TOT ONLINE COMPUTING =		**50K**
B: TOT GENERAL SERVICES =		**2K**
B: TOTAL =		**247K**

TOTEM M&O TOTAL = 673K

Scrutiny process for the budget request 2010:

- **TOTEM collaborators are preparing the detailed items list and related justifications for the budget request 2010.**

- **The RRB Scrutiny Group will be provided with the related tables in the standard template at the Scrutiny Group meeting scheduled on 5 May 2009.**

- **TOTEM looks forward to collaborating with the Scrutiny Group and its referees during summer in order to improve and finalize the budget request for 2010.**

Note on construction budget

- The construction budget does not show variations with respect to the situation presented to the RRB in November 2008.
- The construction Common Fund expenditures were completed in 2008 and the relative account was balanced: now it will be closed as agreed by FI department.
- The committments to complete the construction "project" expenditures are being paid via the Transit account, according to the projections and figures shown at the RRB November '08 meeting.
- We are grateful to the Czech.Republic funding agency for the additional contribution received for the RomanPots construction and electronics.
- TOTEM is looking forward to finalizing with CERN the income related to the memoranda dated 10 November 2008, which were discussed since the previous RRB meeting: the availability of the corresponding money plays a crucial role vis-a-vis of the cost-to-completion of the project.
- TOTEM also looks forward to presenting to the RRB in Autumn the final financial figures upon completion of the experiment construction, which still includes some final commitments of the TOTEM collaborators.