

TOTEM RRB OCTOBER 2009 :

M&O STATUS 2009

NOTES ON CONSTRUCTION

M&O BUDGET REQUEST 2010

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RRB M&O 2009 : Cat.A and Cat.B breakdown by funding agencies [book-closing 31 Aug 09]

								30-set-09
TOTEM Cat.A M&O 2009								
Budget T299572								
<i>Balance Contrib. Cat.A = - 265 k</i>		CERN	INFN	Finland	Estonia	Prague	US NSF	KFKI
	Expected	94	207	54	22	22	36	14
	Allocated	94	207	54	6	22	53	14
	Paid	94	0	54	0	22	0	14
TOTEM Cat.B M&O 2009								
Budget T299570 + Institutes								
<i>Balance Contrib. Cat.B = + 60 k</i>		CERN	INFN	Finland	Estonia	Prague	US NSF	KFKI
	Expected	81	120	18	2	5	18	3
	Allocated	81	120	18	2	65	18	3
	Paid	81	120	18	2	65	18	3

* **INFN: contribution received after book-closing 31 Aug 09**

* **US NSF: 17k outstanding from 2008**

* **Estonia: 16k received in advance last year**

M&O 2009: Cat.A breakdown by operation & maintenance activities.**Expenditures and Balance book-closed at 31 Aug 2009 [FI dpt.].**

TOTEM Category A M&O 2009					
Budget T299572 :			RRB	Out	Balance
Detector related costs	Type		147	-16	131
Magnet	A	O			
	A	C			
Magnet controls	A	O			
	A	C			
Magnet power supply	A	O			
	A	C			
Gas systems	A	O	14	0	14
	A	C	0		0
Gas consumption	A	O	0		0
	A	C	14	0	14
Cooling systems	A	O	24	0	24
	A	C	0		0
Cooling fluids(above -50°C)	A	O	0		0
	A	C	27	0	27
External cryogenics	A	O			
	A	C			
Cryogenic fluids (below -50°C)	A	O			
	A	C			
Moving/hydraulic systems	A	O	9	0	9
	A	C	0		0
Detector safety systems	A	O	11	0	11
	A	C	8	0	8
Shutdown activities	A	O			
	A	C			
General Technical support	A	O	21	-5	17
	A	C	10	-1	9
UPS maintenance	A	O			
	A	C			
Electronics pool rentals	A	O	0		0
	A	C	6	-2	4
Beam pipe & vacuum	A	O			
	A	C			
Counting & control rooms	A	O	0		0
	A	C	3	-8	-5

Secretariat	Type		31	-18	13
Secretarial assistance	A	O	24	-17	7
	A	C	0		0
Economat	A	O	0		0
	A	C	3	-1	2
Printing and publication	A	O	0		0
	A	C	4	0	4
Communications	Type		4	0	4
GSM phones; on-call service	A	O	2	0	2
	A	C	2	0	2
Automatic call-back	A	O			
	A	C			
CORE Computing	Type		93	-66	27
Central computing environment	A	O	36	-25	11
	A	C	0		0
User support	A	O	2	0	2
	A	C	0		0
Software process service	A	O	25	-24	1
	A	C	0		0
Central production operations	A	O	30	-17	13
	A	C	0		0
Hardware	A	O			
	A	C			
On-line computing	Type		96	-73	23
System management	A	O	24	-26	-2
	A	C	0		0
Data storage, (temporary on disk)	A	O	24	-27	-3
	A	C	0		0
Detector controls	A	O	48	-21	27
	A	C	0		0
Computers/processors/LANs	A	O			
	A	C			
Software licenses	A	O			
	A	C			
Common desktop infrastructure	A	O			
	A	C			
Test beams, calibration facilities	Type		40	-23	17
General operation	A	O	15	-9	6
	A	C	0		0
Common electronics	A	O			
	A	C			
Electronics pool rentals	A	O	0		0
	A	C	10	-12	-2
Gas systems	A	O	3	0	3
	A	C	5	0	5
Gas consumption	A	O	0		0
	A	C	7	-2	5
External cryogenics	A	O			
	A	C			

Laboratory operations	Type		13	-1	12
Assembly areas, clean rooms	A	O	3	0	3
	A	C	2	0	2
Workshops	A	O	0		0
	A	C	2	0	2
Laboratory instruments	A	O	0		0
	A	C	6	-1	5
General services	Type		25	-6	19
Cooling & ventilation	A	O			
	A	C			
Power distribution system	A	O			
	A	C			
Heavy transport	A	O			
	A	C			
Cranes	A	O			
	A	C			
Cars	A	O	0		0
	A	C	3	0	3
Survey	A	O	13	0	13
	A	C	0		0
Storage space	A	O			
	A	C			
Common desktop infrastructure	A	O			
	A	C			
External expert subsistence	A	O			
	A	C			
Outreach	A	O	8	-6	2
	A	C	1	0	1
TOTAL without power			449	-203	246
Power	A	O	0	0	0
	A	C	0	0	0
GRAND TOTAL			449	-203	246
Operation sub-items			336	-176	160
Consumables sub-items			113	-27	86
Carry-over from previous years					75
Balance contributions '09 Cat.A					-265
TOTAL BALANCE CAT. A					56

Remarks on Cat.A:

In the first months of 2009 TOTEM completed the expenditures related to the 2008 budget (since the 2008 fundings were allocated and received starting from mid-2008).

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

With the expenditures in September the budget was practically exhausted, but it was refurbished by the INFN contribution (about 200k).

Commitments up to the end of the year include about 120k of manpower and over 50k of cooling, in addition to regular monthly expenditures.

Our projections indicate TOTEM will be on budget for 2009 Cat.A.

**M&O 2009: Cat.B breakdown by operation & maintenance activities.
Expenditures and Balance book-closed at 31 Aug 2009.**

TOTEM Category B M&O 2009					
Budget T299570 :			RRB	Out	Balance
Detector related costs	Type		195	-203	-8
RP installation/removal	B	O	12	-23	-11
	B	C			
RP maintenance/repair silicon	B	O			
	B	C	16	-16	0
RP maintenance electronics	B	O			
	B	C	14	-11	3
RP mechanics/movement/vacuum	B	O			
	B	C	18	-18	0
RP power supplies and cables	B	O	11	-11	0
	B	C	7	-7	0
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	9	-9	0
	B	C	9	-9	0
T2 installation/removal	B	O	8	-8	0
	B	C			
T2 maintenance/repair GEM	B	O			
	B	C	12	-12	0
T2 maintenance electronics	B	O			
	B	C	12	-12	0
T2 mechanics	B	O			
	B	C	4	-4	0
T2 power supplies and cables	B	O	8	-8	0
	B	C	8	-8	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			247	-255	-8
Operation sub-items			83	-94	-11
Consumables sub-items			164	-161	3
Carry-over from previous years					12
Balance contributions '09 Cat.B					60
TOTAL BALANCE CAT. B					64

Remarks on Cat.B:

The data show that the 2009 Cat.B expenditures are in line with the requested contributions.

Significant extra-contributions have been allocated by Czech Rep. for 2009 Cat.B maintenance and operation (including for cooling).

This grants to the collaboration the contingency to cope with additional issues for the next critical months.

Our projections indicate TOTEM will be on budget for 2009 Cat.B.

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Notes on construction budget

- The construction budget expenditures progress according to the projections and figures presented to the RRB in November 2008 and April 2009.
- The commitments to complete the construction “project” expenditures are being paid via the general “Transit” account and via the CERN group budget for the items related to the remaining CERN commitments.
- TOTEM is grateful to CERN for its decisive contribution after the April RRB to fulfill the needs and requests formalized in the memoranda of November 2008.
- We are grateful to the Czech.Republic funding agency for their additional contribution granted for the RomanPots construction and electronics in 2009.
- TOTEM is now approaching the completion of the experiment construction expenditures. The final figures will then be produced and presented to the RRB.

On request of the Scrutiny Group, TOTEM has prepared and updated an Operational Model paper to document its transition from the construction and commissioning phase to the Operation and Maintenance mode.

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TOTEM M&O BUDGET REQUEST 2010 :

- **The 2010 budget request could benefit from the experience of the expenditures profile of 2008 (and partly 2009) and is derived from extremely fruitful iterations with the Scrutiny Group and its referees.**
- **For Cat. A, TOTEM has reviewed and updated the relevant list of authors with the management of the participating institutes.**
- **For Cat. B, TOTEM has kept unchanged the matrix approved for 2009.**
- **A total M&O budget envelope similar to 2008 and 2009 is requested for the year 2010. Savings have been optimized wherever possible.**

TOTEM M&O BUDGET REQUEST 2010

	Projected	Requested
A: TOT DETECTORS RELATED COSTS	136K	152K
A: TOT SECRETARIAT	39K	43K
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
<u>A: TOTAL =</u>		<u>448K</u>
B: TOT DETECTORS RELATED COSTS =		195K
B: TOT ONLINE COMPUTING =		50K
B: TOT GENERAL SERVICES =		2K
<u>B: TOTAL =</u>		<u>247K</u>

TOTEM M&O TOTAL = 695K

Included issues:

- > Long-term maintenance caen-wiener crates/lvps at 1.5kCHF x 4 / y
- > Shutdown activities (O and C) and buffer zone paid via CMS
- > Increase of secretariat and control room equipment
- > Obligatory electrician courses
- > Communication contracts and testbeams (savings)
- > Authors list '10 (affects only internal sharing Cat.A)

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 qualifications who are entitled to be named as authors of scientific publications of the collaboration.

2010:

CERN	INFN	Finland	Estonia	Prague	US NSF	KFKI
11 / 53	24 / 53	6 / 53	2 / 53	3 / 53	5 / 53	2 / 53
21%	45%	11%	4%	6%	9%	4%

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						KFKI
	CERN	INFN	Helsinki	Estonia	Prague	NSF	
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					