

# **TOTEM RRB OCTOBER 2012 :**

**M&O STATUS 2012**

**M&O BUDGET REQUEST 2013**

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# RRB M&O 2012 : Cat.A and Cat.B contributions by funding agencies [book-closing 31 Aug 2012]

31/08/2012

TOTEM Cat.A M&O 2012								
Budget T299572								
Balance Contrib. Cat.A = + 14 k		CERN	INFN	Finland	Estonia	Prague	US CWRU	KFKI
Expected'12	106	198	48	18	26	26	18	
TotToBeAllocated	106	198	48	18	26	22 + 26	9 + 18 + 18	
Paid'12	106	198	48	18 + 18	26	22	18	

TOTEM Cat.B M&O 2012								
Budget T299570 + Institutes								
Balance Contrib. Cat.B = + 0 k		CERN	INFN	Finland	Estonia	Prague	US CWRU	KFKI
Expected'12	81	120	18	2	5	18	3	
TotToBeAllocated	81	120	18	2	5	18	3	
Paid'12	81	120	18	2	5	18	3	

- \* Hungary: 18k paid for 2012 (9k+18k outstanding for 2010+2011).
- US CWRU: 22k paid to complete 2011 (26k outstanding for 2012).
- Estonia: already paid also for 2013.

**RRB M&O 2012 : Cat.A and Cat.B contributions by funding agencies [updated to 30 Oct 2012]**

30/10/2012

TOTEM Cat.A M&O 2012								
Budget T299572								
Balance Contrib. Cat.A = + 23 k		CERN	INFN	Finland	Estonia	Prague	US CWRU	KFKI
Expected'12	106	198	48	18	26	26	18	
TotToBeAllocated	106	198	48	18	26	22 + 26	9 + 18 + 18	
Paid'12	106	198	48	18 + 18	26	22	9 + 18	

TOTEM Cat.B M&O 2012								
Budget T299570 + Institutes								
Balance Contrib. Cat.B = + 0 k		CERN	INFN	Finland	Estonia	Prague	US CWRU	KFKI
Expected'12	81	120	18	2	5	18	3	
TotToBeAllocated	81	120	18	2	5	18	3	
Paid'12	81	120	18	2	5	18	3	

\* **Hungary: 9k paid to complete 2010 (18k outstanding for 2011 already allocated will be paid next year).**  
**US CWRU: (26k outstanding for 2012 shall be recovered in the future).**

**M&O 2012: Cat.A expenditures summary (operation & consumables).****Expenditures and Balance book-closed at 31 Aug 2012.**

	B	C	D	E	F	G
2	TOTEM Category A M&O 2012					
3	<b>Budget T299572 :</b>	<b>RRB Out Balance</b>				
	B	C	D	E	F	G
137	GRAND TOTAL			440	-261	179
138	Operation sub-items			354		
139	Consumables sub-items			86		
140						
141						
142	Carry-over from previous years					-9
143						
144	Balance contributions '12 Cat.A					14
145						
146	Credits - Debits					0
147						
148	<b>TOTAL BALANCE CAT. A</b>					<b>184</b>

**M&O 2012: Cat.B expenditures summary (operation & consumables).****Expenditures and Balance book-closed at 31 Aug 2012.**

	B	C	D	E	F	G
2	TOTEM Category B M&O 2012					
3	<b>Budget T299570 + Institutes :</b>	<b>RRB Out Balance</b>				
	B	C	D	E	F	G
47	GRAND TOTAL			247	-247	0
48	Operation sub-items			83	-83	0
49	Consumables sub-items			164	-164	0
50						
51						
52	Carry-over from previous years					2
53						
54	Balance contributions '12 Cat.B					0
55						
56	<b>TOTAL BALANCE CAT. B</b>					<b>2</b>

## **M&O STATUS 2012 - SUMMARY**

### **BOOK-CLOSING 31 Aug [FI Dpt.]**

- **TOTEM figures are consistent with the data presented by FI Dpt. within 1kCHF precision.**
- **Projections to the end of the year indicate no major overspending to be expected.**
- **Likely significant HR-related commitment will be managed by December (although possible that actual transaction will partially shift into next year).**

# **TOTEM RRB OCTOBER 2012 :**

## **M&O STATUS 2012**

## **>>> M&O BUDGET REQUEST 2013**

## TOTEM M&O BUDGET REQUEST 2013

A total M&O budget envelope lower than 2012 is requested for the year 2013, according to the table of projections done with the SG for the years of LHC shutdown (LS1).

	Official 2012	Request 2013
A: TOT DETECTORS RELATED COSTS	142K	129K
A: TOT SECRETARIAT	44K	44K
A: TOT COMMUNICATIONS	3K	3K
A: TOT CORE COMPUTING	92K	92K
A: TOT ONLINE COMPUTING	96K	78K
A: TOT TESTBEAMS, CALIBRATION	20K	33K
A: TOT LABORATORY OPERATIONS	13K	13K
A: TOT GENERAL SERVICES	30K	21K
<u>A: TOTAL =</u>	<u>440K</u>	<u>413K</u>

It is proposed to maintain const Cat.B contributions, as foreseen in the projections.

B: TOTAL = 247K



**Maintenance & Operation Cat. A:**

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

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.

**2013:**

	<b>CERN</b>	<b>INFN</b>	<b>Finland</b>	<b>Estonia</b>	<b>Prague</b>	<b>US CWRU</b>	<b>KFKI</b>
	13 / 52	24 / 52	6 / 52	2 / 52	3 / 52	2 / 52	2 / 52
	25%	46%	11%	4%	6%	4%	4%
<b>kCHF</b>	<b>103</b>	<b>190</b>	<b>45</b>	<b>17</b>	<b>24</b>	<b>17</b>	<b>17</b>

## Maintenance & Operation Cat. 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.

The sharing is based on the proportions of the original investment.

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

## CONCLUSIONS

- TOTEM has measured and has published / is publishing the pp elastic, inelastic and total cross-sections (with 2-3% precision) at  $\sqrt{s} = 7$  & 8 TeV with luminosity-independent or  $\rho$ -independent methods.
- TOTEM published the charged particle pseudo-rapidity density distribution for  $5.3 < \eta < 6.5$  at  $\sqrt{s} = 7$  TeV.
- TOTEM has taken data in special runs with  $\beta^* = 1\text{km}$ , reaching the range of  $|t| \sim 6 \cdot 10^{-4} \text{ GeV}^2$  to study the Coulomb-nuclear interference region.
- TOTEM and CMS have taken joint data in special runs with  $\beta^* = 90\text{m}$  exchanging triggers on di-jets and on RPs protons' coincidences. Common mini-DSTs and analysis tools have been developed and are operational.

## *Acknowledgements*

- TOTEM is grateful to the relevant LHC teams, to the CMS collaboration, and to the LPC coordination for their continuous support.
  
- TOTEM is grateful to the RRB, LHCC, Funding Agencies and Scrutiny Group, which helped the collaboration to produce these physics results, and is looking forward to their re-iterated support to continue its physics programme at the LHC.