

TOTEM RRB APRIL 2010 :

M&O BOOK-CLOSING 2009

M&O STATUS 2010

REPORT ON CONSTRUCTION

M&O 2011 - PRELIMINARY

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

31/Dec/2009

| TOTEM Cat.A M&O 2009 | | | CERN | INFN | Finland | Estonia | Prague | US NSF | KFKI |
|--|-------------------------|--|-----------|------------|-----------|-----------|-----------|-----------|-----------|
| Budget T299572 | | | | | | | | | |
| <i>Balance Contrib.09 Cat.A = - 58 k</i> | | | | | | | | | |
| | Expected09 | | 94 | 207 | 54 | 22 | 22 | 36 | 14 |
| | TotToBeAllocated | | 94 | 207 | 54 | 6 | 22 | 53 | 14 |
| | Paid | | 94 | 207 | 54 | 0 | 22 | 0 | 14 |

| TOTEM Cat.B M&O 2009 | | | CERN | INFN | Finland | Estonia | Prague | US NSF | KFKI |
|--|-------------------------|--|-----------|------------|-----------|----------|-----------|-----------|----------|
| Budget T299570 + Institutes | | | | | | | | | |
| <i>Balance Contrib.09 Cat.B = + 60 k</i> | | | | | | | | | |
| | Expected09 | | 81 | 120 | 18 | 2 | 5 | 18 | 3 |
| | TotToBeAllocated | | 81 | 120 | 18 | 2 | 5 | 18 | 3 |
| | Paid | | 81 | 120 | 18 | 2 | 65 | 18 | 3 |

* US NSF: 17k outstanding from 2008 and 36k outstanding from 2009

* Estonia: 6k not invoiced in 2009, added to invoice 2010

M&O 2009: Cat.A expenditures summary (operation & consumables).**Expenditures and Balance book-closed at 31 Dec 2009.**

| | B | C | D | E | F | G |
|-----|---------------------------------|---|---|------------|------------|----------------|
| 2 | TOTEM Category A M&O 2009 | | | | | |
| 3 | Budget T299572 : | | | | | |
| | | | | RRB | Out | Balance |
| | B | C | D | E | F | G |
| 135 | GRAND TOTAL | | | 449 | -410 | 39 |
| 136 | Operation sub-items | | | 336 | -330 | 6 |
| 137 | Consumables sub-items | | | 113 | -80 | 33 |
| 138 | | | | | | |
| 139 | | | | | | |
| 140 | Carry-over from previous years | | | | | 75 |
| 141 | | | | | | |
| 142 | Balance contributions '09 Cat.A | | | | | -58 |
| 143 | | | | | | |
| 144 | Credits - Debits | | | | | -50 |
| 145 | | | | | | |
| 146 | TOTAL BALANCE CAT. A | | | | | 6 |

M&O 2009: Cat.B expenditures summary (operation & consumables).**Expenditures and Balance book-closed at 31 Dec 2009.**

| | | | | | | |
|---------------------------|---------------------------------|---|---|------------|------------|----------------|
| TOTEM Category B M&O 2009 | | | | | | |
| Budget T299570 : | | | | | | |
| | | | | RRB | Out | Balance |
| | B | C | D | E | F | G |
| | GRAND TOTAL | | | 247 | -259 | -12 |
| | Operation sub-items | | | 83 | -98 | -15 |
| | Consumables sub-items | | | 164 | -161 | 3 |
| | Carry-over from previous years | | | | | 12 |
| | Balance contributions '09 Cat.B | | | | | 60 |
| | TOTAL BALANCE CAT. B | | | | | 60 |

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M&O STATUS 2010**BOOK-CLOSING 28 Feb [FI Dpt.]**

- **TOTEM figures fit the data presented by FI Dpt. within 1kCHF precision.**
- **CERN paid already the 2010 contribution.**
- **Finland is transferring the 2010 contribution.**
- **Invoices have been sent to all the collaborating institutes.**
- **NSF/CWRU should be transferring soon the money to cover the agreed shares of 2008, 2009 contributions.**

Expenditures in 2010 are proceeding to a higher rate than foreseen.

This is due to the works for getting TOTEM ready for the LHC start-up and the current operation, including repairs, improvements/deviations of connections, additional manpower required on the site, replacement of components, etc.

Note:

The carry over '09 shown in the FI Dpt. figures is due to the fact that CERN's 2010 contribution was counted as accredited in Dec'09 by CET.

M&O Cat.A Status Contributions 2010 [FI Dpt. 28 Feb 2010]

28-feb-10

| TOTEM Cat.A M&O 2010 | | | | | | | | |
|--------------------------|------------------------|-----------|------------|-----------|-----------|-----------|-----------|-----------|
| Budget T299572 | | | | | | | | |
| Balance Contrib.09 Cat.A | | CERN | INFN | Finland | Estonia | Prague | US NSF | KFKI |
| | Expected'10 | 94 | 202 | 49 | 18 | 27 | 40 | 18 |
| | ToToBeAllocated | 94 | 202 | 49 | 24 | 27 | 93 | 18 |
| | Paid | 94 | 0 | 0 | 0 | 0 | 0 | 0 |

* **US NSF: 53k outstanding from 2008 + 2009**

* **Estonia: 6k from 2009 added to invoice 2010**

* **NSF situation explained by Karsten Eggert**

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Report on construction budget

- The construction budget expenditures have progressed according to the projections and figures presented to the RRB in April 2009, as anticipated at the RRB October 2009 meeting.
- The commitments to complete the construction “project” expenditures have been paid and are being paid via the general “Transit” account and via the CERN group budget for the items related to the remaining CERN commitments.
- The next slide shows the Dec ’09 book-closing of the Financial Matrix approved by the TOTEM Collaboration Board.
- It is notable that the US CWRU construction contribution has progressed getting close to the MoU and projected figures.
- The additional contributions ’09 of CERN and Czech.Rep. have also been taken into account where relevant in the Financial Matrix.
- TOTEM will continue to finalize the construction figures and to give the necessary updates to the RRB.

TOTEM - 15/12/2009 - Financial Matrix

| TOTEM | TOTAL | | | CERN | | | INFN | | | Finland | | | Brunel | | | Estonia | | | Prague | | | NSF | | | Hungary | | | C.Projects | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|-----------|----------|----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|----------|-----------|-----------|------------|------------|------------|----|
| | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | Proj | Paid | MoU | In | Out | |
| 1. ROMAN POTS | 2476 | 3457 | 3361 | 1702 | 2494 | 2486 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 Roman Pot mechanics | 651 | 865 | 845 | 456 | 618 | 598 | | | | | | | | | | | | 195 | 247 | 247 | | | | | | | | | | | |
| 1.2 Movement | 204 | 243 | 243 | 204 | 243 | 243 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 Beam position monitor | 171 | 122 | 122 | 169 | 120 | 120 | | | | | | | | | | | | 2 | 2 | 2 | | | | | | | | | | | |
| 1.4 Detector mechanics | 133 | 210 | 210 | 133 | 210 | 210 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.5 Silicon sensors | 228 | 299 | 299 | 110 | 236 | 299 | | | | | | 55 | 0 | 0 | | | | | | | 63 | 63 | 0 | | | | | | | | |
| 1.6 Cooling | 209 | 319 | 319 | 209 | 319 | 319 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.7 Electronics | 554 | 830 | 803 | 175 | 260 | 258 | | | | | | | | | 40 | 42 | 42 | 0 | 187 | 187 | 324 | 244 | 219 | 0 | 80 | 80 | 15 | 17 | 17 | | |
| 1.8 Power supplies and cables* | 287 | 459 | 429 | 206 | 378 | 348 | 48 | 48 | 48 | 13 | 13 | 13 | | | 2 | 2 | 2 | 5 | 5 | 5 | 13 | 13 | 13 | | | | | | | | |
| 1.9 Miscellaneous | 40 | 110 | 91 | 40 | 110 | 91 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. T1-CSC | 1820 | 1742 | 1706 | 441 | 361 | 324 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 70 CSC Detectors | 627 | 640 | 640 | | | | 627 | 640 | 640 | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 Electronics | 666 | 567 | 566 | 73 | 66 | 65 | 509 | 416 | 416 | | | | | | | | | | | | 70 | 70 | 70 | | | | | 15 | 15 | 15 | |
| 2.3 Power supplies and cables | 159 | 201 | 201 | 119 | 81 | 81 | 40 | 120 | 120 | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 Supports and services | 369 | 334 | 299 | 249 | 214 | 178 | 50 | 50 | 50 | | | | | | | | | | | | | | | | | | | 70 | 70 | 71 | |
| 3. T2-GEM | 1303 | 1521 | 1414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 50 GEM Detectors | 434 | 515 | 471 | | | | | | | 434 | 515 | 471 | | | | | | | | | | | | | | | | | | | |
| 3.2 Electronics | 533 | 570 | 560 | | | | 518 | 555 | 546 | | | | | | | | | | | | | | | | | | | 15 | 15 | 14 | |
| 3.3 Power supplies and cables | 138 | 172 | 167 | | | | 138 | 172 | 167 | | | | | | | | | | | | | | | | | | | | | | |
| 3.4 Supports and services | 199 | 264 | 216 | | | | | | | 90 | 155 | 106 | | | | | | | | | | | | | | | | 109 | 109 | 110 | |
| 4. TEST SETUP | 150 | 150 | 150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 Cables, power supplies & infrastr. | 40 | 40 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | 40 | 40 | 40 |
| 4.2 Electronics DAQ and computing | 70 | 70 | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | 70 | 70 | 70 |
| 4.3 Pool rental & Consumables | 40 | 40 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | 40 | 40 | 40 |
| 5. DAQ EVENT BUILDER | 720 | 723 | 222 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.1 Readout column | 170 | 137 | 137 | | | | 170 | 137 | 137 | | | | | | | | | | | | | | | | | | | | | | |
| 5.2 Link into CMS DAQ** | 500 | 500 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.3 Online PC & storage | 50 | 86 | 85 | | | | 33 | 69 | 69 | | | | | | | | | | | | | | | | | | | | 17 | 17 | 16 |
| TOTAL TOTEM | 6470 | 7593 | 6853 | 2142 | 2855 | 2810 | 2133 | 2207 | 2193 | 537 | 683 | 590 | 55 | 0 | 0 | 42 | 44 | 44 | 202 | 441 | 441 | 470 | 390 | 302 | 0 | 80 | 80 | 390 | 393 | 393 | |

* Item 1.8 includes the redistributed Polish funds. The status of the compensation funds for those 127k is shown in the Credits sheet.

** Item 5.2 is foreseen for linking to CMS DAQ. It is not included in current CERN MoU and Projection columns, but it is included in the TOTAL MoU and Projection columns.

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TOTEM M&O BUDGET REQUEST 2011 - Preliminary

A total M&O budget envelope similar to 2010 is requested for the year 2011, according to the table of projections done with the SG during the previous year(s).

Savings on Cat.A have been optimized wherever possible based on last years' experience. Detailed issues will be iterated with the Scrutiny Group as usual.

| | Official 2010 | Projection 2011 | Request 2011 |
|--------------------------------|--------------------|--------------------|--------------------|
| A: TOT DETECTORS RELATED COSTS | 152K | 142K | 142K |
| A: TOT SECRETARIAT | 43K | 45K | 44K |
| A: TOT COMMUNICATIONS | 2K | 4K | 3K |
| A: TOT CORE COMPUTING | 92K | 92K | 92K |
| A: TOT ONLINE COMPUTING | 96K | 84K | 96K |
| A: TOT TESTBEAMS, CALIBRATION | 20K | 30K | 20K |
| A: TOT LABORATORY OPERATIONS | 13K | 13K | 13K |
| A: TOT GENERAL SERVICES | 30K | 30K | 30K |
| <u>A: TOTAL =</u> | <u>448K</u> | <u>440K</u> | <u>440K</u> |

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

B: TOTAL = **247K**