

Scrutiny Group Report to LHC Resources Review Board

22 October 2007

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The University of Manchester

Membership of the Scrutiny Group for 2007

Giovanni Batignani	(INFN Pisa)
Martyn Davenport	(CERN; replaced Edo Sbrissa)
Jasper Kirkby	(CERN)
George Lafferty	(Manchester, Chair)
Joachim Mnich	(DESY)
Sascha Schmelling	(CERN)
Emmanuel Tsesmelis	(CERN)
Vera Luth	(SLAC)
Marc Winter	(IRES Strasbourg; unable to participate)
A Vacancy	(Small state)

Scientific Secretary: Chris Jones

Role of the Scrutiny Group

- It will assist the RRB by analysing critically the collaborations' M&O reports and estimates, refine the Category A estimates in consultation with the collaborations and advise the RRB ...
- It will operate during the summer, with the aim of agreeing the estimates for Category A for the following year
- It will also make critical comment on the arrangements for Category B costs
- This year ATLAS Cat B M&O was subjected to a higher level of scrutiny than usual, as requested by the April RRB

Cat A M&O spending overview for 2006

Experiment	Budgeted costs	Actual costs
ALICE	kCHF 2733	2531
ATLAS	8765	9309
CMS	6952	6890
LHCb	1478	1463

Summary of Cat A M&O requests for 2008

Experiment	Total (excl power)	Total (incl power)
ALICE	kCHF 4591	7183
ATLAS	11994	14194
CMS	10159	11959
LHCb	2345	2645

Activities of Scrutiny Group in 2007

- May 10-11 2007
 - Examined the budget reports for 2006
 - Identified the main issues for the 2008 budgets
 - First discussions with Resource Coordinators
 - Scrutiny organised by subgroups (including Service Contracts)
 - Meeting with Jos Engelen
- Between May and September
 - Meetings and discussions between subgroups and RCs and others to review and refine budget requests for 2008
- September 24-25 2007
 - Reports from subgroups, including Service Contracts
 - Final discussions with Resource Coordinators and others
 - Meeting with Jos Engelen

New Summary Tables for Cat A M&O

- We (but mainly Vera Luth) worked over winter 06/07 with the Resource Coordinators to develop a set of summary tables covering past and future M&O Cat A
- Many thanks to the RCs for helping to complete the work on these tables ... the data were not straightforward to obtain
- The tables keep track, since 2002, of
 - budgeted and actual costs at level-one
 - balance at level-one
 - invoiced contributions
 - received contributions
 - balance of received contributions and actual costs
 - future budget projections
- The tables give a summary of the budgets, costs and funding of the M&O activities from the time the funding for these activities was established, and will continue to do so into the future

ATLAS: Sheet 1
(as example)

Budgeted Costs	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002-06	TOTAL
Detector Related	20	242	457	2,197	3,738	5,183	6,003	5,778	5,753	6,654	29,371
Secretariat	40	110	155	205	240	245	295	300	305	750	1,895
Collaborative Tools	-	10	15	15	70	120	120	120	120	110	590
Core Computing	-	-	-	-	1,445	1,475	1,824	1,824	1,824	1,445	8,392
On-line Computing	75	75	210	435	810	1,405	2,230	4,055	3,255	1,605	12,550
Test Beams and Facilities	970	580	590	440	250	180	90	90	90	2,830	3,280
Laboratory Operations	20	80	130	115	75	75	75	75	75	420	720
General Services	210	826	1,073	1,072	1,739	1,569	1,272	1,232	1,232	4,920	10,225
Commitments/Deferrals to Future Years	-	-	-	-	-	-	-	-	-	-	-
Cost/Commitments w/o Power	1,335	1,923	2,630	4,479	8,367	10,252	11,909	13,474	12,654	18,734	67,023
Power Costs (NMS share)	39	260	377	369	398	573	858	1,100	1,100	1,443	5,074
Total Budgeted Costs	1,374	2,183	3,007	4,848	8,765	10,825	12,767	14,574	13,754	20,177	72,097

Actual Costs	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002-06
Detector Related		240	419	2,310	3,863					6,832
Secretariat		103	133	181	240					657
Collaborative Tools		3	12	20	70					105
Core Computing		-	-	-	1,445					1,445
On-line Computing	168	37	172	528	795					1,700
Test Beams and Facilities	740	497	619	434	315					2,605
Laboratory Operations		74	107	93	90					364
General Services	95	612	1,106	1,321	1,788					4,922
Commitments/Deferrals to Future Years					333					333
Cost/Commitments w/o Power	1,003	1,566	2,568	4,887	8,939	-	-	-	-	18,963
Power Costs (NMS share)	37	9	28	740	370					1,184
Total Actual Cost/Commitments	1,040	1,575	2,596	5,627	9,309	-	-	-	-	20,147

ATLAS: Sheet 2
(as example)

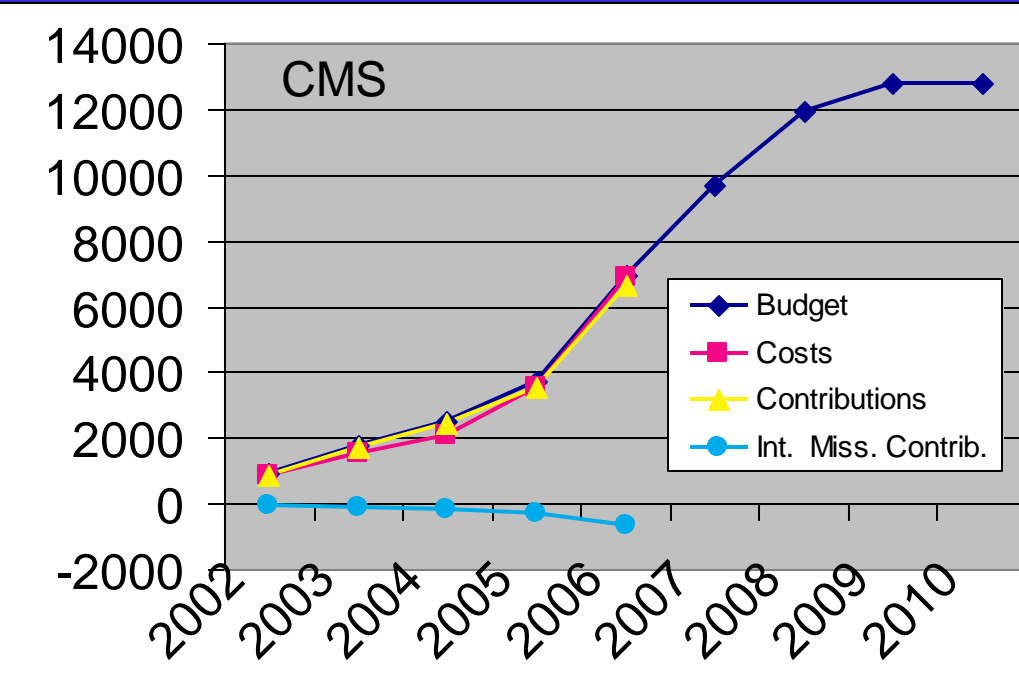
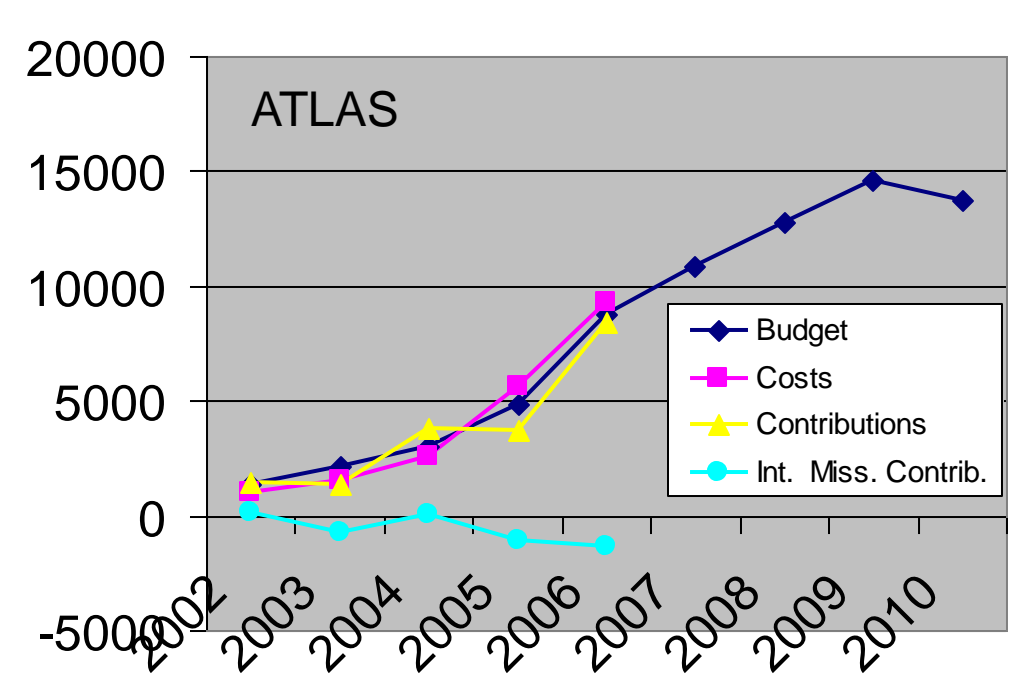
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002-06
Balance										
Detector Related	20	2	38	(113)	(125)					(178)
Secretariat	40	7	22	24	-					93
Collaborative Tools	-	7	3	(5)	-					5
Core Computing	-	-	-	-	-					-
On-line Computing	(93)	38	38	(93)	15					(95)
Test Beams and Facilities	230	83	(29)	6	(65)					225
Laboratory Operations	20	6	23	22	(15)					56
General Services	115	214	(33)	(249)	(49)					(2)
Commitments/Deferrals to Future Years	-	-	-	-	(333)					(333)
Cost/Commitments w/o Power	332	357	62	(408)	(572)					(229)
Power Costs (NMS share)	2	251	349	(371)	28					259
Total Balance: Budgeted - Actual	334	608	411	(779)	(544)					30

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002-06
Income										
Total Actual Contributions	1,488	1,352	3,778	3,754	8,440	7,220	-	-	-	26,032
Total Cost/Comitments	1,040	1,575	2,596	5,627	9,309	-	-	-	-	20,147
Cash Balance (End of CY)	448	(223)	1,182	(1,873)	(869)	7,220	-	-	-	5,885

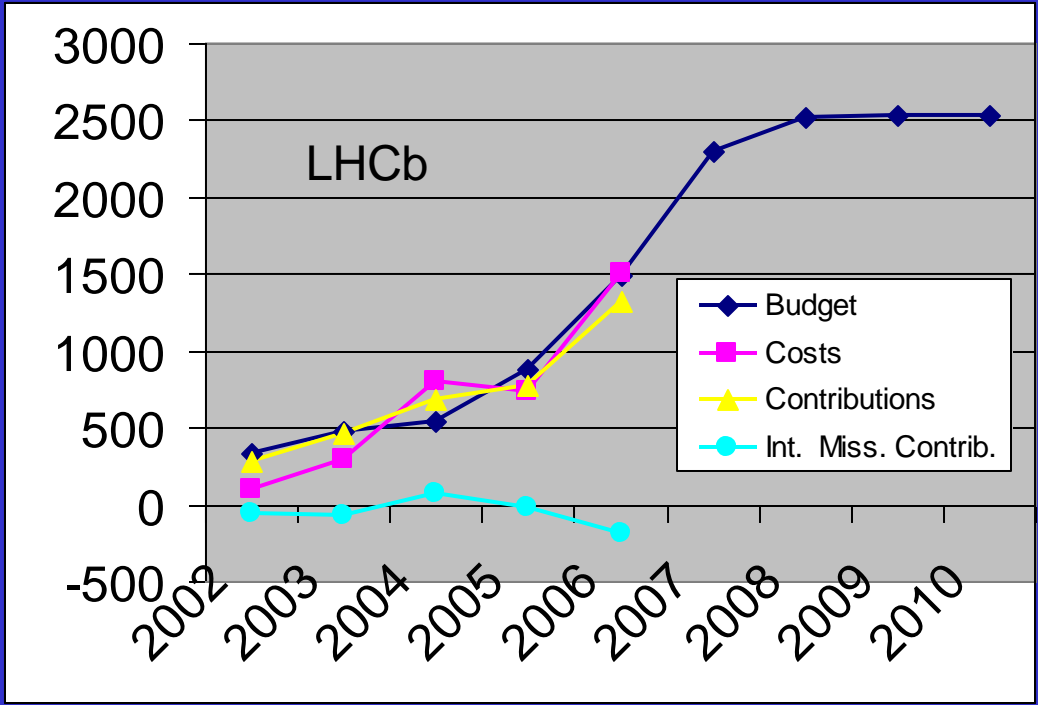
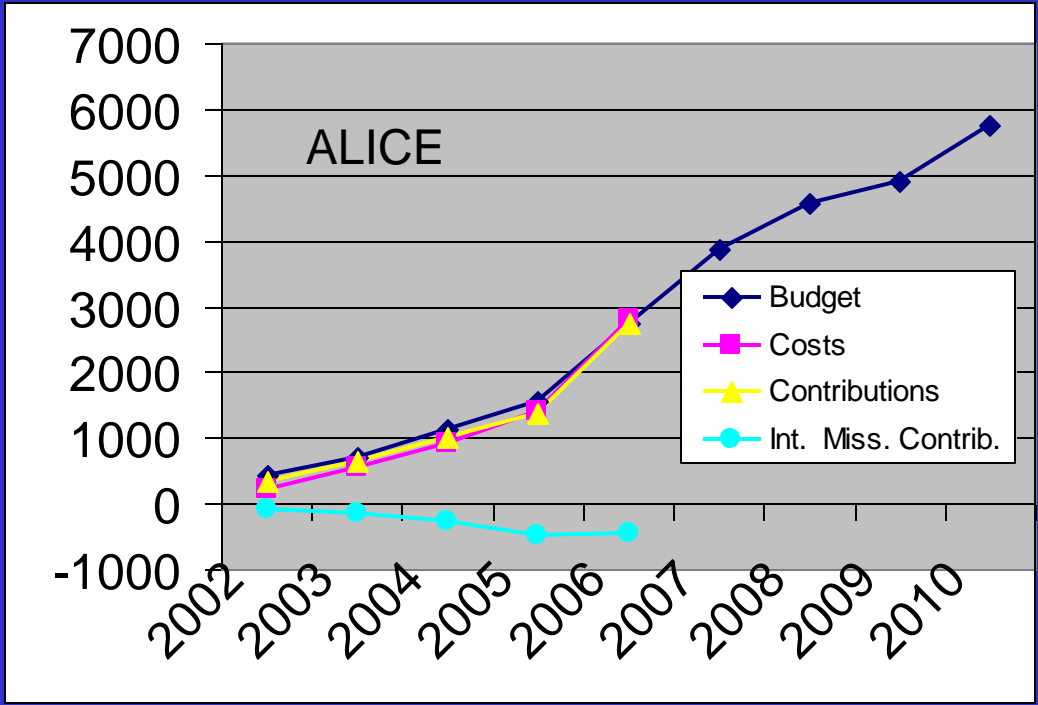
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002-06
Contributions										
Total Invoiced Contributions	1,374	2,183	3,007	4,848	8,765					20,177
Total Actual Contributions (*)	1,488	1,352	3,778	3,754	8,440	7,220				26,032
Outstanding Contributions (End of CY)	114	(831)	771	(1,094)	(325)	7,220				5,855

Evolution of budgets, costs and received contributions

- ATLAS and CMS reach plateau in 2009
- ATLAS dip in 2010 will be offset by a rise in 2011, a feature of the timing of online computer replacements
- Missing contributions now less of a problem than in the past (and more money comes in after closing the tables)



- ALICE budget reaches plateau later than others, in line with later completion of detector build
- LHCb already at plateau level



Service Contracts

- Significant proportions of budgets pay for Service Contracts with CERN departments:
 - Beam pipes, vacuum systems, cryogenics, magnet controls, power converters, cooling and ventilation, power distribution, safety and access controls, surveying, gas distribution, heavy lifting, transport
- Expected to grow as proportion of total spend during the exploitation phase
- Scrutiny Group expects to continue to monitor and scrutinise the service contracts to ensure that they remain good value

TOTEM

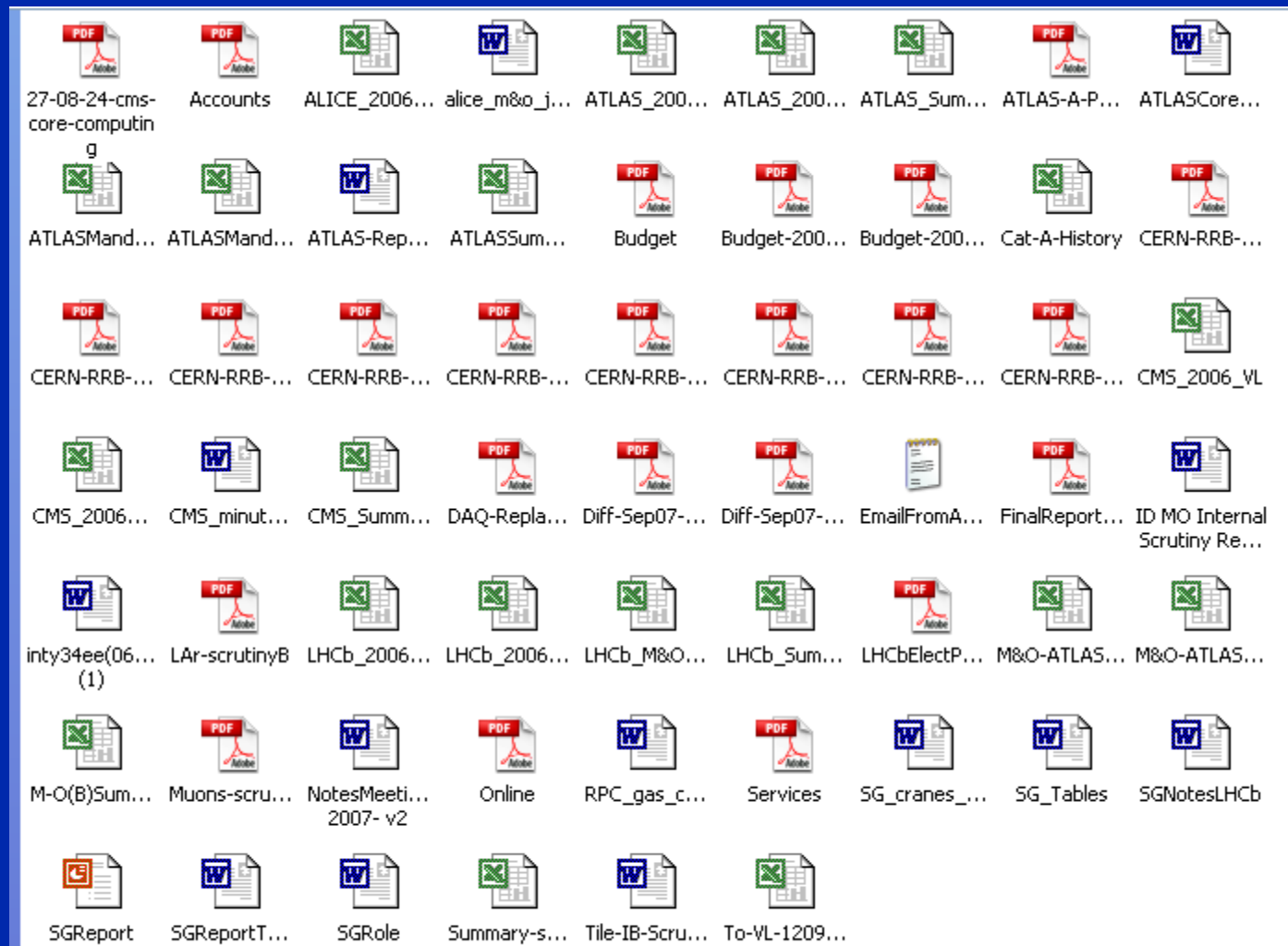
- M&O budget request for TOTEM was tabled at Scrutiny Group meeting on September 25
- SG had insufficient meeting time left to consider this in detail
- The members of the Scrutiny Group felt they needed time to gather more information about TOTEM
- Also, the budget request needed more written justification
- TOTEM now working to produce additional material
- Expect to meet in November/December, with as many SG members as possible, to scrutinise fully the TOTEM requests

ATLAS M&O Cat B

- Following discussion at April RRB, the ATLAS M&O B request was scrutinised in more detail than usual
- ATLAS has in place internal scrutiny for M&O B, whereby each subsystem's needs are reviewed by a small group, whose chair reports to the overall resource coordinator
- Scrutiny Group had a half-day meeting with ATLAS that included discussions with resource co-ordinators for the all the subsystems
- Written documents were provided to justify requests for all the subsystems

ePaperwork in the Scrutiny Group

Snapshot of papers for the 2007 scrutiny, not including the many emails that also contain important information



ePaperwork in the Scrutiny Group

- The plethora of papers and tables is a serious issue for the SG
- Will get even more difficult with inclusion of TOTEM
- Work is hampered by lack of coherent naming conventions, frequent updating, no coherent cataloguing, lack of sec/admin support etc.
- We need a system for naming, categorising and cataloguing all submissions to the SG, that makes it easy for everyone to know what is what and where to find it
- I will work with the new scientific secretary to produce an effective system before the 2008 scrutiny process
- This will not involve any more work for the RCs (other than perhaps changing the names of their files)

Membership of the Scrutiny Group for 2008

Giovanni Batignani	(INFN, Pisa)
George Lafferty	(Manchester, Chair)
Joachim Mnich	(Aachen)
Martyn Davenport	(CERN)
Jasper Kirkby	(CERN)
Sascha Schmelling	(CERN)
Emmanuel Tsesmelis	(CERN)
<i>pp Vera Luth</i>	<i>(New US delegate required)</i>
<i>pp Marc Winter</i>	<i>(New French delegate required)</i>
<i>A N Other</i>	<i>(Delegate from small state required)</i>
<i>pp Chris Jones</i>	<i>(New scientific secretary required)</i>

Summary and Conclusions

- The Scrutiny Group has carefully examined M&O Cat A requests for 2008 for ALICE, ATLAS, CMS and LHCb
- The SG has taken note of M&O B requirements where available, but has scrutinised the ATLAS figures in more detail
- The SG intends to devote similar effort to the scrutiny of requests from TOTEM between now and the end of the year
- Thanks to all members of the SG for their hard work, and to the resource coordinators for their cooperation, depth of knowledge and patience, and for the quality of their written and verbal input to the scrutiny process
- The RRB-SG recommends that the 2008 estimates for the M&O budgets for ALICE, ATLAS, CMS and LHCb be approved by the RRB