

CERN-RRB-2009-025



Status of ATLAS Resources

Presentation to RRB 28.04.2009

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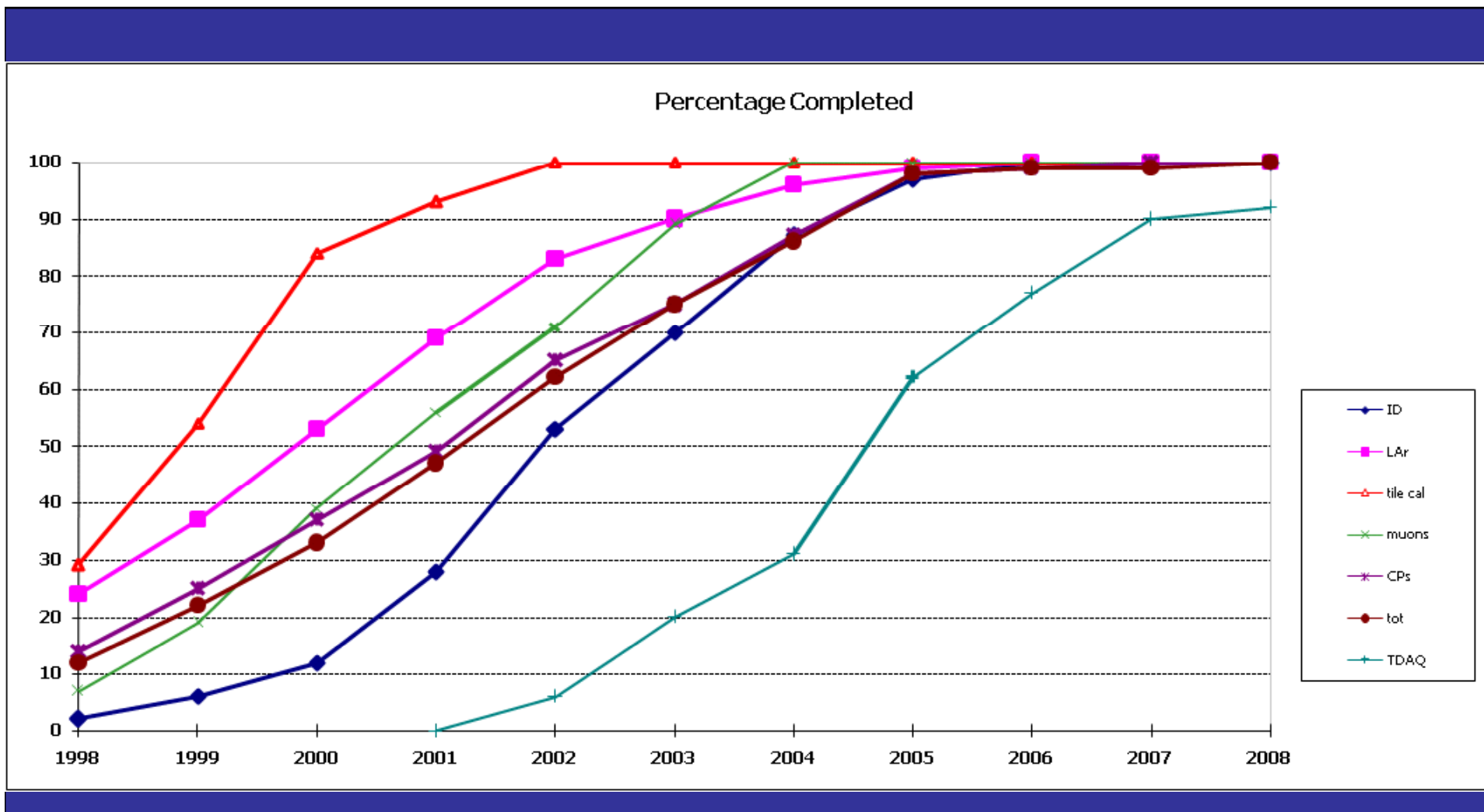
ATLAS Resources Coordination

Introduction to Funding Agency Tables



- To remind, the primary purpose of the Funding Agency (FA) tables is to show received or planned income
- The M&O, C&I and CC tables also show the total payments made by the Project
- Cost to Completion (CtC) = Commissioning & Integration (C&I) + Construction Completion (CC)
 - Category A = Common items
 - Category B = System-specific items
- To read the tables
 - Baseline and CC-A
 - ‘Contributions by Funding Agencies’ = income received from FAs
 - ‘Commitments’ by FAs = commitments requested from the FAs, also beyond the budget year
 - M&O, CtC (=C&I+CC)
 - ‘Contributions by Funding Agencies’ = income received from FAs
 - ‘Other income’ = contribution advancements for the future; deferral funds; contributions, transfers from baseline
 - ‘Total (actual) payments’ = payments made by the Project
 - ‘Balance’ = total contributions + other income – total payments
 - The Table numbering refers to those in Documents 023 and 066, respectively

#023: Baseline Commitments Evolution (%)

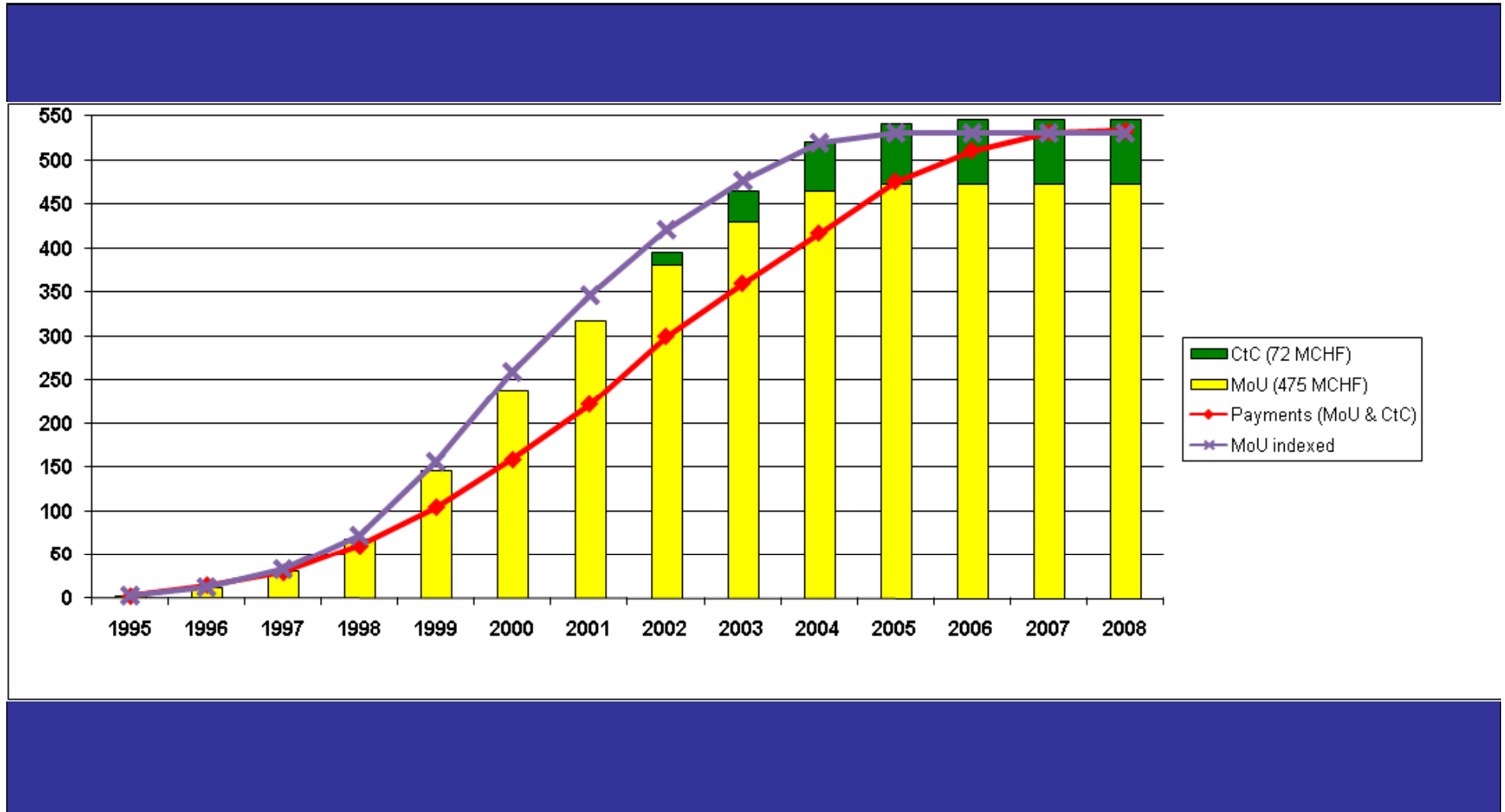


Note: Includes commitments related to deferred funds. TDAQ re-baselined in accordance with CERN-RRB-2004-017 (initial detector)

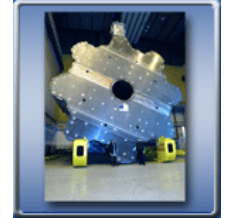
Baseline Payments Evolution (MCHF),

EoY 2008 (Actual)

EoY 2008 (CORE MoU @ 2%)



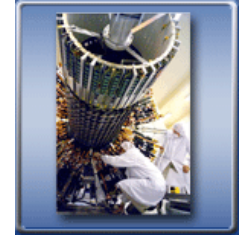
2008 Baseline Report (Tables 2 - 4), MCHF



	Inner	LAr	Tile	Muon	TDAQ/	Common	total
	Det.	Cal.	Cal.	Cham.	DCS	Projects	
commitments					3.6		3.6
total contributions					1.8		1.8
total payments					1.8		1.8
balance						0.0	0.0

Common Projects include CC-A

Summary of ATLAS Construction, MCHF



ATLAS CORE MoU (RRB-D 98-44 rev)

- Originally, 474.7 MCHF
- Final 468.4 MCHF, of which < 14 MCHF planned in 2002 as deferrals to cover over costs

Cost to Completion (CERN-RRB-2002-114 rev.)

- 68.2 MCHF of which 62.3 MCHF pledged
- 4.4 MCHF which was pledged by CERN

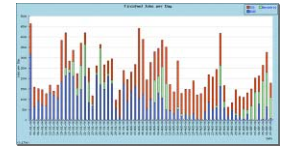
End of 2008, 535.1 MCHF has been spent/committed

- 7.7 MCHF of deferred cash offsets due CF contributions and open commitments
- Still 2.5 MCHF of initial TDAQ HLT processors

Remaining to be covered when funding becomes available

- TDAQ 5.9 MCHF (as part of deferred cash of 7.7 MCHF)
- To recognize 1.9 MCHF of additional manpower (CERN)
- Other staged items from 2002 (ca. 20 MCHF)
- Forward detectors, additional 1.5 MCHF

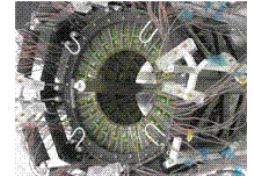
Status of Remaining Contributions (Annex 2, December 31, 2008), kCHF



Construction MoU obligations (kCHF)					CC + C&I accepted (kCHF)			Total
	detectors		CF					
total	remaining	remaining	remaining	total	total	remaining	total	
paid	deliverables	deferrals	contrib.	CMoU	paid	contrib.	committed	
457,098	2,455	4,043	4,817	468,412	61,923	390	62,313	530,725
	<i>of which for CtC</i>			<i>(5,858)</i>			5,858	
Available for payments Baseline & CtC(1)				462,555			68,170	530,725
Available for payments CtC(2)				-	4,400		4,400	4,400
TOTAL AVAILABLE								535,125

Note: CtC refers to 2002 financial plan and CtC(2) to correction made in 2006

Outstanding CORE & CtC Contributions



– **Baseline & CtC**

- Some requested baseline & CtC contributions did not arrive in 2008
 - Russia + JINR 2.8 MCHF
 - Canada 1.5 MCHF (pledged)
 - Other 0.9 MCHF (mostly already pledged)
 - At risk: 2.9 MCHF (of the 5.2 MCHF)
 - At present, deferred cash is used to manage this deficit
- **Calculated CtC contributions not yet pledged: 5.6 MCHF**
- Once these become available, they will be used to restore the Full Design Luminosity Detector (FDL) as described in the Technical Proposal (CERN/LHCC/94-43); see next slide

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Towards FDL & Upgrades (#066)



1. Completion of the TDAQ System
 - 2.1 MCHF planned for 2009 (Table 1)
 - Part of initial CORE; to be reported from now on under FDL activities
2. Other FDL Activities
 - Remaining staged TDAQ items 8 MCHF
 - Remaining other staged items (ca. 20 MCHF)
 - No detailed plan yet, needs to be discussed with the Funding Agencies (FAs)
 - In any event, common infrastructure soon needs improvement (shielding, environmental control, cooling/gas/cryo etc.)
 - Forward detectors ca + 1.5 MCHF
 - Supported so far by FAs on a voluntary & supplementary basis
 - Insertable B-layer project (IBL)
 - Scope, institute participation, cost sharing under discussion
3. Super-LHC
 - Lol for 2010 (?), specific MoU(s)
 - ATLAS Management returns in October with proposals

Item & Cost Driver (by RRB SG Headings)	Cat. A M&O
Detector related costs Cryogenics operations Detector operations	6,435
Secretariat 1.5 FTE charged to ATLAS Publications, consumables	290
Collaborative tools GSM phones Computer network connections Videoconferencing, archiving	115
Core computing (infrastr. & services) Software process service Central production & operation	1,825
On-line computing Detector controls Software licences	1,960
Test beams, facilities Magnet Cryo Op. in B180 On-line computing support TDAQ common electronics	90
Laboratory operations Assembly areas, workshops TDAQ laboratory equipment	75
General services Heavy handling Technical support, storage Survey Outreach Energy	2,036
TOTAL	12,826
Hired manpower at CERN (in kCHF)	incl. above
Institute manpower (in FTE)	0
TOTAL M&O FOR A (kCHF)	12,826



- **#024: Table 1**
- **Final 2008 M&O-A Payments (kCHF)**
 - **Category A (12.8 MCHF)**
 - Cost drivers
 - Technical services (5.2 MCHF)
 - Magnet operation (3.0 MCHF)
 - Core computing I&S (1.8 MCHF)
 - On-line comp. (2.1 MCHF)
 - Energy NMS (0.7 MCHF)
 - Note:
 - Open commitments 0.5 MCHF due to extended shutdown



• #024: Table 1

• Final 2008 M&O-B Payments (kCHF)

– Category B (6.8 MCHF)

- Cost drivers

- Technical services, manpower (1.9 MCHF)

- Electronics replacements, rental (2.0 MCHF)

- Operation of areas, spares, stores (2.7 MCHF)

- 87 FTE core computing effort as in-kind

- Note:

- Updated income Table attached

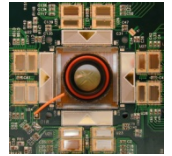
Pixel	SCT	TRT	IDGen	LAr	TileC	Muon	Comp.	Cat. B M&O	Item & Cost Driver (by RRB SG Headings)
-	5	-	83	1	-	178		267	Mechanics & Gas & Cooling & Cryogenics Gases (ID, Tiles, Muons)
237	274	129	673	222	311	105		1,951	Standard electronics Crates, electronics pool rentals
-	-	-	-	-	-	5		5	Detector controls
1	-	3	17	18	4	-		43	Areas SR1-operations (ID), system tests, lab op
1	6	1	16	7	7	6		44	Communications
5	5	12	83	8	24	42		179	Store items
142	581	600	-	1,134	-	-		2,457	Sub-detector spares (incl. b-layer replacement)
386	871	745	872	1,390	346	336	-	4,946	(Excluding hired manpower for Category B)
237	151	24	503	250	220	490		1,875	Hired manpower (kCHF) at CERN
5	5	5	11	2	5	8	87	128	Institute manpower (FTE)
623	1,022	769	1,375	1,640	566	826	-	6,821	TOTAL M&O FOR B

**M+O Contributions (cash and in-kind)
for ATLAS in 2008 by Funding Agency (KCHF)/rev**

Funding Agency	Cat.A items*	Category-B Item contributions						Total Cat. B	Total A + B	Core comp. Categ. B (FTE)	
		Pixel	SCT	TRT	IDGen	LAr	TileC				Muon
Argentina	17					1		1	18		
Armenia	9							0	9		
Australia	49		28		22			50	99	0	
Austria	51			10		9	11	30	81		
Azerbaijan	9					1		1	10		
Belarus								0	0		
Brazil	47							0	47		
Canada	517					308		308	825	3	
Chile	27							1	28		
China NSFC+MSTC						3		11	11		
Colombia	9							8	10		
Czech Republic	221	4	2		2		6	14	235	1	
Denmark	73			40	11			51	124		
France IN2P3	675				29	241	80	465	1140	7	
France CEA	183					91		126	309	1	
Georgia	35					1		2	37		
Germany BMBF	617	249	60		111	53		520	1137	3	
Germany DESY	154					50		106	260	1	
Germany MPI	26		46			36		141	167	1	
Greece	213							19	232		
Israel	161							8	169	0	
Italy	1283	329		112		125	80	796	2079	6	
Japan	527					88	61	313	840	0	
Morocco	70						5	5	75		
Netherlands	154		25			23		107	261	2	
Norway	88		42			38		80	168	2	
Poland	110			1	3	2		6	116	1	
Portugal								76	76		
Romania								14	14		
Russia	137			2	109	81	67	24	322	1	
Russia JINR								0	0		
Serbia	35						2	2	37		
Slovak Republic	26						4	4	30		
Slovenia	61		2			1		3	64		
Spain	352			35		28	53	242	594	2	
Sweden	161			14	44	23	11	111	272		
Switzerland	161			57		45	9	111	272		
Taipei	70			2	1	1		5	75	2	
Turkey	96							4	100		
United Kingdom	1151			380		413		793	1944	10	
US DOE + NSF	2826			237	24	512	148	294	257	30	
CERN	946			45	264	101	125	94	22	15	
total contributions	11,346	936	876	982	1,328	1,447	801	892	7,262	18,608	87
total payments	12,826	623	1022	769	1375	1640	566	826	6,821	19,647	

Notes:

*Following invoices sent to Funding Agencies; including energy cost adjustments

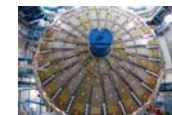


- **#024: Table 4**
- **2010 M&O-A Budget Estimates (kCHF)**

- **Category A (16.0 MCHF)**

- Cost drivers
 - Technical services (7.3 MCHF)
 - Magnet operation (2.4 MCHF)
 - Core computing I&S (1.9 MCHF)
 - On-line comp. (3.4 MCHF)
 - Energy NMS (0.9 MCHF)

Item & Cost Driver (by RRB SG Headings)	Cat. A M&O
Detector related costs Cryogenics operations Detector operations	5,843
Secretariat 1.5 FTE charged to ATLAS Publications, consumables	305
Communications GSM phones Computer network connections Collaborative tools	120
Core computing (infrastr. & serv Software process service Central production & operation	1,900
On-line computing Detector controls Software licences	3,210
Test beams, facilities Magnet Cryo Op. in B180 On-line computing support TDAQ common electronics	465
Laboratory operations Assembly areas, workshops TDAQ laboratory equipment	105
General services Heavy handling Technical support, storage Survey Outreach Energy	4,067
TOTAL	16,015
Hired manpower at CERN (in kC Institute manpower (in FTE)	incl. above 0
TOTAL M&O FOR A	16,015



Pixel	SCT	TRT	ID	Gen	LA	Tile	C	Muon	Comp	Cat. B M&O	Item & Cost Driver (by RRB SG Headings)
279	0	0	100	20	20	125				544	Mechanics
250	280	359	600	295	140	210				2,134	Standard electronics Crates, electronics pool rentals
0	0	0	0	40	15	30				85	Detector controls
5	0	5	20	10	65	0				105	Areas SR1-operations (ID), system tests, lab
1	6	1	10	5	7	5				35	Communications
5	5	10	80	10	25	0				135	Store items
1,000	296	300	0	350	50	0				1,996	Sub-detector spares (incl. b-layer replacement)
1,540	587	675	810	730	322	370	0			5,034	(Excluding hired manpower for Category B)
249	150	50	318	261	284	330				1,642	
5	5	5	11	2	7	8	98			141	
1,789	737	725	1,128	991	606	700	0			6,676	TOTAL M&O FOR B

- #024: Table 4
- 2010 M&O-B Budget Estimates (kCHF)
 - Category B (6.7 MCHF)
 - Cost drivers
 - Technical services, manpower (2.1 MCHF)
 - Electronics replacements, rental (2.2 MCHF)
 - Operation of areas, spares, stores (2.1 MCHF)
 - 98 FTE core computing effort as in-kind

Status of due M&O-A Contributions EoY08

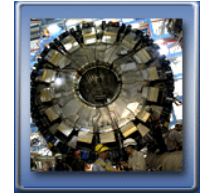
(February 28, 2009)



FUNDING AGENCIES	Outstanding 2002-2006	Outstanding 2007	Outstanding 2008	TOTAL
MEMBER STATES				
CZECH REPUBLIC			13 484	13 484
PORTUGAL			103 000	103 000
A) TOTAL MEMBER STATES			116 484	116 484
NON-MEMBER STATES				
ARMENIA	21 850	8 000		29 850
AUSTRALIA			38 000	38 000
BELARUS	28 139	47 000	52 000	127 139
BRAZIL			5 000	5 000
CHINESE CLUSTER			87 000	87 000
MOROCCO	33 000	63 000		96 000
ROMANIA			96 000	96 000
JINR	19 000	14 000	198 000	231 000
RUSSIA PROTIVNO	56 918		285 000	341 918
B) TOTAL NON-MEMBER STATES	158 907	132 000	761 000	1051 907
GRAND TOTAL (A+B)	158 907	132 000	877 484	1 168 391

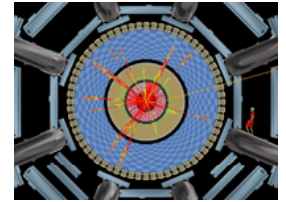
Status of due M&O-B Contributions EoY08

(February 28, 2009)



FUNDING AGENCIES	Outstanding 2002-2006	Outstanding 2007	Outstanding 2008	TOTAL
MEMBER STATES				
A) TOTAL MEMBER STATES				
NON-MEMBER STATES				
ARMENIA	6 000	5 000	1 000	12 000
BELARUS			3 000	3 000
BRAZIL			3 000	3 000
CHINESE CLUSTER			4 000	4 000
MOROCCO	2 000			2 000
ROMANIA			5 000	5 000
JINR	140 000	102 000	15 000	257 000
RUSSIA PROTWINO	92 900		41 000	133 900
B) TOTAL NON-MEMBER STATES	240 900	107 000	72 000	419 900
GRAND TOTAL (A+B)	240 900	107 000	72 000	419 900

RRB Invited to



- Approve the 2008 final construction and M&O budgets
- Take note of the 2009 FDL budget status (notably TDAQ)
- Take note of first M&O budget estimates 2010