

CERN-RRB-2010-015



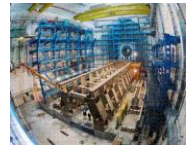
Status of ATLAS Resources

Presentation to RRB 20.04.2010

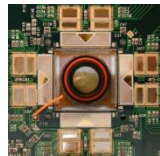
Markus Nordberg

ATLAS Resources Coordination

Full Design Luminosity (FDL) 2009-2010



- Document CERN-RRB-2010-012
- 2010 Status (for approval)
 - TDAQ: contributions 1.9 MCHF (Table 1)
 - Note: 1.1 MCHF worth of contributions beyond the initial, staged detector configuration but within the original CORE-framework
 - Insertable b-layer (IBL)
 - CORE cost envelope 9.7 MCHF
 - I-MoU draft now in distribution through the NCPs
 - No project payments yet
 - TDR ready in Summer 2010; then submitted to LHCC
 - Forward luminosity detectors
 - Work continues, based on voluntary and supplementary contributions. Costs & reporting being discussed, 1st workshop planned for Summer 2010
- 2010 TDAQ budget update: 1.7 MCHF (Table 2, for information)



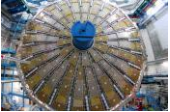
- **#014: Table 1**
- **2009 M&O-A Final Payments (kCHF)**

Category A (14.4 MCHF), including NMS-energy

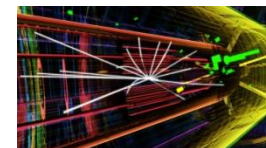
- Cost drivers
 - Technical services (5.8 MCHF)
 - Magnet operation (2.1 MCHF)
 - Core computing I&S (1.9 MCHF)
 - On-line computing (3.7 MCHF)
 - Energy NMS part (0.9 MCHF)

Item & Cost Driver (by RRB SG Headings)	Cat. A M&O
Detector related costs Cryogenics operations Detector operations	5,641
Secretariat 1.5 FTE charged to ATLAS Publications, consumables	318
Communications GSM phones Computer network connections Collaborative tools	314
Core computing (infrastr. & serv Software process service Central production & operation	1,901
On-line computing Detector controls Software licences	3,386
Test beams, facilities Magnet Cryo Op. in B180 On-line computing support TDAQ common electronics	496
Laboratory operations Assembly areas, workshops TDAQ laboratory equipment	100
General services Heavy handling Technical support, storage Survey Outreach Energy	2,252
TOTAL	14,408
Hired manpower at CERN (in kCh) Institute manpower (in FTE)	incl. above 0
TOTAL M&O FOR A	14,408

Pixel	SCT	TRT	ID	Gen	LA	Tile	C	Muon	Comp	Cat. B M&O	Item & Cost Driver (by RRB SG Headings)
0	100	100	400	27	4	428				1,059	Mechanics
495	100	642	380	337	233	141				2,328	Standard electronics Crates, electronics pool rentals
0	17	25	0	29	2	0				73	Detector controls
100	109	100	120	27	19	24				499	Areas SR1-operations (ID), system tests, lab
0	5	2	17	10	7	5				46	Communications
10	6	24	115	4	9	42				210	Store items
0	0	0	0	350	29	0				379	Sub-detector spares (incl. b-layer replacement)
605	337	893	1,032	784	303	640	0			4,594	(Excluding hired manpower for Category B)
300	250	40	400	200	154	308				1,652	
33	33	31	40	67	40	109	117			470	
905	587	933	1,432	984	457	948	0			6,246	TOTAL M&O FOR B

- #014: Table 1 
- 2009 M&O-B Final Payments (kCHF)
 - Category B (6.2 MCHF)
 - Cost drivers
 - Electronics replacements, rentals (2.3 MCHF)
 - Technical services, manpower (1.7 MCHF)
 - Areas, spares, stores (1.1 MCHF)
 - Mechanics (1.0 MCHF)
 - Operation effort 470 FTE, of which 117 FTE core computing effort as in-kind
- Note: Operation effort (FTE) now reported, from OTP

Item & Cost Driver (by RRB SG Headings)	Cat. A M&O
Detector related costs Cryogenics operations Detector operations	6,503
Secretariat 1.5 FTE charged to ATLAS Publications, consumables	305
Communications GSM phones Computer network connections Collaborative tools	320
Core computing (infrastr. & serv Software process service Central production & operation	2,128
On-line computing Detector controls Software licences	5,600
Test beams, facilities Magnet Cryo Op. in B180 On-line computing support TDAQ common electronics	885
Laboratory operations Assembly areas, workshops TDAQ laboratory equipment	125
General services Heavy handling Technical support, storage Survey Outreach Energy	4,110
TOTAL	19,976
Hired manpower at CERN (in kC Institute manpower (in FTE)	incl. above 0
TOTAL M&O FOR A	19,976



- **#014: Table 4**
- **2011 M&O-A Preliminary Estimates (kCHF)**

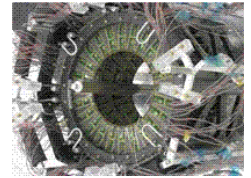
Category A (20.0 MCHF), including energy

- Cost drivers
 - Technical services (6.8 MCHF)
 - Magnet operation (2.2 MCHF)
 - Core computing I&S (2.1 MCHF)
 - On-line computing (5.9 MCHF)
 - Energy NMS part (1.1 MCHF)

Pixel	SCT	TR	ID	Gen	LA	Tile	C	Muon	Comp	Cat. B M&O	Item & Cost Driver (by RRB SG Headings)
0	0	0	0	26	23	100				149	Mechanics
220	305	200	50	240	142	235				1,392	Standard electronics Crates, electronics pool rentals
0	0	0	0	40	16	30				86	Detector controls
45	20	30	120	10	61	0				286	Areas SR1-operations (ID), system tests, lab
1	5	0	8	5	7	5				31	Communications
24	30	30	80	10	23	0				197	Store items
149	0	0	0	350	116	0				615	Sub-detector spares (incl. b-layer replacement)
439	360	260	258	681	388	370	0			2,756	(Excluding hired manpower for Category B)
199	277	265	315	455	217	330				2,058	Hired manpower
25	22	27	38	67	42	122	157			500	
638	637	525	573	1,136	605	700	0			4,814	TOTAL M&O FOR B

- #014: Table 4 
- 2011 M&O-B Preliminary Estimates (kCHF)
 - Category B (4.8 MCHF)
 - Cost drivers
 - Technical services, manpower (2.1 MCHF)
 - Electronics replacements, rentals (1.4 MCHF)
 - Areas, spares, stores (1.1 MCHF)
 - Operation effort 500 FTE, of which 157 FTE core computing effort as in-kind
 - Note: Operation effort (FTE) now reported, from OTP

Comments on M&O (A, B) 2011-2014



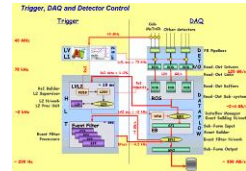
– M&O-A

- Technical solutions for the IBL and ID evaporative cooling part in M&O not yet presented to the LHCC => may shift 2011 estimates to the future, if necessary (in line with CERN-RRB-2009-078) – to be discussed with the Scrutiny Group
- TDAQ replacement strategy for 2011+ is not yet decided but unlikely to happen to the extent planned for in 2009

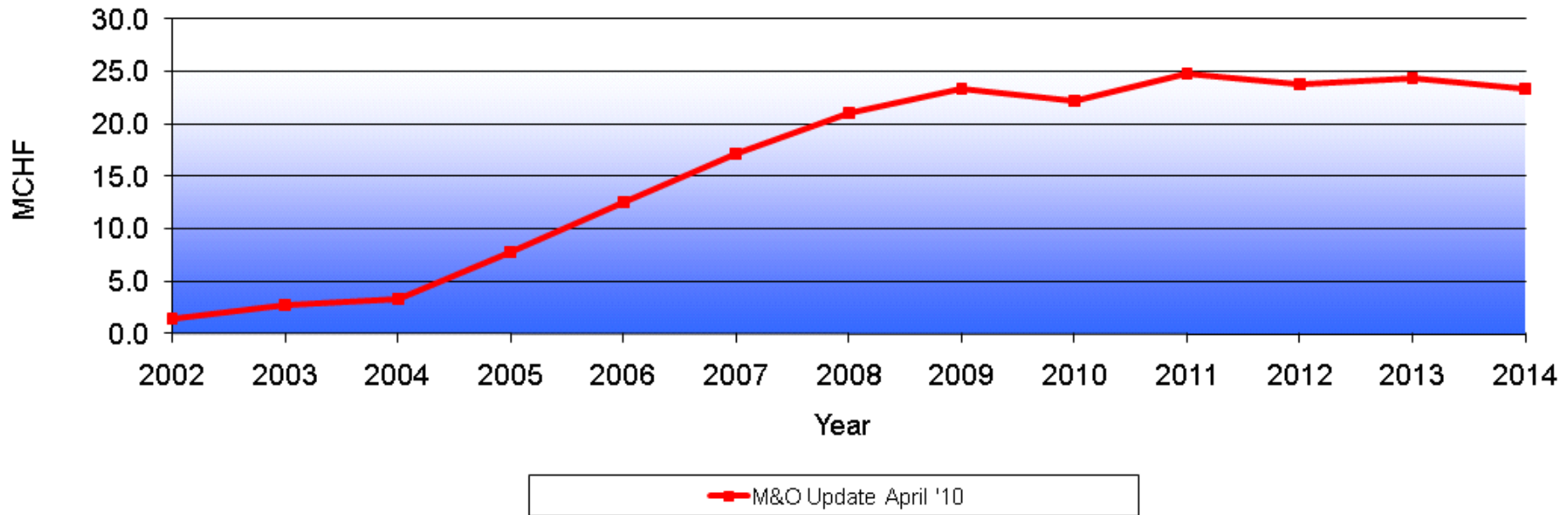
– M&O-B

- Includes ID-specific part of IBL (4.4 MCHF in total)
 - Original Pixel FAs have the option of having their calculated M&O share accounted for as separate project funding, reducing the 2011 - 2014 M&O-B budget accordingly

Evolution of M&O 2002 – 2014, MCHF



Evolution of M&O Plans (MCHF)



Status of due M&O-A Contributions

(April 12, 2010)



FUNDING AGENCIES	Outstanding 2002-2008	Outstanding 2009	Outstanding 02-09	TOTAL
MEMBER STATES				
CZECH REPUBLIC	13 484		13 484	13 484
POLAND		3 500	3 500	3 500
A) TOTAL MEMBER STATES	13 484	3 500	16 984	16 984
NON-MEMBER STATES				
ARMENIA	17 850	9 000	26 850	26 850
BELARUS	127 139	54 000	181 139	181 139
BRAZIL		38 000	38 000	38 000
MOROCCO		54 000	54 000	54 000
ROMANIA		109 000	109 000	109 000
JINR	278 000	227 000	505 000	505 000
B) TOTAL NON-MEMBER STATES	422 989	491 000	913 989	913 989
GRAND TOTAL (A+B)	436 473	494 500	930 973	930 973

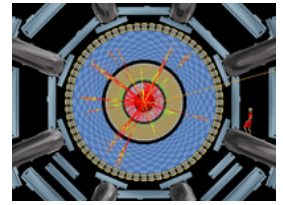
Status of due M&O-B Contributions

(April 12, 2010)



FUNDING AGENCIES	Outstanding 2002-2008	Outstanding 2009	Outstanding 02-09	TOTAL
MEMBER STATES				
SPAIN		45 000	45 000	45 000
A) TOTAL MEMBER STATES		45 000	45 000	45 000
NON-MEMBER STATES				
ARMENIA	12 000	1 000	13 000	13 000
BELARUS	3 000	3 000	6 000	6 000
BRAZIL	3 000	3 000	6 000	6 000
MOROCCO		3 000	3 000	3 000
ROMANIA		5 000	5 000	5 000
JINR	15 000	15 000	30 000	30 000
B) TOTAL NON-MEMBER STATES	33 000	30 000	63 000	63 000
GRAND TOTAL (A+B)	33 000	75 000	108 000	108 000

RRB Invited to



- Approve 2009 FDL (TDAQ, Table 1)
- Take note 2010 FDL Status
- Approve M&O 2009 Payments
- Take note of M&O 2011 Budget Proposal