



Maintenance and Operation Budgets

1 – Maintenance and Operation Category A Budget

The 2013 ALICE Maintenance and Operations Cat. A draft budget and estimates for the period 2014 – 2017 are summarized in the following table (unit = kCHF):

ALICE M&O A Budget Requests		Draft	Estimates 2014-2017			
Years	2012	2013	2014	2015	2016	2017
Detector related costs	1,253	1,733	1,356	1,200	1,237	1237
Secretariat	208	208	208	208	208	208
Communications	40	0	0	0	0	0
Core computing	537	537	537	537	537	537
On-line computing	2,012	1,033	1,587	1,847	1,810	1,810
Test beams, calibration facilities	85	30	85	85	85	85
Laboratory operations	250	280	245	235	235	235
General services	550	829	632	538	538	538
TOTALS w/o power	4,935	4,650	4,650	4,650	4,650	4,650
Power	2,386	721	1,374	2,386	2,386	2,386
GRAND TOTAL	7,321	5,371	6,024	7,036	7,036	7,036

Table 1: ALICE Maintenance and Operations Cat. A draft 2013 budget and estimates for the period 2014 – 2017

The draft budget for 2013 and the estimates for the following years have been updated with respect to the data submitted to the Resources Review Board in April 2012.

As shown in table 2, the budget presented for approval for the period 2013-2017 has been reduced by more than 1.4 million Swiss Francs compared to the budget presented at the April meeting of the RRB.

	Year	2013	2014	2015	2016	2017	total
as forecasted in April 2012	Total M&O-A w/o Power	4'934	4'934	4'934	4'934	4'934	24'670
	Power	150	1'963	2'386	2'386	2'386	9'271
	Total	5'084	6'897	7'320	7'320	7'320	33'941
Revised version for approval	Total M&O-A w/o Power	4'650	4'650	4'650	4'650	4'650	23'250
	Power	721	1'374	2'386	2'386	2'386	9'253
	Total	5'371	6'024	7'036	7'036	7'036	32'503
VARIATION	Total M&O-A w/o Power	-284	-284	-284	-284	-284	-1'420
	Total with Power	287	-873	-284	-284	-284	-1'438

Table 2: variation between April budget forecast and revised version for approval

The budget reduction mainly concerns:

- the On-line computing with a 5-year replacement cycle of the hardware;
- the communication budget since the fee for the video conferencing will not be charged to the experiment in the future;

In 2013, the budgets “Detector Related Costs”, “Laboratories Operations” and “General Services” have increased to cover the costs of the Long Shutdown (LS1). ALICE plans to open the detector for maintenance and consolidation and to install additional detector components: at least three TRD super-modules, one PHOS module as well as the Di-jet Calorimeter (DCal).

Essential infrastructure consolidation works include: the refurbishment of outdated electrical infrastructure on surface and in the counting rooms, as well as the refurbishment of the general cooling and ventilation systems, and the consolidation of detector services in the cavern.

Note that for the consolidation of the outdated electrical infrastructure, ALICE has received from CERN a contribution of 660 kCHF (M&O-C).

2 – Sharing of the 2013 Maintenance and Operation Cat. A budget

Table 3 shows the proposed sharing of the 2013 draft budget based on the number of ‘Scientific staff holding PhD or equivalent qualifications’ as defined in the Memorandum of Understanding on Maintenance and Operation. In 2013, a rebate of 155 kCHF will be given to NMS Funding Agencies for the 2011 unused power.

ALICE Experiment M&O-A 2013 Draft Budget	number of scientists ACDB as 1/9/2012	M&O-A	Energy in CHF	Energy billed to NMS Funding Agencies in CHF	Energy refund from 2011	Invoice for 2013 in CHF
CERN	52	403'673	62'591			403'673
Czech Republic	13	100'918	15'648			100'918
Denmark	8	62'104	9'629			62'104
Finland	6	46'578	7'222			46'578
France CEA	7	54'341	8'426			54'341
France IN2P3	48	372'621	57'776			372'621
Germany BMBF	37	287'229	44'536			287'229
Germany GSI	23	178'548	27'684			178'548
Greece	3	23'289	3'611			23'289
Hungary	4	31'052	4'815			31'052
Italy Centro Fermi	7	54'341	8'426			54'341
Italy INFN	101	784'057	121'571			784'057
Netherlands	11	85'392	13'240			85'392
Norway	18	139'733	21'666			139'733
Poland	20	155'259	24'073			155'259
Romania ISS	4	31'052	4'815		-3'447	27'604
Romania NIPNE	7	54'341	8'426		-6'033	48'307
Slovak Republic	10	77'629	12'037			77'629
Spain/Cuba	5	38'815	6'018			38'815
Sweden	5	38'815	6'018			38'815
United Kingdom	9	69'866	10'833			69'866
Armenia	2	15'526	2'407	2'407	-862	17'071
Brazil	5	38'815	6'018	6'018	-5'171	39'662
China Wuhan CCNU	4	31'052	4'815	4'815	-4'309	31'557
Croatia	5	38'815	6'018	6'018	-3'447	41'386
India	41	318'280	49'351	47'071	-29'594	335'757
Japan	10	77'629	12'037	11'553	-9'927	79'256
JINR	9	69'866	10'833	10'833	-6'033	74'666
Mexico	12	93'155	14'444	14'444	-10'342	97'257
Republic of Korea NRF	9	69'866	10'833	10'833	-8'619	72'081
Republic of Korea NRF - KISTI	3	23'289	3'611	3'611		26'900
Pakistan	3	23'289	3'611	3'611		26'900
Peru	1	7'763	1'204	1'204	-862	8'105
Russia	40	310'518	48'147	35'091	-25'126	320'482
South Africa	7	54'341	8'426	8'426	-5'171	57'595
Ukraine Kiev	3	23'289	3'611	3'611	-2'586	24'314
USA DOE	41	318'280	49'351	47'911	-29'286	336'906
USA NSF	6	46'578	7'222	7'011	-4'184	49'405
Total	599	4'650'000	721'000	224'469	-155'000	4'719'469

Table 3: Sharing of the 2013 draft budget (in CHF)

3 – Maintenance and Operation Cat. B budget

Table 4 summarizes the 2013 Maintenance and Operation category B draft budget and estimates for the period 2014 – 2016 (unit = kCHF) and Table 5 shows the budget detailed by systems and the sharing by funding agencies.

ALICE M&O B Budget requests in kCHF	2012	Draft 2013	2014	2015	2016
Mechanics	28.5	50	40.5	26.5	26.5
Gas Systems	82	38	38	38	38
Cooling Systems	110	151	101	94	94
FEE spares	100.5	135	119	105	105
Standard Electronics LV/HV PS	421	322.5	241.5	212.5	212.5
Standard Electronics Crates	63.5	26.5	27.5	17.5	17.5
Standard Electronics R/O modules	172.5	94.5	106	166	106
Controls (DCS & DSS)	33	33.5	29.5	29.5	29.5
Sub-Detector spares	81.5	143	140	41	41
Areas	57	42	42	42	42
Communications	92.5	91	91	88	88
Store Items	83.5	97.5	79.5	78.5	78.5
Technical Manpower @ CERN: Industrial Support	23	6	6	6	6
Technical Manpower @ CERN: from Collaborating Institutes	433.4	427	410	353	353
Grand Total	1782	1658	1472	1298	1238

In-Kind contribution in man-month	2012	2013	2014	2015	2016
Technical Manpower @ CERN: in-kind contribution from Collaborating Institutes in man-month	324	270	192	192	192
Grand Total	324	270	192	192	192

Table 4: Maintenance and Operation Category B 2013 draft budget and estimates for the period 2014 – 2016

4 – Maintenance and Operation 2013 draft budget by systems and funding agencies

	ITS Common	ITS-SPD	ITS-SDD	ITS-SSD	TPC	TRD	TOF	HMPID	PHOS	EMCAL-DCAL	FMD	T0	V0 A	V0 C	PMD	ZDC	ACORDE	MUON TRACKING	MUON TRIGGER	CENTRAL TRIGGER	Grand Total	
CERN	17.5	33.8		19.8	25.6			27.8														124.4
Czech Republic	1.7		10.8						8.4													20.8
Denmark					4.8						25.0											29.8
Finland												65.0										65.0
France CEA																		20.0				20.0
France IN2P3	6.2			33.6						4.6				55.5				60.0	46.0			205.9
Germany BMBF						125.0																125.0
Germany GSI					91.2																	91.2
Italy INFN	48.8	33.8	156.6	53.4			70.0	64.8		4.6						26.0		24.0	30.0			511.9
Netherlands	6.8			35.1																		41.9
Norway									16.7													16.7
Poland					4.8				8.4													13.2
Slovakia	3.0	7.5			3.2																	13.7
Sweden					28.8																	28.8
United Kingdom																				20.0		20.0
China								8.4		3.1												11.5
Croatia					1.6																	1.6
India															36.0			20.0				56.0
Japan								8.4		4.6												13.0
JINR						5.7		8.4														14.1
Mexico													52.5				15.0					67.5
Republic of Korea							24.0												5.0			29.0
Romania NIPNE						2.7																2.7
Russia	0.4		1.8	1.5					34.4									20.0				58.1
South Africa																		20.0				20.0
Ukraine	3.5		10.8	9.2																		23.5
United States DOE										32.1												32.1
United States NSF	0.1																					0.1
Total	88.0	75.0	180.0	152.5	160.0	133.4	94.0	92.5	93.0	49.0	25.0	65.0	52.5	55.5	36.0	26.0	15.0	164.0	81.0	20.0	1'657.4	

Table 5: Sharing of the 2013 M&O Cat. B draft budget (in kCHF)

Budget scrutinized by the RRB Scrutiny Group, as well as discussed within projects and the Funding Agencies concerned.