



Annual Progress Report for 2016

CERN/SPC/1084/Rev. – CERN/FC/6096/Rev. – CERN/3294/Rev.

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Executive Summary

Document essentially as presented in March for information:

- Incorporating comments from SPC, FC and Council
- Taking into account suggestions from the review by the External Auditors

- Some wording in the narrative summary and fact sheets improved following feedback received
- The KPI section enriched with more details for occupational accidents by type of personnel; an annex was also added showing the past trends

A big thank you to the External Auditors (NIK) and to Delegates for their suggestions and review



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2016 APR: Summary

- Document structure

- Executive Summary describing 2016 accomplishments over full spectrum of activities
- Summary tables with revenues, expenses and budget balance
- Key Performance Indicators (KPI): introduced for the first time (following recommendation of External Auditors)*
- Appendices with details (fact sheets and more detailed tables)

- Comparison of 2016 objectives (as approved in June 2015) with 2016 Out-Turn
- 2016 spending profile was reviewed thoroughly by the (new) Management in the course of the annual planning exercise; consequently
 - 2016 Revised Budget was presented as part of the Medium Term Plan in June 2016
 - **The 2016 Budget Out-Turn is compared to the revised figures** (change with respect to last year)

*limited to a relatively small number for this first time

2016 Highlights (examples)

- New Management and new organizational structure
 - a fourth sector, International Relations, was added
 - reduction from 13 to 4 units attached to DG
- LHC performance
 - record LHC peak luminosity: $\sim 1.5 \times 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$ (50% beyond design)
 - $\sim 40 \text{ fb}^{-1}$ at 13 TeV to ATLAS and CMS (goal was 25 fb^{-1})
 - many results from experiments on very short time (e.g. 750 GeV di-photon bump not confirmed, Higgs boson “rediscovered” to 10σ at 13 TeV, limits on new physics, many beautiful precise measurements)
 - WLCG computing broke new records (but running at the limit of resources): 50 PB of raw data recorded, peak global transfer rate of 55 GB/s
- HL-LHC
 - Council approved the HL-LHC project and agreed to the European Investment Bank credit facility to finance HL-LHC with constant revenues from the present Member States
 - The second cost and schedule review of the LIU and HL-LHC projects was successfully completed in October – planning and CtC confirmed
 - LINAC4 reached designed energy (160 MeV); Nb₃Sn magnet R&D and prototyping progressing very well
- Successful non-LHC programme (progress on HIE-ISOLDE; AD-ELENA, neutrino platform)

2016 Highlights (continued)

- Preparation for CERN future:
 - “Physics Beyond Colliders” study group established in March 2016 (complementary to CLIC, FCC)
 - CLIC test facility CTF3 completed
- Finance and human resources:
 - implementation of the five-yearly review of financial and social conditions of the members of the personnel and new career structure (in 2 phases)
 - external review of Finance and Human Resources carried out
 - ~ 1600 young people trained at CERN in 2016 (fellows, doctoral students, technical students, etc.)
- Geographical enlargement:
 - Romania became the 22nd Member State
 - Ukraine and Cyprus became Associates Member States
 - AM agreements signed with India and Slovenia

Further observations for 2016 Out-Turn figures

- The cumulative deficit remained at the level as of end 2015 (lower than anticipated), but this is a few months shift of expenses (we call it like a “travelling wave”) and not an accumulation
- If compared to the 2016 Probable Revenues and Expenses (presented to the Council in December 2016), the expenses in the 2016 Out-Turn are higher by about 2 MCHF
 - Open Commitments at the end of 2016 amount to 69 MCHF
 - The 53.2 MCHF of *Materials* carry forward to 2017 and re-profiling to future years were already included in the 2016 Probable Revenues and Expenses

Budget position of the Organization

(in MCHF, rounded off)	Final 2016 Budget	Revised 2016 Budget	2016 Out-Turn	Variation of 2016 Out-Turn with respect to	
	CERN/FC/5955 ²	CERN/FC/6011	CERN/FC/6096/Rev.	Revised 2016 Budget	
	(2016 prices)	(2016 prices)	(2016 prices)	MCHF	%
		(a)	(b)	(c)=(b)-(a)	(c)/(a)
REVENUES	1,227.5	1,233.1	1,238.0	5.0	0.4%
Member States' contributions	1,119.7	1,119.0	1,119.0	0.0	0.0%
Associate Member States' contributions	7.6	8.2	8.4	0.3	3.4%
Contributions anticipated from new Associate Member States	3.5				
EU contributions	14.4	19.7	17.6	-2.1	-10.6%
Other revenues	82.4	86.2	93.0	6.8	7.9%
EXPENSES	1,236.0	1,203.6	1,153.2	-50.4	-4.2%
Scientific programmes	506.7	489.0	459.7	-29.3	-6.0%
Infrastructure and services	280.6	301.8	278.6	-23.2	-7.7%
Centralised expenses	193.1	181.3	185.0	3.6	2.0%
Projects and studies	255.7	231.5	229.9	-1.5	-0.7%
BALANCE					
Annual balance	-8.5	29.5	84.8	55.4	
Capital repayment allocated to the budget (Fortis, FIPOI 1, 2 and 3)	-25.1	-25.1	-25.1	0.0	
Recapitalisation Pension Fund	-60.0	-60.0	-60.0	0.0	
Annual balance allocated to budget deficit	-93.6	-55.6	-0.3	55.4	
-Cumulative balance¹-	-118.1	-173.7	-118.4	55.4	

Positive difference (out-turn with respect to revised budget) of **55.4** MCHF explained mainly by 50 MCHF lower expenses:

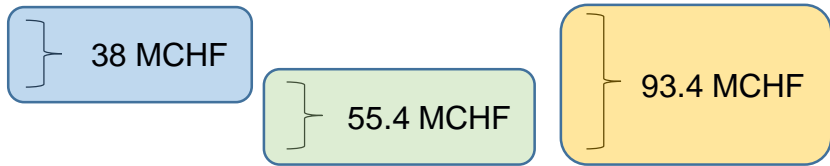
- continuous efforts of the Management to optimise the resources and reduce the budget deficit
- savings because of the CHF-EUR appreciation (about 13 MCHF)
- re-profiling in spending for some of the consolidation and non-LHC activities

Cumulative budget deficit **compatible** with the balance at the end of 2015 (-118.1 MCHF):

Planned: -211.7 MCHF in Final 2016 Budget

Revised: -173.7 MCHF in Revised 2016 Budget

Actual amount: **-118.4** MCHF





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Final 2016 Budget, Revised, PRE, Out-Turn

(in MCHF, rounded off)	Final 2016 Budget	Revised 2016 Budget	2016 Prob. Rev. & Exp.	2016 Out-Turn	Final 2016 Budget Variation		Revised 2016 Budget Variation		2016 Prob. Rev. & Exp. Variation	
	CERN/FC/5955	CERN/FC/6011	CERN/FC/6060	CERN/FC/6096/RA	MCHF	%	MCHF	%	MCHF	%
	(2016 prices)	(2016 prices)	(2015 prices)	(2016 prices)	(e)= (d)-(a)	(e)/(a)	(f)= (d)-(b)	(f)/(b)	(g)= (d)-(c)	(g)/(c)
(a)	(b)	(c)	(d)	(e)= (d)-(a)	(e)/(a)	(f)= (d)-(b)	(f)/(b)	(g)= (d)-(c)	(g)/(c)	
REVENUES	1,227.5	1,233.1	1,226.0	1,238.0	10.5	0.9%	5.0	0.4%	12.1	1.0%
Member States' contributions	1,119.7	1,119.0	1,119.0	1,119.0	-0.7	-0.1%	0.0	0.0%	0.0	0.0%
Associate Member States' contributions	7.6	8.2	8.4	8.4	0.8	11.2%	0.3	3.4%	0.0	0.0%
Contributions anticipated from new Associate Member States	3.5				-3.5	-100.0%				
EU contributions	14.4	19.7	14.4	17.6	3.3	22.8%	-2.1	-10.6%	3.2	22.1%
Other revenues	82.4	86.2	84.1	93.0	10.5	12.8%	6.8	7.9%	8.9	10.5%
EXPENSES	1,236.0	1,203.6	1,151.3	1,153.2	-82.8	-6.7%	-50.4	-4.2%	1.9	0.2%
Scientific programmes	506.7	489.0	463.1	459.7	-47.0	-9.3%	-29.3	-6.0%	-3.4	-0.7%
Infrastructure and services	280.6	301.8	287.7	278.6	-2.0	-0.7%	-23.2	-7.7%	-9.1	-3.2%
Centralised expenses	193.1	181.3	176.9	185.0	-8.2	-4.2%	3.6	2.0%	8.0	4.5%
Projects and studies	255.7	231.5	223.5	229.9	-25.7	-10.1%	-1.5	-0.7%	6.4	2.9%
BALANCE										
Annual balance	-8.5	29.5	74.7	84.8	93.3		55.4		10.2	
Capital repayment allocated to the budget (Fortis, FIPOI 1, 2 and 3)	-25.1	-25.1	-25.1	-25.1	0.0		0.0		0.0	
Recapitalisation pension fund	-60.0	-60.0	-60.0	-60.0						
Annual balance allocated to budget deficit	-93.6	-55.6	-10.4	-0.3	93.3		55.4		10.2	
-Cumulative balance ²	-118.1	-173.7	-128.5	-118.4	93.3		55.4		10.2	

Initial

Revised

PRE

Result

Previous years (comparing final budget to out-turn)

(in MCHF, rounded off)	2011			2012			2013			2014			2015			2016		
	Final Budget	Out-Turn	Variation	Final Budget	Out-Turn	Variation	Final Budget	Out-Turn	Variation	Final Budget	Out-Turn	Variation	Final Budget	Out-Turn	Variation	Final Budget	Out-Turn	Variation
REVENUES	1,199.0	1,186.5	12.7	1,174.7	1,186.5	11.9	1,189.1	1,185.5	-3.6	1,201.3	1,192.0	20.0	1,221.6	1,272.0	-49.4	1,227.5	1,238.0	-10.5
Of which Member States' contributions	1,097.2	1,097.2		1,082.2	1,082.2		1,082.2	1,082.2	0.0	1,099.6	1,099.6	0.0	1,108.8	1,048.8	-60.0	1,119.7	1,119.7	0.0
EXPENSES	1,075.6	996.4	-79.2	1,165.9	1,078.6	-87.3	1,246.5	1,139.6	-106.9	1,251.3	1,139.5	-111.9	1,266.0	1,088.2	-177.7	1,237.0	1,159.0	-82.8
Scientific programmes	529.2	413.3	-115.9	529.2	413.3	-115.9	572.9	433.3	-139.6	572.9	433.3	-139.6	493.8	115.1	-380.4	506.7	459.7	-47.0
Infrastructure and services	238.5	247.6	9.1	273.2	254.9	-18.3	299.7	277.2	-22.5	324.8	277.3	-47.5	310.7	283.8	-26.8	303.6	293.6	-10.0
Centralised expenses	209.3	198.7	-10.5	200.6	197.6	-3.0	167.7	167.3	-0.4	174.0	172.3	-1.4	209.3	199.9	-9.4	193.1	193.0	-0.1
Projects and studies	130.1	116.8	-13.3	163.0	136.8	-26.2	206.9	166.7	-40.2	219.2	179.3	-39.9	252.7	169.1	-83.6	255.7	229.9	-25.7
BALANCE																		
Annual balance	123.4	215.3	91.9	8.8	108.0	99.2	-57.4	45.9	103.3	-45.8	66.0	131.8	-44.3	84.0	128.3	-8.5	81.8	93.3
Other expenses	-81.2	-83.6	-2.4	-81.9	-84.3	-2.4	-85.4	-85.4	0.0	-86.2	-86.2	0.0	-84.3	-117.0	-32.6	-85.1	-85.1	0.0
Annual balance allocated to budget deficit	42.2	131.7	89.5	-73.1	23.7	96.8	-142.8	-39.5	103.3	-132.0	-0.2	131.8	-128.7	-33.0	95.7	-93.6	-0.3	93.3
-Cumulative balance-	-159.8	-70.3	89.5	-143.4	-46.6	96.8	-189.4	-86.1	103.3	-218.1	-85.1	133.0	-213.8	-118.1	95.7	-211.7	-118.4	93.3

Differences for CBD: 89.5 96.8 103.3 133.0 95.7 93.3

Not an *accumulating* difference, but a constant “*travelling wave*” of about 100 MCHF with a reducing trend (e.g. project scheduling becoming more robust)