

The Gas Team and the LHC gas systems: introduction

Outlook

- Gas Systems Team organization
- Experiment/detectors contact persons, egroups
- M&O Budget update
- Other ALICE projects/activities
- Conclusions

Gas Systems Team organization

First level contacts for non urgent matters:

Gas system sites responsible:

- ALICE: Louis-Philippe De Menezes
- ATLAS: Mattia Busato
- CMS: Andrea D'Auria
- LHCb: Patrick Carriè

They are your first contact for any gas system issue

If you write an email, please put in cc gassystems.support@cern.ch :

- we will treat your email in case of absence of the site responsible
- your email will create a jira ticket that will allow (you and us) to follow the issue reported

Second level contacts for non urgent matters:

M&O contact persons: Beatrice Mandelli, Gianluca Rigoletti

Project leader: Roberto Guida

1st contact for any urgent issue: gas piquet 162516

Gas Systems Team organization

Roberto
Project leader



Kacper
ATLAS and Pumps



Gianluca
Software, LHC-M&O,
ATLAS and R&D



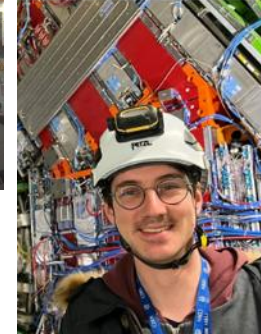
Louis-Philippe
ALICE, CLOUD



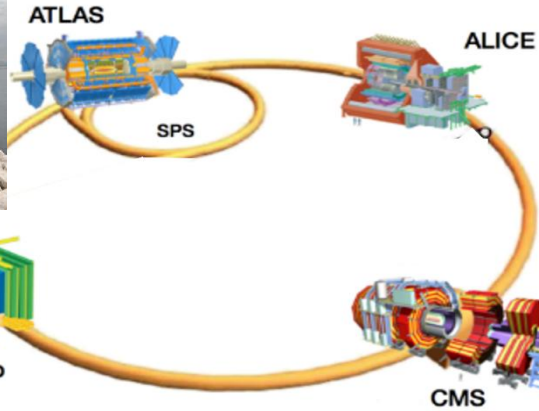
Gianluca
Software, LHC-M&O,
ATLAS and R&D



Mattia V.
ALICE, R&D



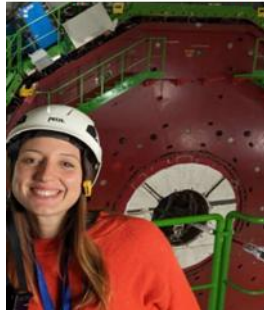
Students: Doct, Tech, Trainee



Beatrice
R&D and LHC-M&O



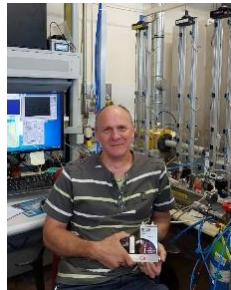
Maria Cristina
Analytical chemistry



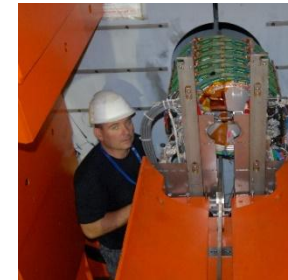
Amin, Damiano
Gas recuperations



Patrick
LHCb and electrical
Spare parts (electrical)



Andrea
CMS



Frederic
Gas & Cooling workshop
Spare parts (mechanical)



Stefania
R&D



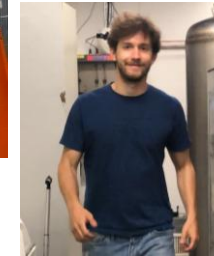
Bonaventura
Maintenance analysis,
EAM/Infor and Pumps



Pieter
LHCb, R&D



Mattia B.
CMS, CLOUD
and R&D



Gas Systems Team organization

Roberto
Project leader



Mattia B.
ATLAS, CLOUD
and R&D



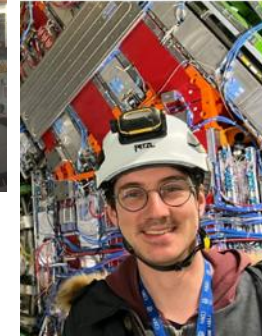
Gianluca
Software, LHC-M&O,
ATLAS and R&D



Louis-Philippe
ALICE, CLOUD



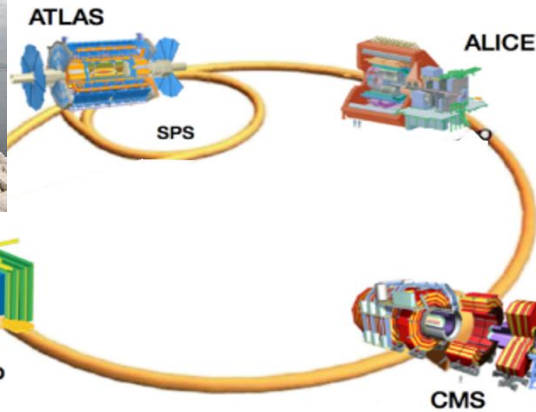
Mattia V.
ALICE, R&D



Gianluca
Software, LHC-M&O,
ATLAS and R&D



Fellow, Doct, Tech, Trainee



Patrick
LHCb and electrical
Spare parts (electrical)



Pieter
LHCb, R&D



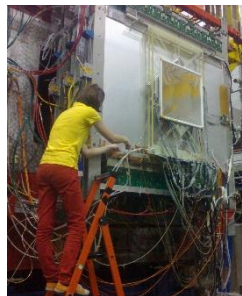
Andrea
CMS and
workshop



Maria Cristina
gas analysis
and CMS



Beatrice
R&D and LHC-M&O



Maria Cristina
gas analysis,
and CMS



Amin, Damiano
Gas recuperations



Stefania
R&D



Bonaventura
Maintenance analysis,
EAM/Infor and Pumps



Detector contact persons

M&O Workpackage Run3 (EDMS 2779718)

8 Annex 1: List of detector gas system experts

List of detector gas system experts for 2022.

8.1 ALICE Gas Systems

Detector	Detector gas system expert
CPV	EVDOKIMOV, Sergey; KHARLOV, Yuri;
HMPID	VOLPE, Giacomo;
MCH	BOREL, Herve; HADJIDAKIS, Cynthia;
MTR	GAGLIARDI, Martino; MARCHISONE, Massimiliano;
TOF	COLOCCI, Manuel; HATZIFOTIADOU, Despina; SCIOLI, Gilda;
TPC	GARABATOS CUADRADO, Chilo;
TRD	GARABATOS CUADRADO, Chilo; BRATRUD, Lars;
Xe recuperation	GARABATOS CUADRADO, Chilo;

Knowledge base for Gas Systems Home - Knowledge base for Gas Systems - Global Site

Experiment	Responsible	Gas System	Status	Remarks	Detector contact person
ALICE	Louis-Philippe De Menezes	TPC	✓ON	Run Mode with nominal Ne, call Chilo first 165327 (don't wait to restart), Don't use backup.	Chilo Garabatos Cuadrado +41754115327
		TRD	✓ON	Run mode. mixer Xenon injecting just when it's needed. call Chilo first 165327 Leak search on going, purifier OFF and in non standard position. maybe alarms on analysis H2O.	CHILO / Lars BRATRUD 0041754117299
		HMPID	✗OFF	Stop with envelopp ON so the pressure in the input of the distribution have always to be Higher the 8mbars	GIACINTO De Cataldo 162827 /Giacomo VOLPE 161650
		TOF	✓ON	RUN with 7% of SF6 in the mixture, backup C2H2F4 (don't wait too much to restart)	MARCO Giacalone 167450 / COLOCCI Manuel 162836 / Sofia Strazzi -----
		MID	✗OFF	System stop and open to air.	Martino GAGLIARDI 0041754113763 / Livia Terlizzi 67896
		MCH	✓ON	Nominal Run with humidifier	Livia Terlizzi 67896 / Christophe Suire 162257
		CPV	✗OFF	Stop (for the moment no date of restart, certainly never)	Yuri KHARLOV 0041227676305 / ALEKSANDROV Dmitry 161161

Detector contact persons

Egroup for communications between gas team and experiments.

Free subscription and unsubscription (to facilitate the detector contact persons in keeping the list updated)

For ALICE:
[gas-users-ALICE](#)

Members are:

Name	Type	Login	Email	Comm
AUGUSTINUS, Andre (EP-AID-DC)	Person	AUGUST	Andre.Augustinus@cern.ch	Self added member
BERDNIKOVA, Anastasia (EP-UAI)	Person	ABERDNIK	anastasia.berdnikova@cern.ch	
BOREL, Herve (EP-UAI)	Person	BOREL	herve.borel@cea.fr	MCH user
CARNESECCHI, Francesca (EP-AID-DT)	Person	FCARNESE	francesca.carneseccchi@cern.ch	TOF user
COLOCCI, Manuel (EP-UAI)	Person	MCOLOCCI	manuel.colocci@cern.ch	TOF user
DE MENEZES, Louis-Philippe (EP-DT-FS)	Person	LSOBRALD	Louis-Philippe.Sobral.De.Menezes@cern.ch	ALICE gas expert
DI MAURO, Antonello (EP-AID-DT)	Person	DIMAURO	Antonio.Di.Mauro@cern.ch	Alice gas coordinator
EDER, Tabea Maria (EP-UAI)	Person	TEDER	tabea.maria.eder@cern.ch	Self added member
EVDOKIMOV, Sergey (EP-UAI)	Person	SEVDOKIM	sergey.evdokimov@cern.ch	CPV user contact
GAGLIARDI, Martino (EP-UAI)	Person	MGAGLIAR	Martino.Gagliardi@cern.ch	MTR user 1er person to contact
GARABATOS CUADRADO, Chilo (EP-UAI)	Person	CHILO	chilo.garabatos.cuadrado@cern.ch	TPC and TRD user
GUIDA, Roberto (EP-DT-FS)	Person	GUIDAR	Roberto.Guida@cern.ch	Self added member
GUPTA, Anik (EP-UAI)	Person	ANIK	Anik.Gupta@cern.ch	PMD user contact
HATZIFOTIADOU, Despina (EP-UAI)	Person	DESPINA	despina.hatzifotiadou@cern.ch	TOF user
KAPUSNIAK, Kacper (EP-DT-FS)	Person	KKAPUSNI	kacper.kapusniak@cern.ch	
KHARLOV, Yuri (EP-UAI)	Person	KHARLOV	Yuri.Kharlov@cern.ch	CPV/PHOS user contact
MANDELLI, Beatrice (EP-DT-FS)	Person	BMANDELL	beatrice.mandelli@cern.ch	Self added member
RIGOLETTI, Gianluca (EP-DT-FS)	Person	GRIGOLET	gianluca.rigoletti@cern.ch	Self added member
SCIOLI, Gilda (EP-UAI)	Person	SCIOLI	Gilda.Scioli@cern.ch	TOF user contact
SELYUZHENKOV, Ilya (EP-UAI)	Person	ISELIOUJ	ilya.selyuzhenkov@gmail.com	Self added member
TAURO, Arturo (EP-AIO)	Person	ATAURO	Arturo.Tauro@cern.ch	
VOLPE, Giacomo (EP-UAI)	Person	GVOLPE	Giacomo.Volpe@cern.ch	HMPID user contact

To facilitate communication add:
- detector
- On-call numbers

names to add/remove?

Gas systems elog

Egroup for elog notification

Free subscription and unsubscription (to facilitate the detector contact persons in keeping the list updated)

For ALICE:

[gas-users-ALICE-ELOG](#)

Members are:

Name	Type	Login	Email	Comments
AUGUSTINUS, Andre (EP-AID-DC)	Person	AUGUST	Andre.Augustinus@cern.ch	
BERDNIKOVA, Anastasia (EP-UAI)	Person	ABERDNIK	anastasia.berdnikova@cern.ch	
BOREL, Herve (EP-UAI)	Person	BOREL	herve.borel@cea.fr	
CARNESECCHI, Francesca (EP-AID-DT)	Person	FCARNESE	francesca.carnesecchi@cern.ch	TOF coordinator
COLOCCI, Manuel (EP-UAI)	Person	MCOLOCCI	manuel.colocci@cern.ch	
DE MENEZES, Louis-Philippe (EP-DT-FS)	Person	LSOBRALD	Louis-Philippe.Sobral.De.Menezes@cern.ch	
DI MAURO, Antonello (EP-AID-DT)	Person	DIMAURO	Antonio.Di.Mauro@cern.ch	
EDER, Tabea Maria (EP-UAI)	Person	TEDER	tabea.maria.eder@cern.ch	Self added member
EVDOKIMOV, Sergey (EP-UAI)	Person	SEVDOKIM	sergey.evdokimov@cern.ch	
GAGLIARDI, Martino (EP-UAI)	Person	MGAGLIAR	Martino.Gagliardi@cern.ch	
GARABATOS CUADRADO, Chilo (EP-UAI)	Person	CHILO	chilo.garabatos.cuadrado@cern.ch	
GUIDA, Roberto (EP-DT-FS)	Person	GUIDAR	Roberto.Guida@cern.ch	Self added member
HATZIFOTIADOU, Despina (EP-UAI)	Person	DESPINA	despina.hatzifotiadou@cern.ch	
KHARLOV, Yuri (EP-UAI)	Person	KHARLOV	Yuri.Kharlov@cern.ch	
MANDELLI, Beatrice (EP-DT-FS)	Person	BMANDELL	beatrice.mandelli@cern.ch	Self added member
PRASAD, Sidharth Kumar (EP-UAI)	Person	SPRASAD	sidharth.kumar.prasad@cern.ch	
QUAGLIA, Luca (EP-UAI)	Person	LQUAGLIA	luca.quaglia@cern.ch	Self added member
SCIOLI, Gilda (EP-UAI)	Person	SCIOLI	Gilda.Scioli@cern.ch	
SELYUZHENKOV, Ilya (EP-UAI)	Person	ISELIOUJ	ilya.selyuzhenkov@gmail.com	
SUIRE, Christophe (EP-UAI)	Person	SUIRE	Christophe.Suire@cern.ch	
TAURO, Arturo (EP-AIO)	Person	ATAURO	Arturo.Tauro@cern.ch	
TERLIZZI, Livia (EP-AIO)	Person	LTERLIZZ	livia.terlizzi@cern.ch	Self added member
VOLPE, Giacomo (EP-UAI)	Person	GVOLPE	Giacomo.Volpe@cern.ch	

M&O budget

- M&O budget ([EDMS 2779718](#)):

Material and personnel costs covered by the M&O agreement

MFCs maintenance

Consumables (lab, tools, connectors, ...)

Gas analysis (calibration gases, materials, O2 cells, maintenance, ...)

Pump maintenance 2000h & 30000 h

Purifier maintenance

Safety valve maintenance

Pneumatic controls

PLC & Power Supply

Pressure sensors (radiation tolerant)

-

Maintenance organization (procedures, reports, ...)

Analysis modules and operation

R&D for upgrade/consolidation

For ALICE:

Up to 2024

→ 133.2 kCHF

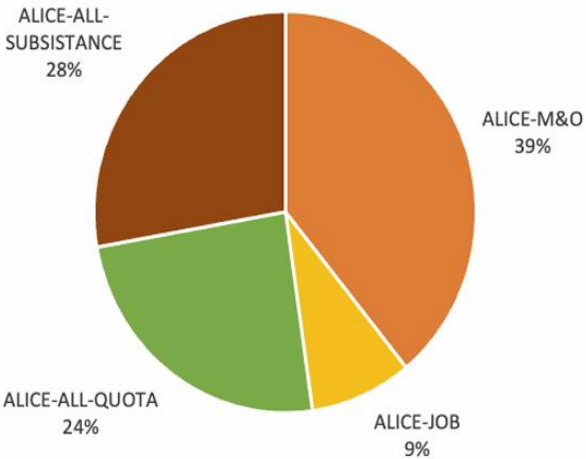
From 2025

→ 161.2 kCHF ([Update to M&O Workpackage \(EDMS 3088231\)](#))

M&O budget 2022 and 2023

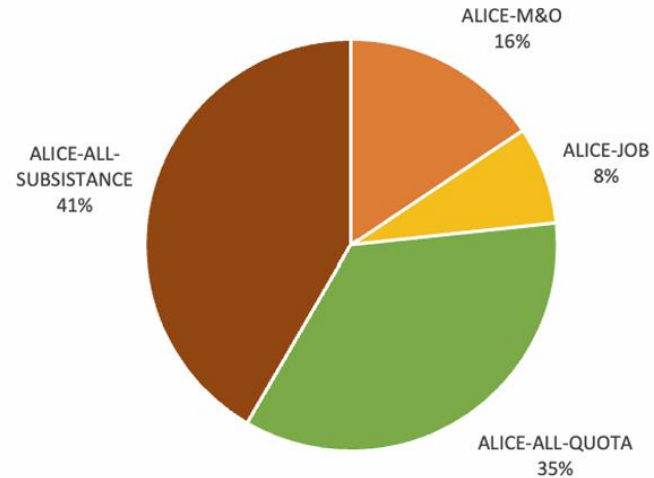
2022

93% budget used



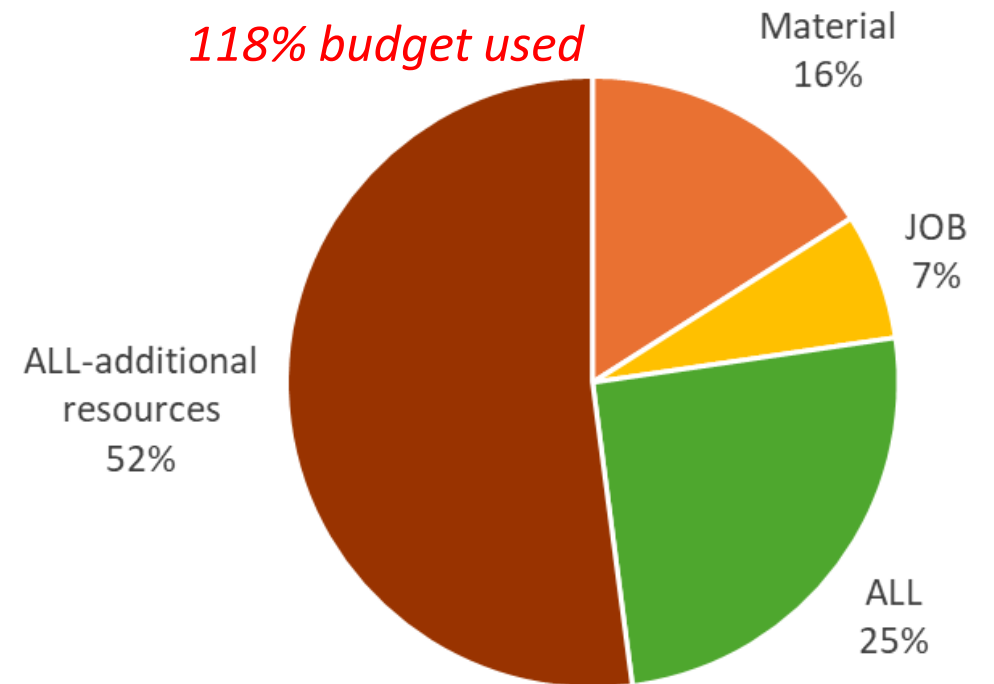
2023

118% budget used



2024

118% budget used



- 1 staff (controls) paid on EP budget (from 2025 back to EP budget thanks to a new LD)
- +1 fellow (controls) paid on M&O (same as above, *from 2025 back to EP budget thanks to a new LD*)
- +1/3 fellow (**3D drawings**) paid on M&O
- +1 fellow for **gas systems operation and flowcells**
- +1/2 fellow for **gas systems operation and gas recuperation**
- +1 tech. student/Doctoral for **EAM/Infor, risk assessment and reliability analysis**
- 1.5 staff technical (*opening of a new LD technical under discussion*)

Other ALICE projects/activities

- **Consolidation/upgrade:**

Material and manpower costs not covered by the M&O agreement

- CPV humidifier ([EDMS 1953961](#))
 - Material 11 k ([TID 7809588](#))
 - Human resources: tbc → LPh
- MCH humidifier ([EDMS 3017496](#))
 - Material ~23 k (TID to be issued → LPh)
 - Human resources: tbc → LPh

<https://its.cern.ch/jira/browse/GASSYSTEMS-246>

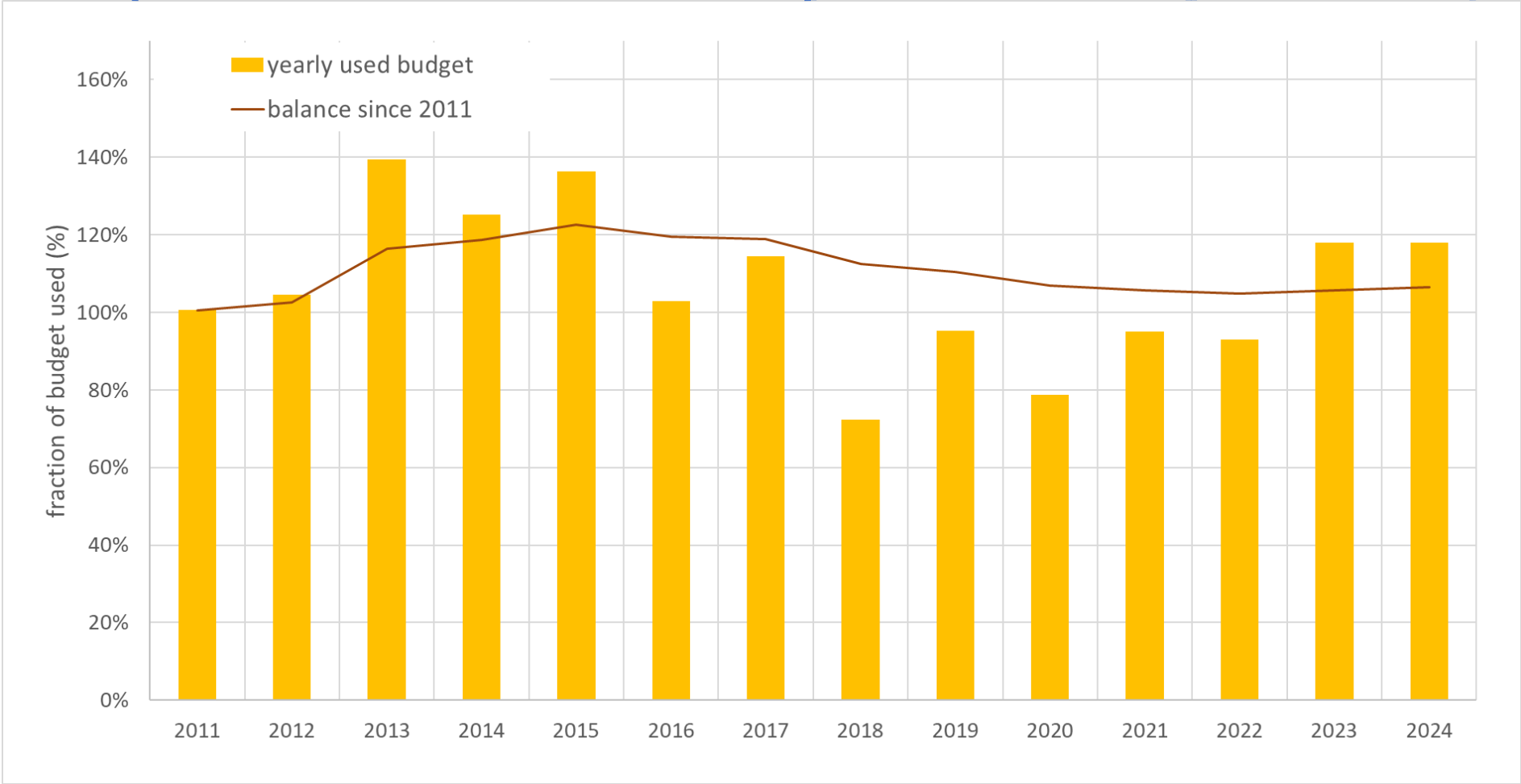
Budget history since 2011

- ALICE gas system budget status since 2011:

M&O only
130 k

M&O + Addendum
130 k + 31 k

New WP
133 k



Conclusions

LHC M&O

- LHC M&O activities are well defined and supported by the M&O agreement.
- budget situation will normalize from 2025 thanks to “update” to M&O workpackage and 1 LD (controls) replacing a fellow
- ~5 fellow, doctoral, technical for new competencies needed:
 - . 3D drawings
 - . EAM/Infor, maintenance and spare parts organization
 - . Flowcells
 - . Operation of gas systems and gas recuperation

Other ALICE projects/activities

- CPV, MCH humidifiers
- Others? New needs?

Beyond M&O budget

- CEPS budget for R&D on new system to optimize GHG usage (examples: improvement of gas systems to cope with new detector needs and R134a, CF4, SF6, C4F10 recuperation plants)
- HostLab for construction of R134a recuperation plants for ATLAS and CMS

LS3

- We need to collect detector needs asap: to anticipate any potential resource issue