irfu

cea

saclay

GRIF

Grille au service de la Recherche en Ile de France

egee Enabling Grids for E-sciencE

ile de France

LCG

The GRIF project

irfu cea saclay — institut de recherche sur les lois fondamentales de l'univers

IPN INSTITUT DE PHYSIQUE NUCLÉAIRE ORSAY

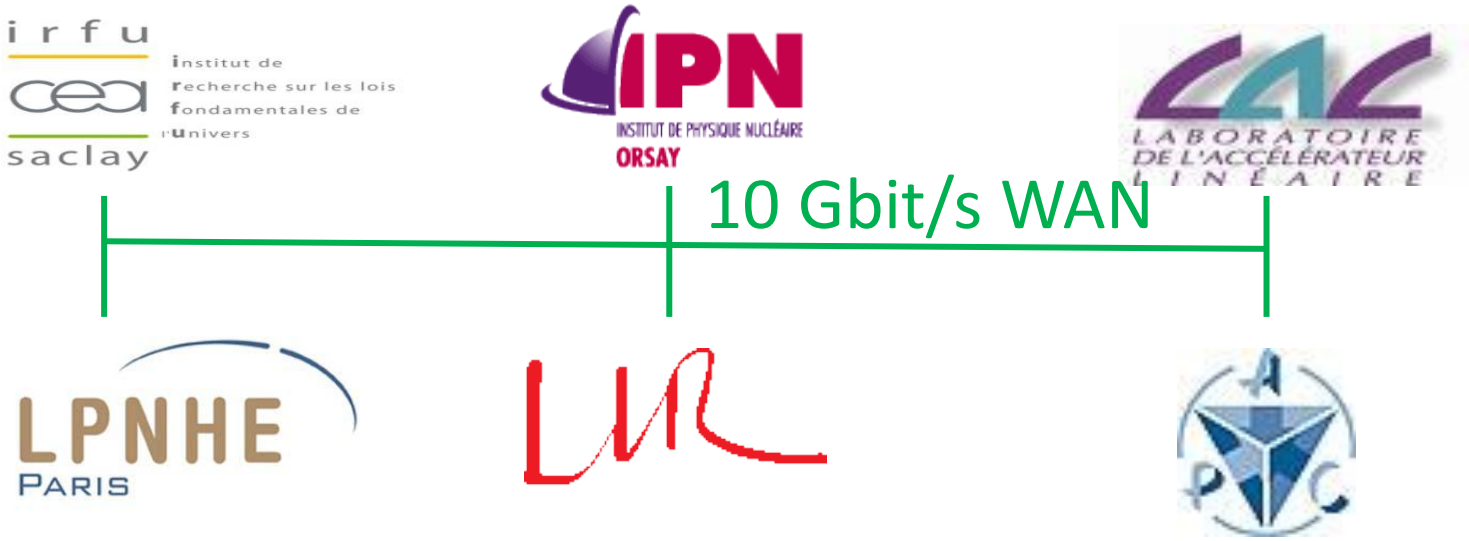
LAL LABORATOIRE DE L'ACCÉLÉRATEUR LINÉAIRE

LPNHE PARIS

LAL

APC

GRIF is
a distributed Tier2/Tier3
(6 sites in the Paris region)



The project started in 2005 with the main goal of building a federated LCG Tier2 grid infrastructure but also cover computing needs of other fields.

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GRIF

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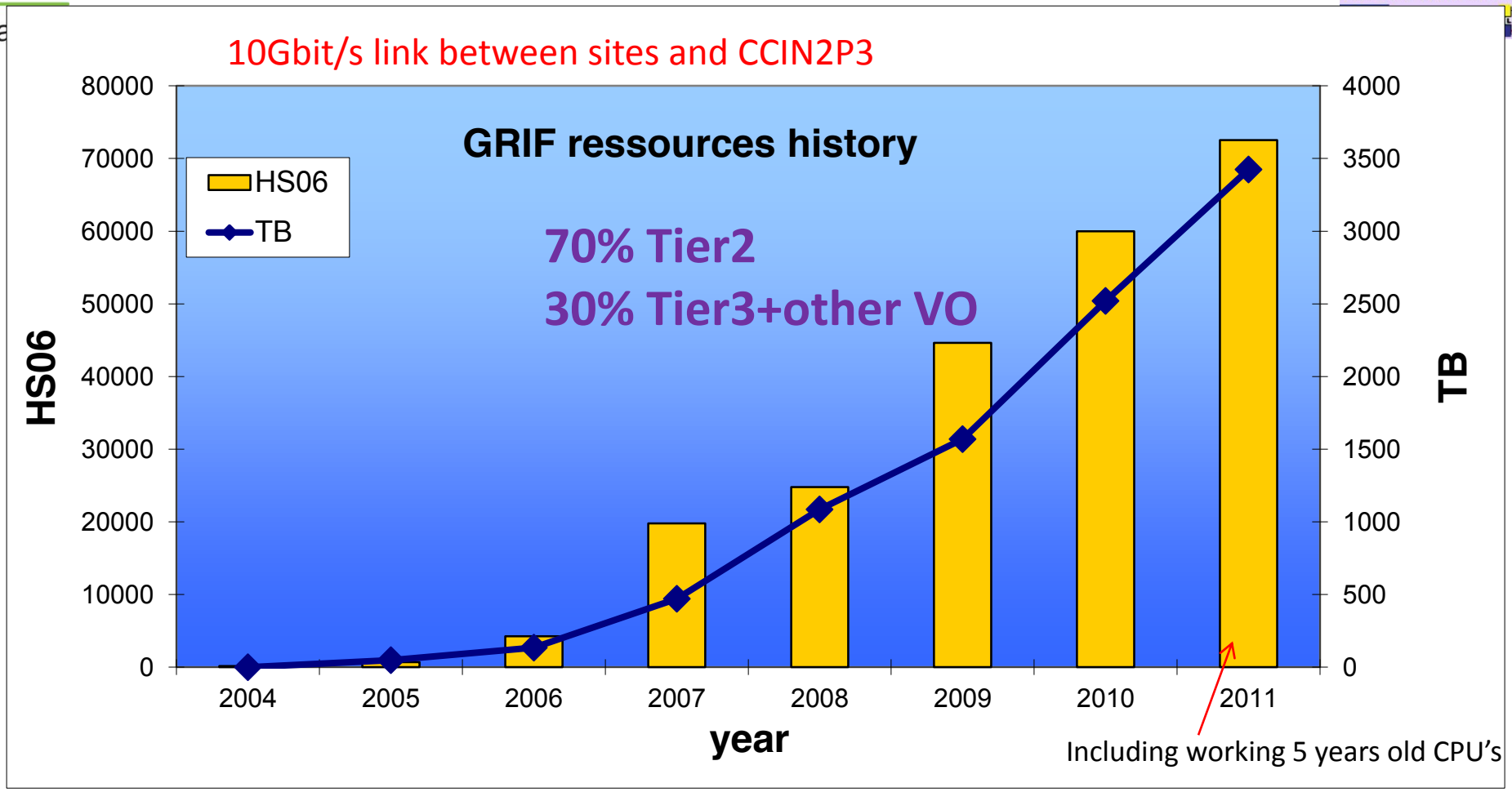
Scientific field	Supported Virtual Organization
Particle physics	ATLAS, CMS, LHCb, ILC, CALICE, D0, SuperNemo, SuperB, GEANT4
Nuclear physics	ALICE, AGATA, QCD, MURE.IN2P3, PANDA.GSI, MCNPX
Earth science	EGEODE, ESR, climate
Chemistry	RadioChimie, CompChem
Life science	Biomed, neugrid, ISC-PIF, eticsprojet
Astronomy	CTA, Planck, Auger, Glast, astro
Thermonuclear fusion	Fusion
Computing	OPS, DTEAM, DestopGird, Proactive
Local activities	APC, LPNHE, IRFU, LAL, LLR, IPNO, PSUD

Around 40 supported virtual organizations

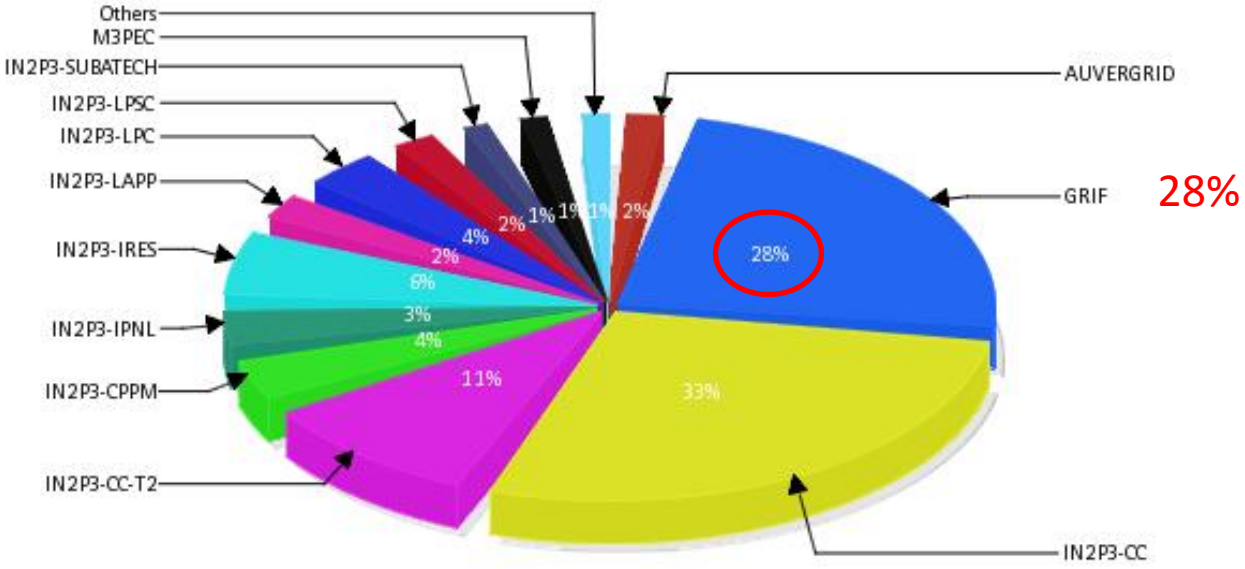
GRIF by numbers



A common technical team of 20 peoples (12 FTE's)
Around 200 users (170 form LHC experiments)

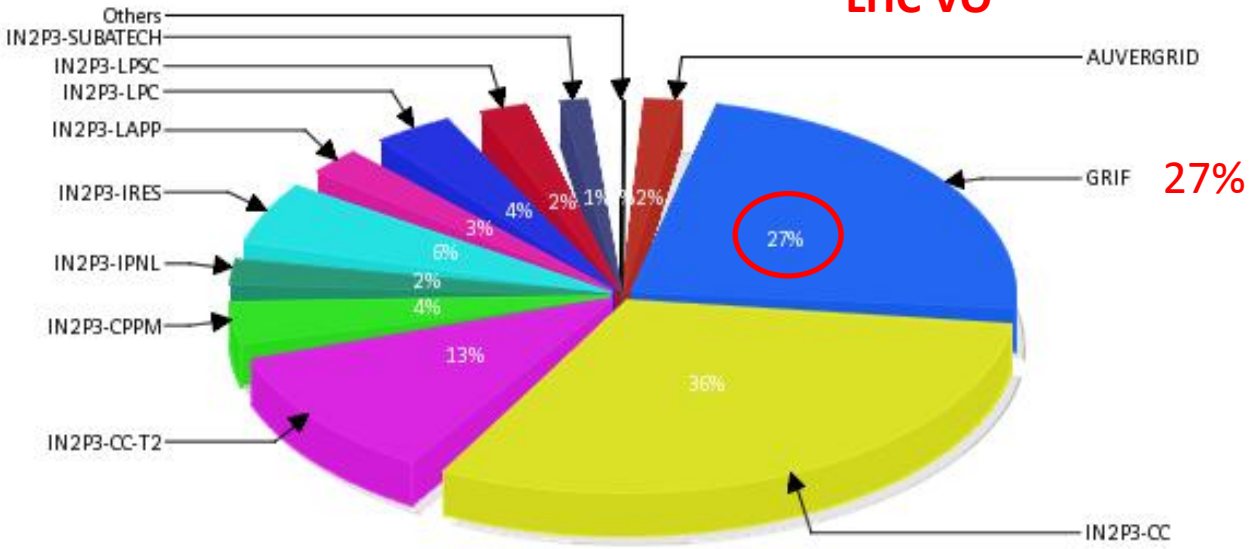
FR- Accounting

ALL VO



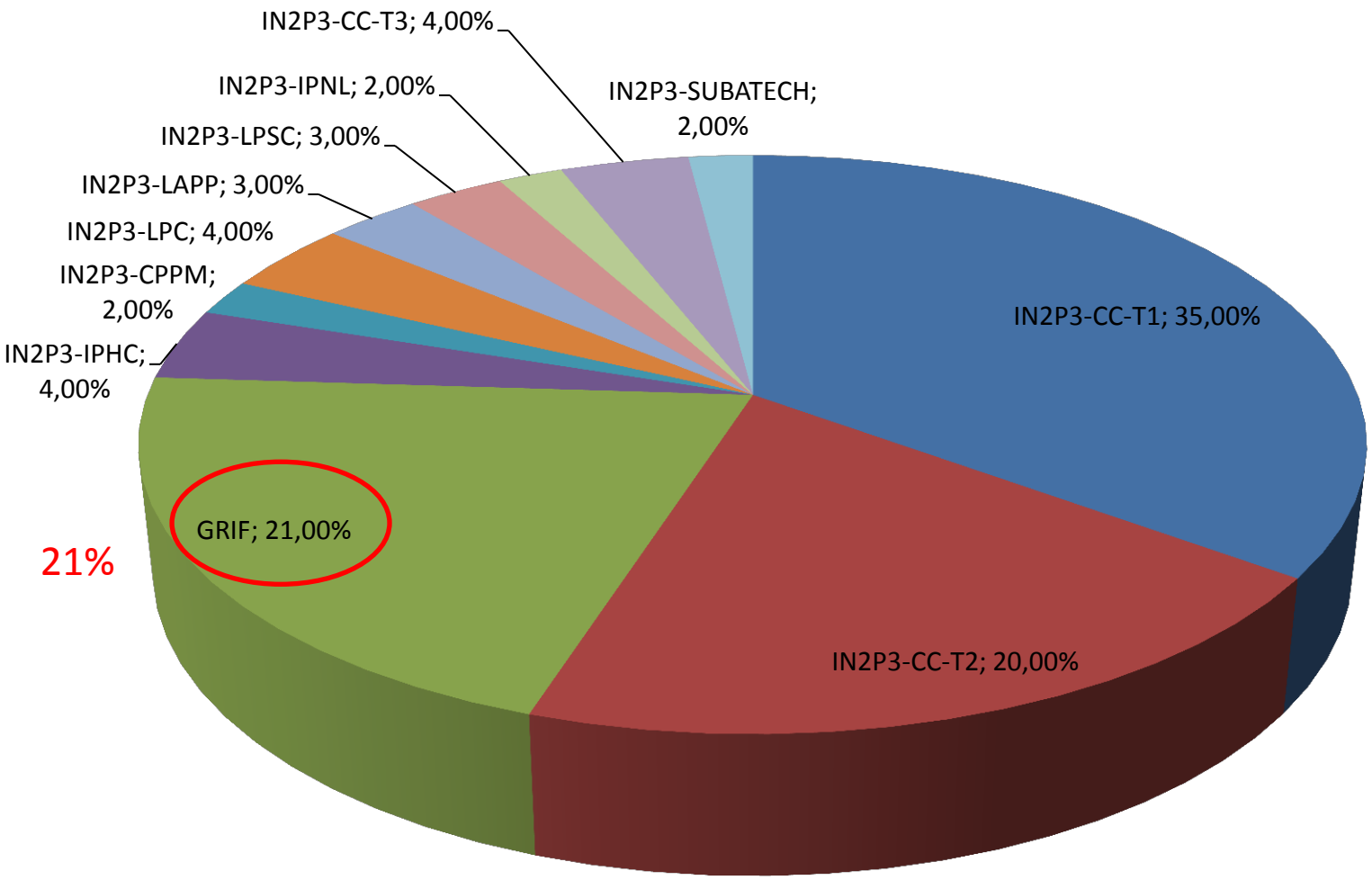
28%

LHC VO

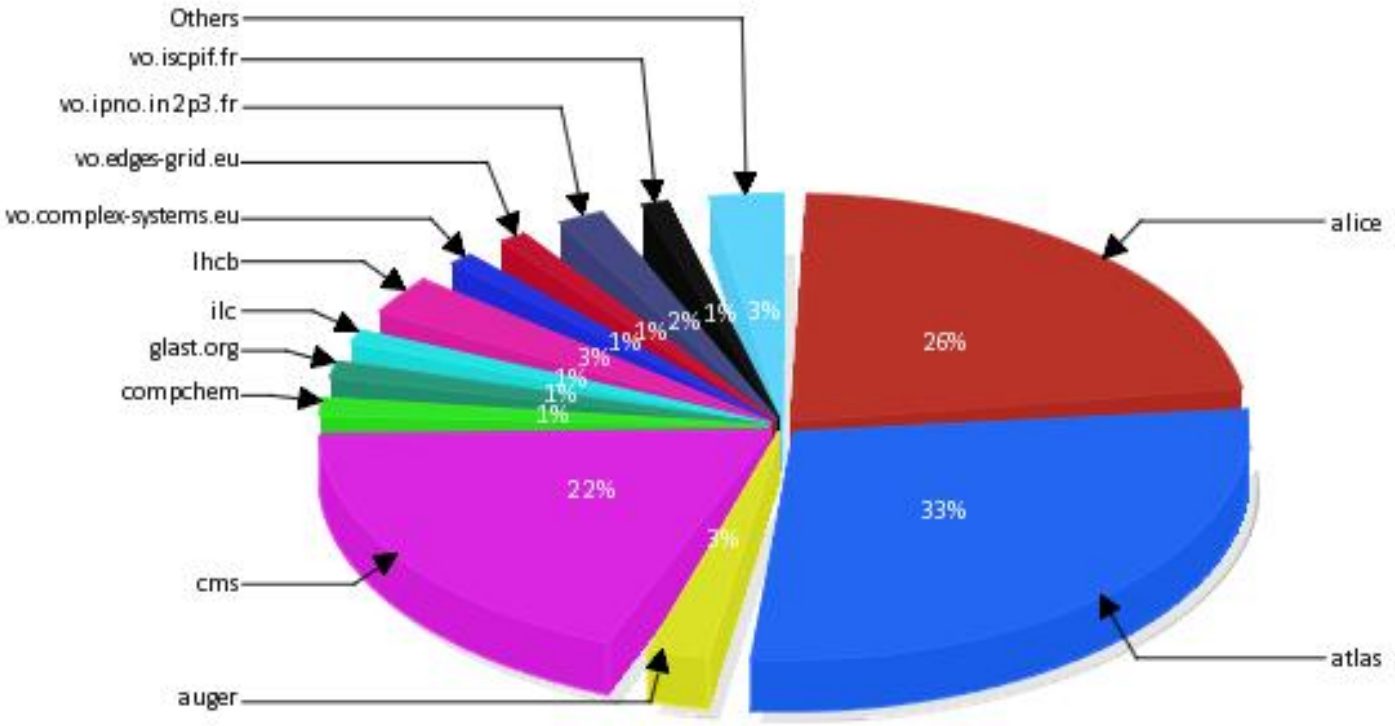


27%

Installed Disk end 2011

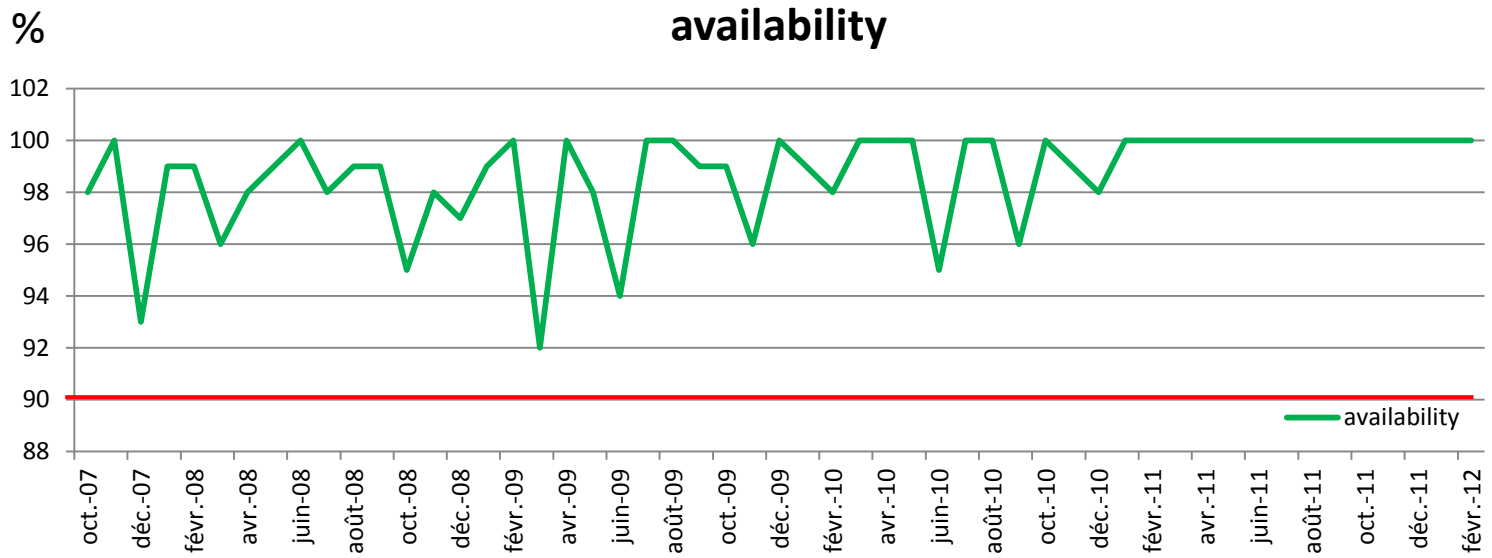


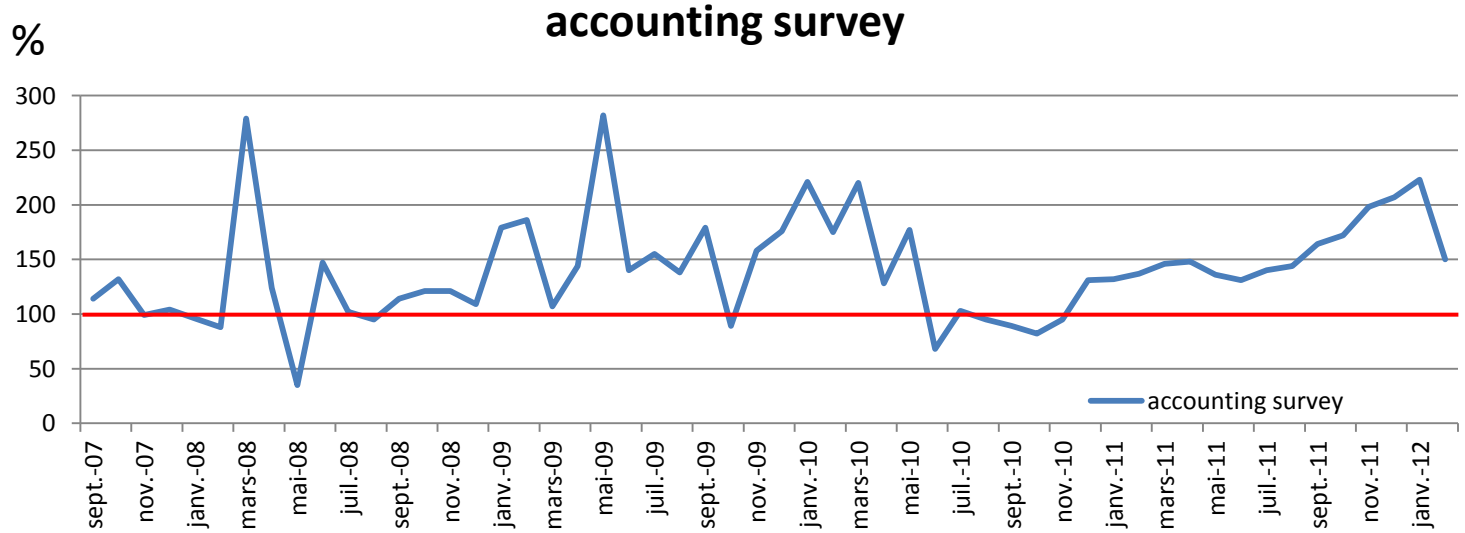
GRIF - Accounting



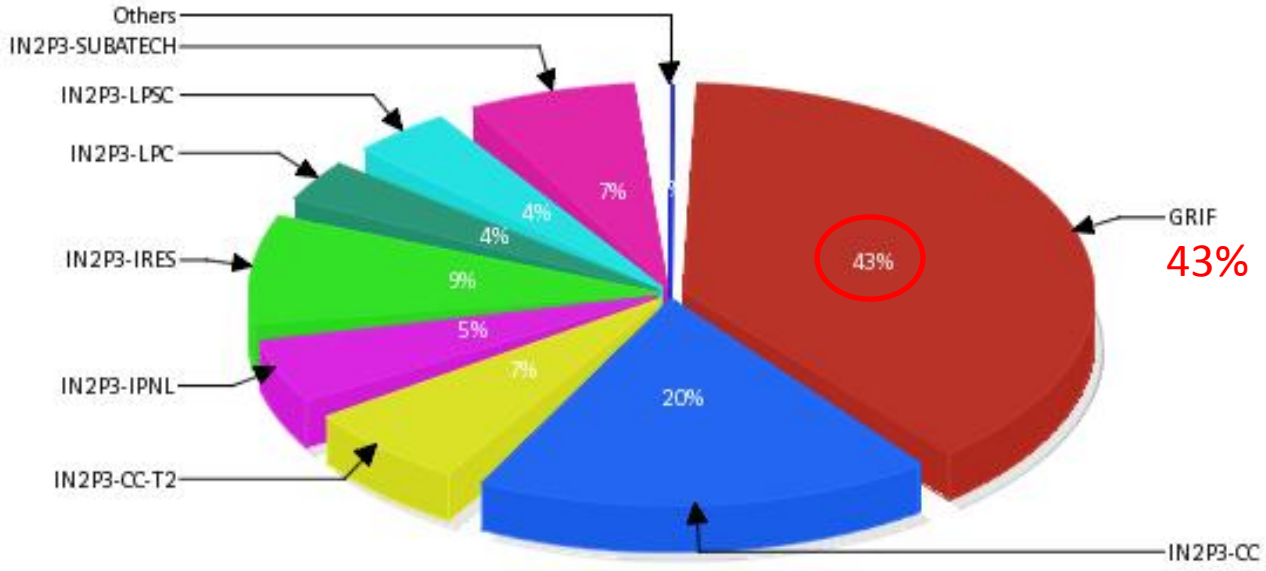
~85% LHC

LCG-View


availability
%
102
100
98
96
94
92
90
88
availability
oct.-07
déc.-07
févr.-08
avr.-08
juin-08
août-08
oct.-08
déc.-08
févr.-09
avr.-09
juin-09
août-09
oct.-09
déc.-09
févr.-10
avr.-10
juin-10
août-10
oct.-10
déc.-10
févr.-11
avr.-11
juin-11
août-11
oct.-11
déc.-11
févr.-12


accounting survey
%
300
250
200
150
100
50
0
accounting survey
sept.-07
nov.-07
janv.-08
mars-08
mai-08
juil.-08
sept.-08
nov.-08
janv.-09
mars-09
mai-09
juil.-09
sept.-09
nov.-09
janv.-10
mars-10
mai-10
juil.-10
sept.-10
nov.-10
janv.-11
mars-11
mai-11
juil.-11
sept.-11
nov.-11
janv.-12

ALICE view

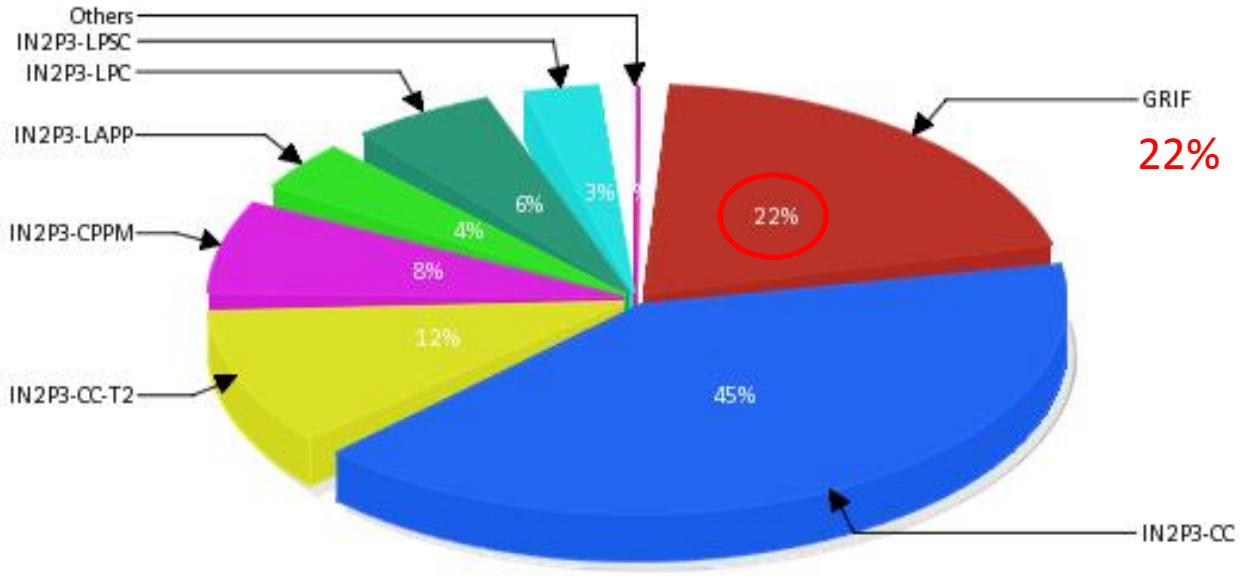


GRIF 43%

GRIF-site	CE	SE	Disk share 2012
IPNO	ipnsl2001	lpnse1	50%
IRFU	node74	node12	50%

380 TB

ATLAS view

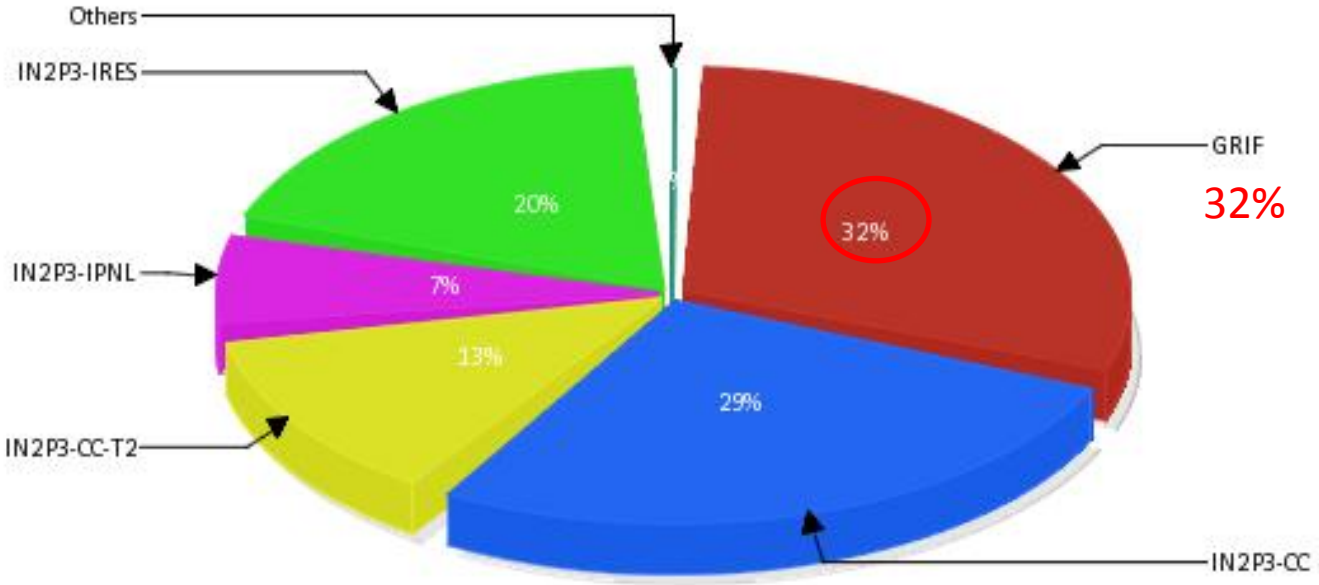


22%

GRIF-site	CE	SE	Disk share 2012
IRFU	node74	node12	40%
LAL	grid10	grid05	27%
LPNHE	Lpnhe-cream	lpnse1	33%

1600 TB

CMS view

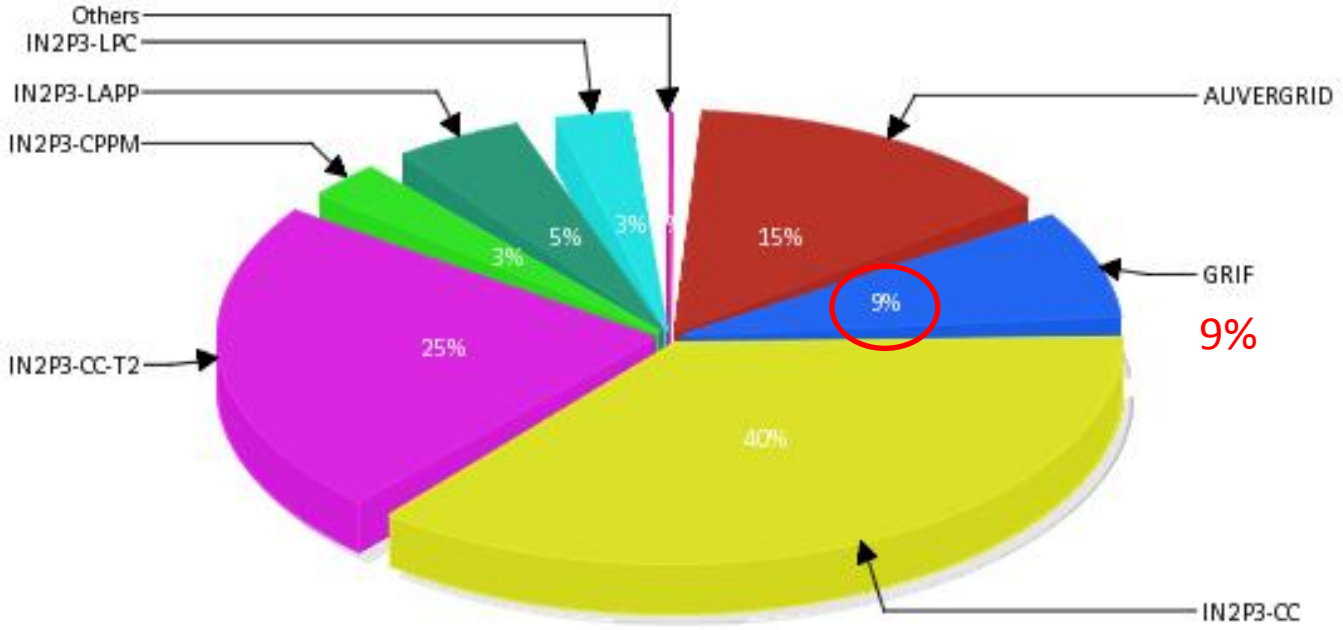


32%

GRIF-site	CE	SE	Disk share 2012
IRFU	node74	node12	50%
LLR	llcream	polgrid4	50%

770 TB

LHCb view



9%

GRIF-site	CE	SE	Disk share 2012
LAL	grid10	grid05	100%

2 TB

Could grow to 50 TB if site is used for reconstruction

Perspectives

- New RENATER POP at CEA → 10Gbit/s direct connection to LHCONE
- Tests with GPU's at LLR (GRIDcl project)
- Project of upgrade of the computing rooms:
  - At Ecole Polytechnique (LLR)
  - At Orsay (IPNO, LAL)

Conclusions

- GRIF is a distributed grid node including a shared Tier2/Tier3 for the 4 LHC VO's.
- GRIF is serving around 200 local users → reactivity and flexibility to user problems (proximity)
- Major advantages of such a configuration are:
  - Redundancy of resources → robustness of access to resources for the users
  - A shared technical team → robustness of the services, common share of technical tasks (solidarity)
  - Visibility in terms of offered resources