

# RUSSIAN SITES IN THE ALICE OFFLINE ON 2-D RUN LHC

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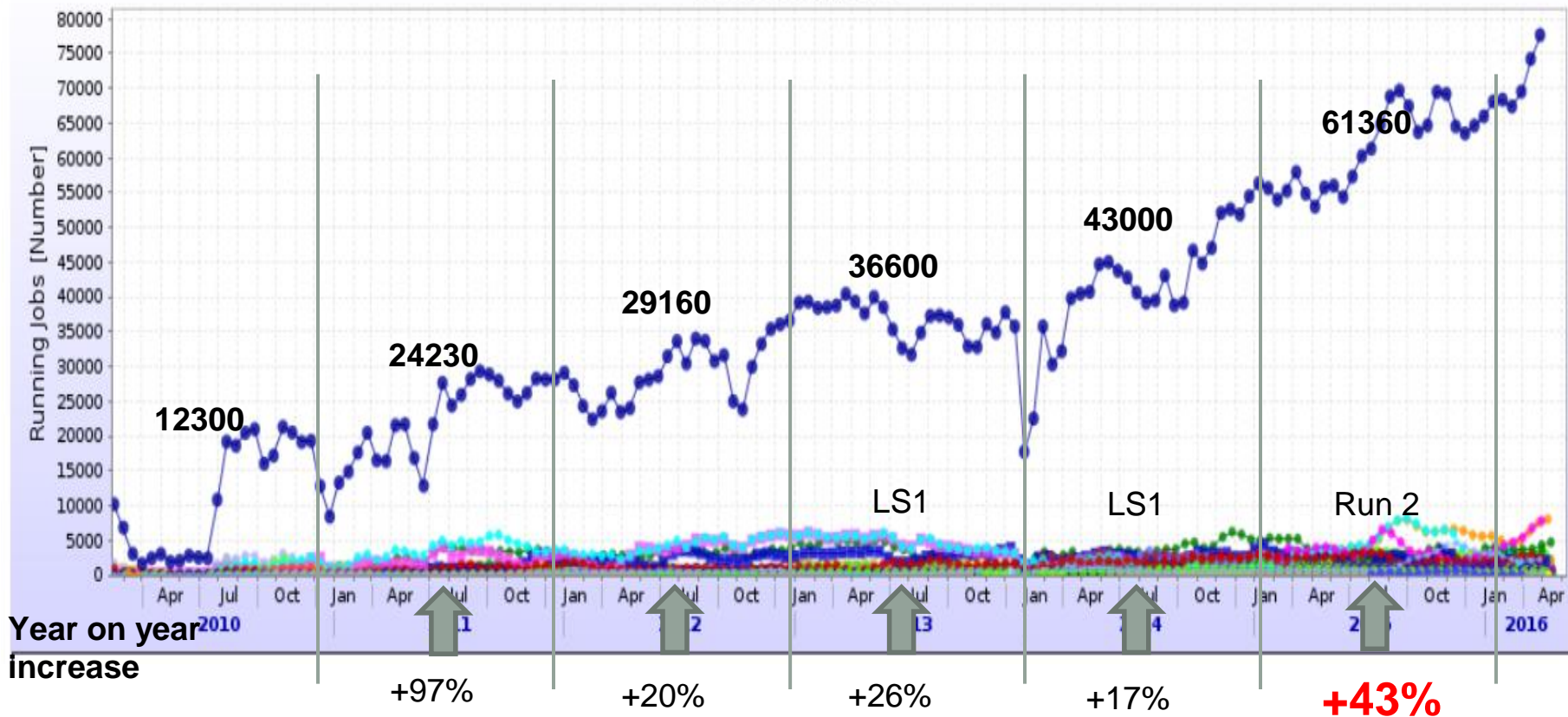
Andrey Zarochentsev  
Saint Petersburg State University

# ALICE GRID



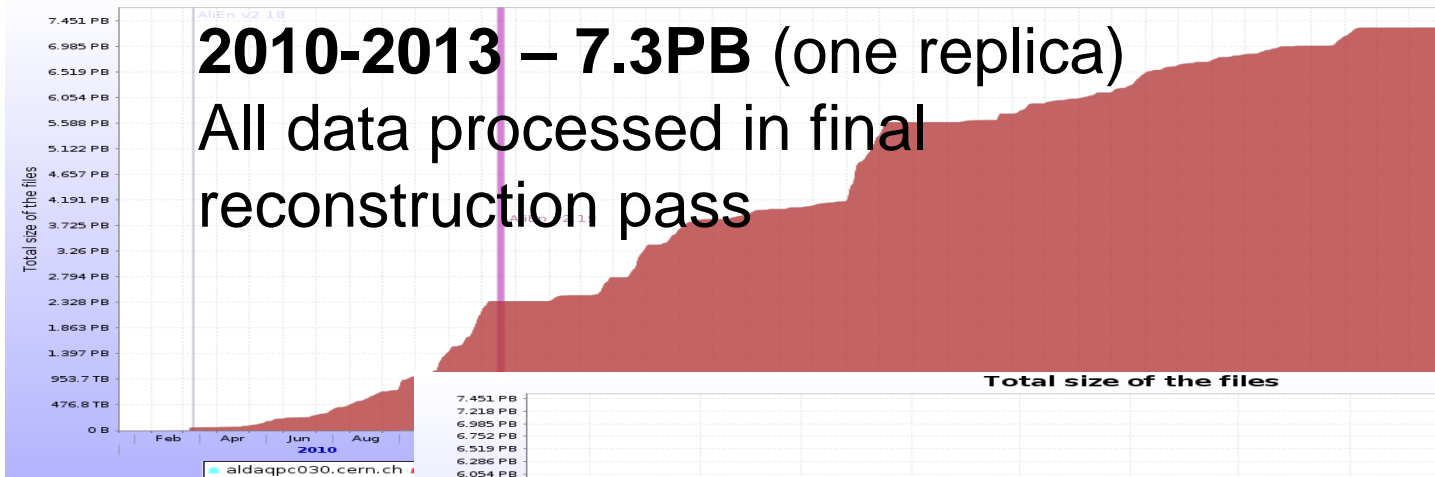
# CPU resources evolution

Running Jobs

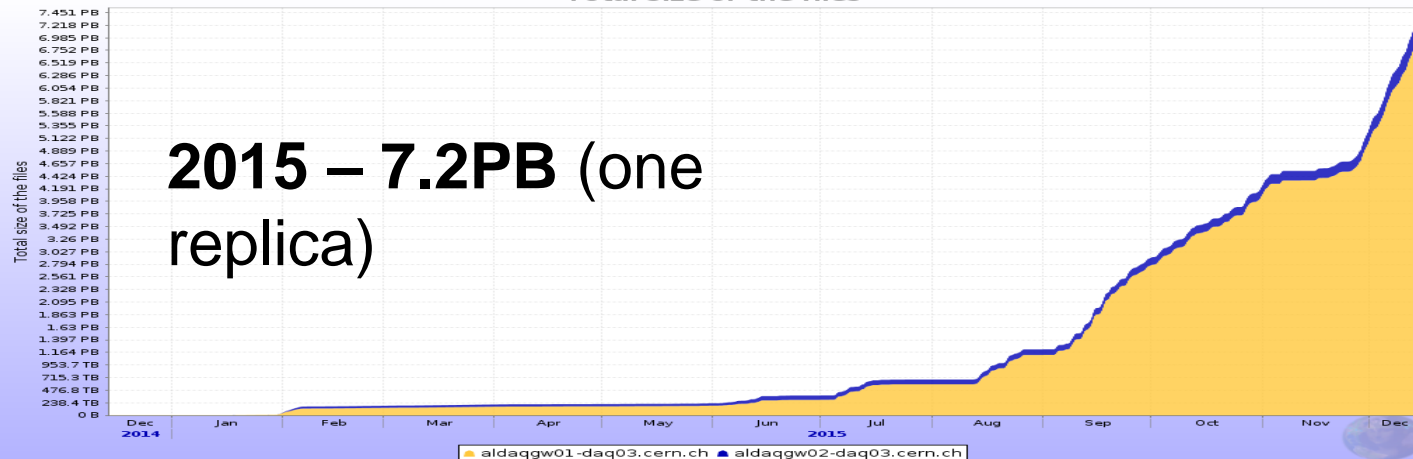


# 2015 RAW data collection

Total size of the files



Total size of the files

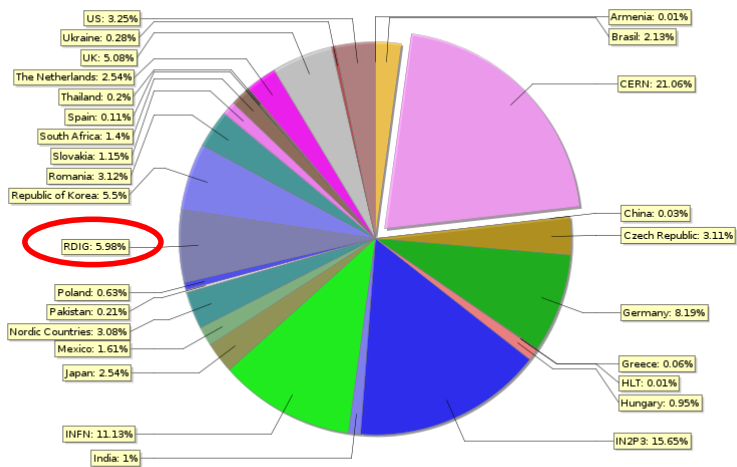


# Alien software update

- Storage
  - Update xrootd to v.4
    - Stable and well supported
    - Required for IPv6 support
  - Installation EOS on new SE
    - multy storage type, multy protocol type, RAIN, Self-healing, working interface, etc...)
- Processing
  - Using Cloud and Super comupter resources
  - AliEn job submission modules for HTCondor and Panda

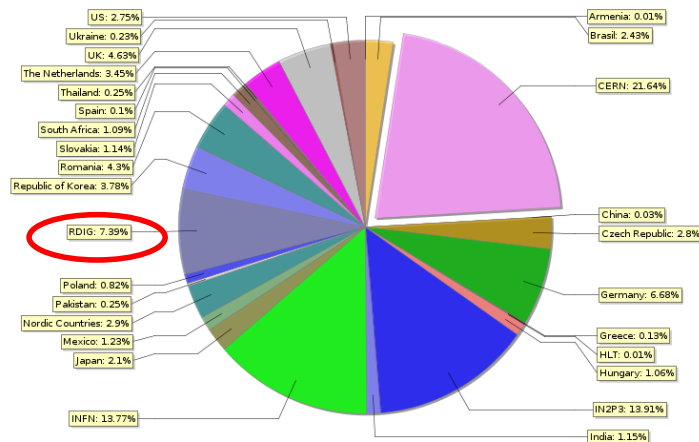
# CPU usage by Federations (from 01,2015)

Total wall time kSI2K hours for ALICE jobs



RDIG  
 KSI2K hours = 5,98%  
 Wall clock hours = 7,39%

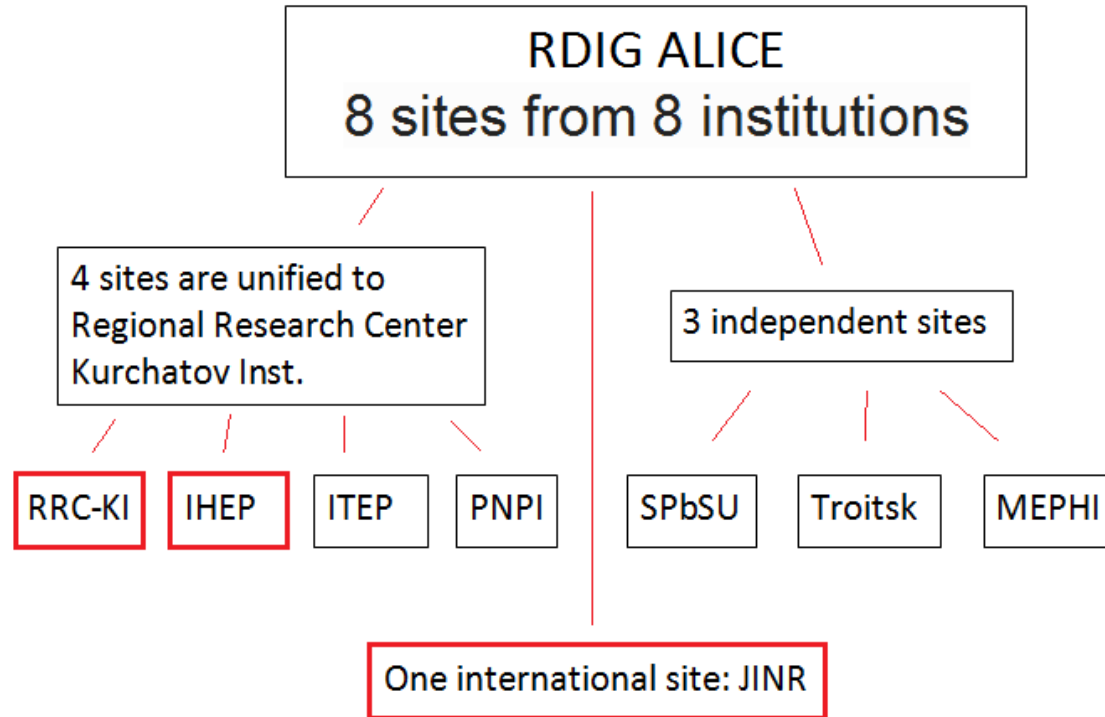
Total wall clock hours for ALICE jobs



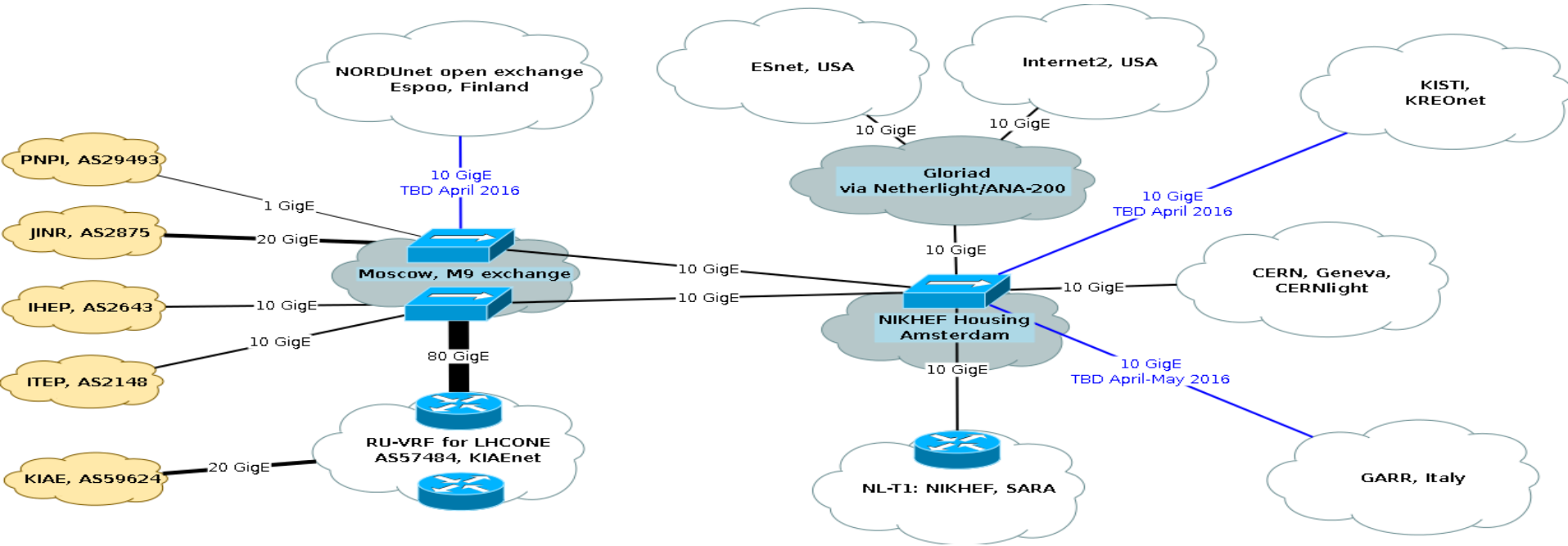
● Armenia ● Brasil ● CERN ● China ● Czech Republic ● Germany ● Greece ● HLT ● Hungary ● IN2P3 ● India ● INFN ● Japan ● Mexico ● Nordic Countries ● Pakistan ● Poland ● RDIG ● Republic of Korea ● Romania ● Slovakia ● South Africa ● Spain ● Thailand ● The Netherlands ● UK ● Ukraine ● US

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# Russian sites in the Alice offline



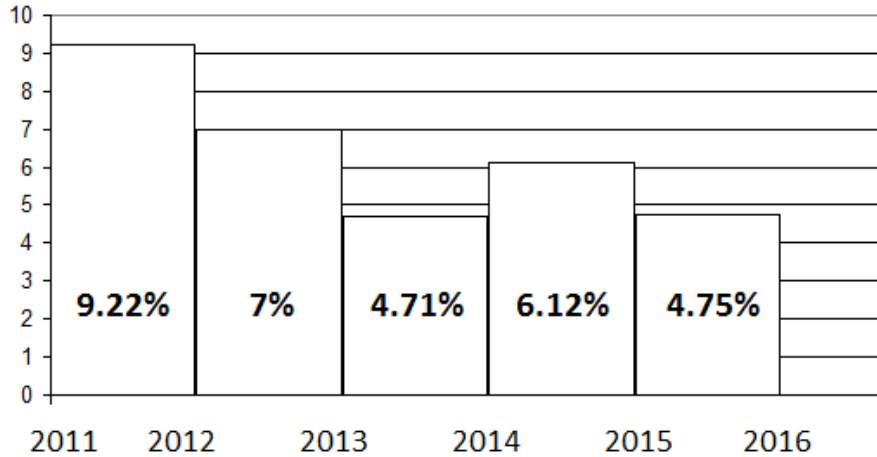
# Network topology



TROITSK, MEPH and SPbSU have individual connections



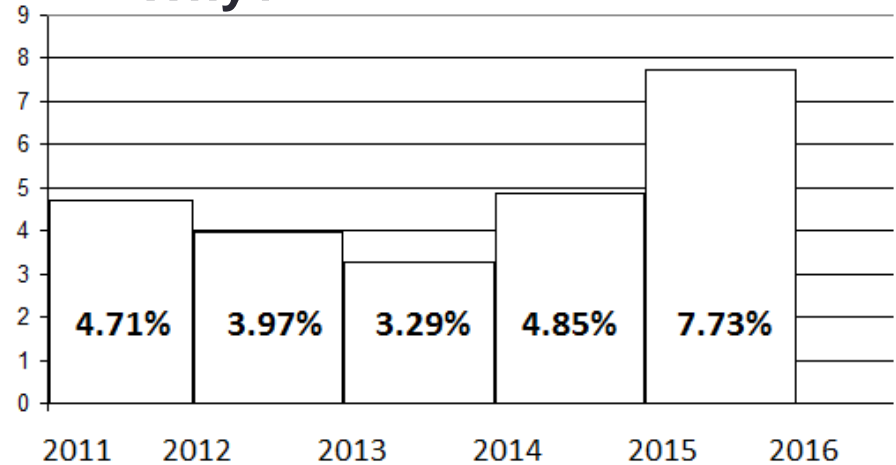
# RDIG production from April 2011 till April 2016



DONE JOBS

Old CPUs, network problems, small sites...

CPU time share is growing, but the percentage of done jobs decreases.... Why?



Total CPU hours for ALICE jobs

# RDIG resources in 2016

	HEP SPEC2006/slot		HEP SPEC2006 For ALICE in 2016	Disks (TB)		CE vs 2015
	2015 year	2016 year		2015 year	2016 year	
SPbSU	8,00	11,77	4 804,00	58,00	128,00	+280 Cores/ 13,5 HepSpec06
PNPI	11,00	11,00	660,00	44,00	44,00	
JINR	10,40	12,00	5 136,00	428,00	448,00	Update CPU HS 10,4 to 12
RRC-KI	11,00	11,00	3 300,00	330,00	330,00	
Troitsk	9,28	9,28	320,16	116,00	116,00	
ITEP	9,00	9,00	1 575,00	139,00	139,00	
IHEP	8,60	8,60	5 667,40	270,00	270,00	
MEPHI	8,74	8,74	769,12	40,00	40,00	
<b>SUM</b>			22 231,68		1 515,00	
<b>REBUS PLEDGES</b>			<b>21679</b>		<b>1568</b>	
%			107		97	

# Software update on Russian sites.

Site name	xrootd version
SPbSU	v4.2.2, EOS v0.3.160 on xrootd v3.3.6 on CentOS 7
PNPI	v4.3.0
JINR	v3.3.4 – Update in progress with hardware upgrade (to EOS)
RRC-KI	v4.1.1.
Troitsk	v4.3.0
ITEP	v20140506-4d557f2 from tarball on Debian
IHEP	v4.2.3
MEPHI	EOS v0.4.19 on xrootd v4.3.0

# Conclusions

- Hardware update on JINR and on SPbSU
- Most of the sites connected to LHCONE
- The last version of xrootd installed (or being installing) on all sites
- All sites work pretty stable
  
- Plans:
- Connect other sites to LHCONE
- Include new sites to WLCG
- Add new site in Sarov

Thank you for your attention!