

European Grid Infrastructure

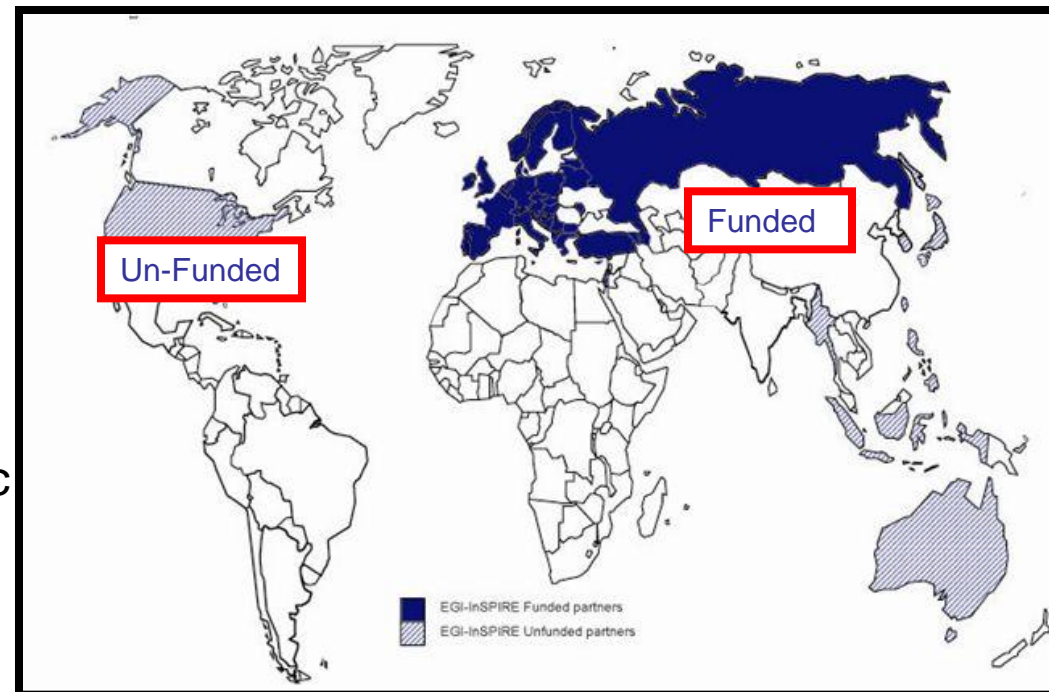
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Integrated Sustainable Pan-European Infrastructure for Researchers in Europe

- A 4 year project
 - Project cost €72M
 - Effort: 9261PMs
 - 51 partners
 - EGI.eu, 40NGIs,
8 institutes from Asia Pacific



The European Grid Infrastructure

What is happening now?

~306,000 CPUs (cores)

~155Pb disk

~150Pb tape

~38 million jobs/month

350 sites

59 countries

~70 active VOs

Grid Real Time Monitor:

<http://gridportal.hep.ph.ic.ac.uk/rtm>

Imperial College
London



GridPP

UK Computing for Particle Physics

Usage metrics Nov 2012		Value
CPU wall clock time	Million hour/day	50.6
Jobs	Average Job/day (Million)	1.8
Distribution of usage (main disciplines)	High-Energy Physics	88.23%
	Astronomy and Astrophysics	2.00%
	Life Science	1.11%
	Remaining disciplines	8.40%

- **Grid Infrastructure**
 - CY-01-KIMON
- **Cloud Infrastructure**
 - NEPHEALE
- **eMammoth**
 - Compute and Store on Grids and clouds Infrastructure

Infrastructure & Services

CyGrid - Cyprus National Grid
Infrastructure

Resource Centers:

University of Cyprus

- Logical CPUs (cores): 140
- Storage capacity: 3.5 TB
- Main Memory: 164 GB
- Operating System:
 - Scientific Linux 5.8
- Middleware: gLite, EMI



- **Grid Services**
 - Berkeley Database Information Index BDII (bdii101.grid.ucy.ac.cy)
 - Workload Management System (wmslb101.grid.ucy.ac.cy)
 - Computing element (ce101.grid.ucy.ac.cy)
 - Storage Element (plethon.grid.ucy.ac.cy)
 - User interface (ui101.grid.ucy.ac.cy)
 - Monitoring System (mon101.grid.ucy.ac.cy)
 - SAM Nagios (cygrid-nagios.grid.ucy.ac.cy)
 - Worker Nodes ({{wn107-wn141}.grid.ucy.ac.cy)
- **Lab services**
 - euclid.grid.ucy.ac.cy (8 CPUs 24GB RAM)
 - thales.grid.ucy.ac.cy
 - svn, cvs

- Logical CPUs (cores): 144
- Storage capacity: 10.0 TB
- Main Memory: 512 GB
- Middleware: Eucalyptos

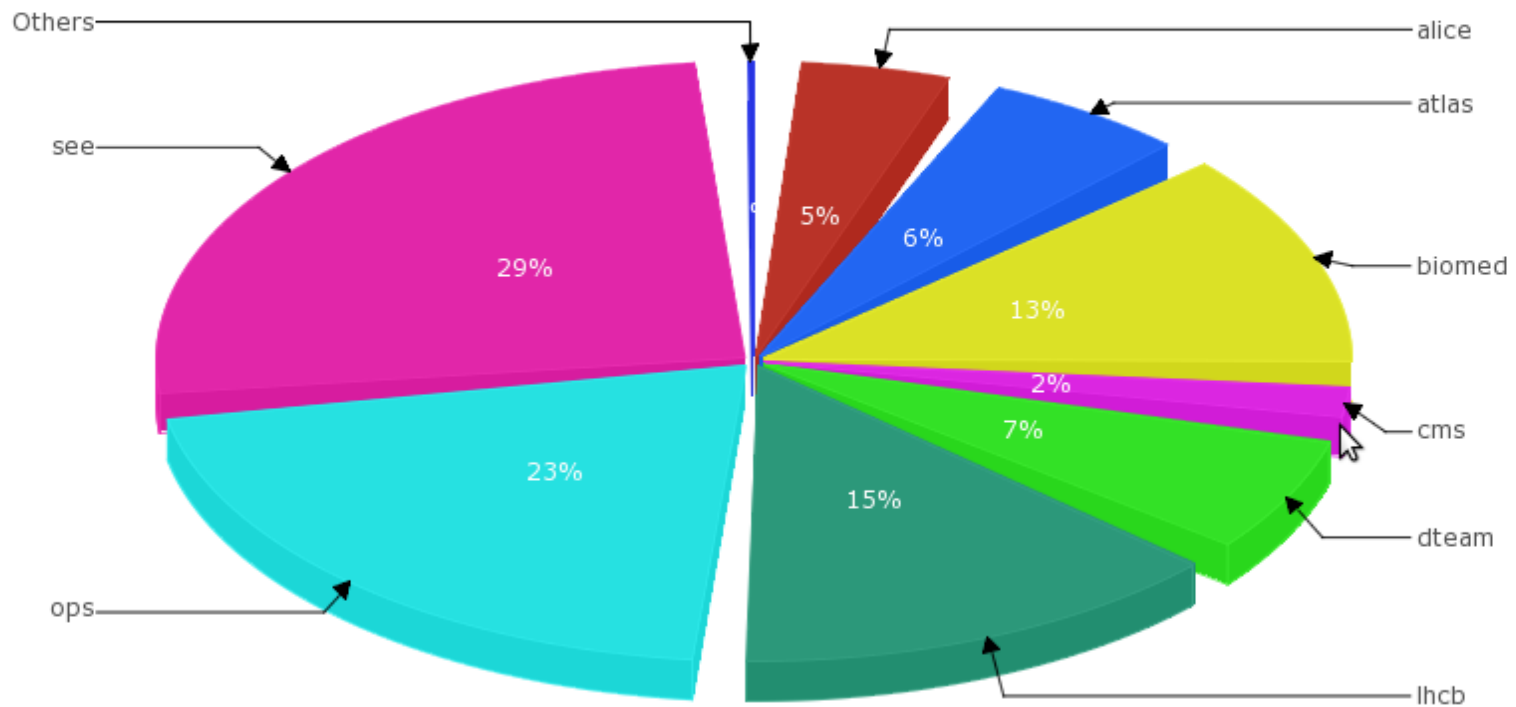


- Logical CPUs (cores): 60
- Storage capacity: 72.0 TB
- Main Memory: 92 GB
- Operating System:
 - VMware vSphere 5.0

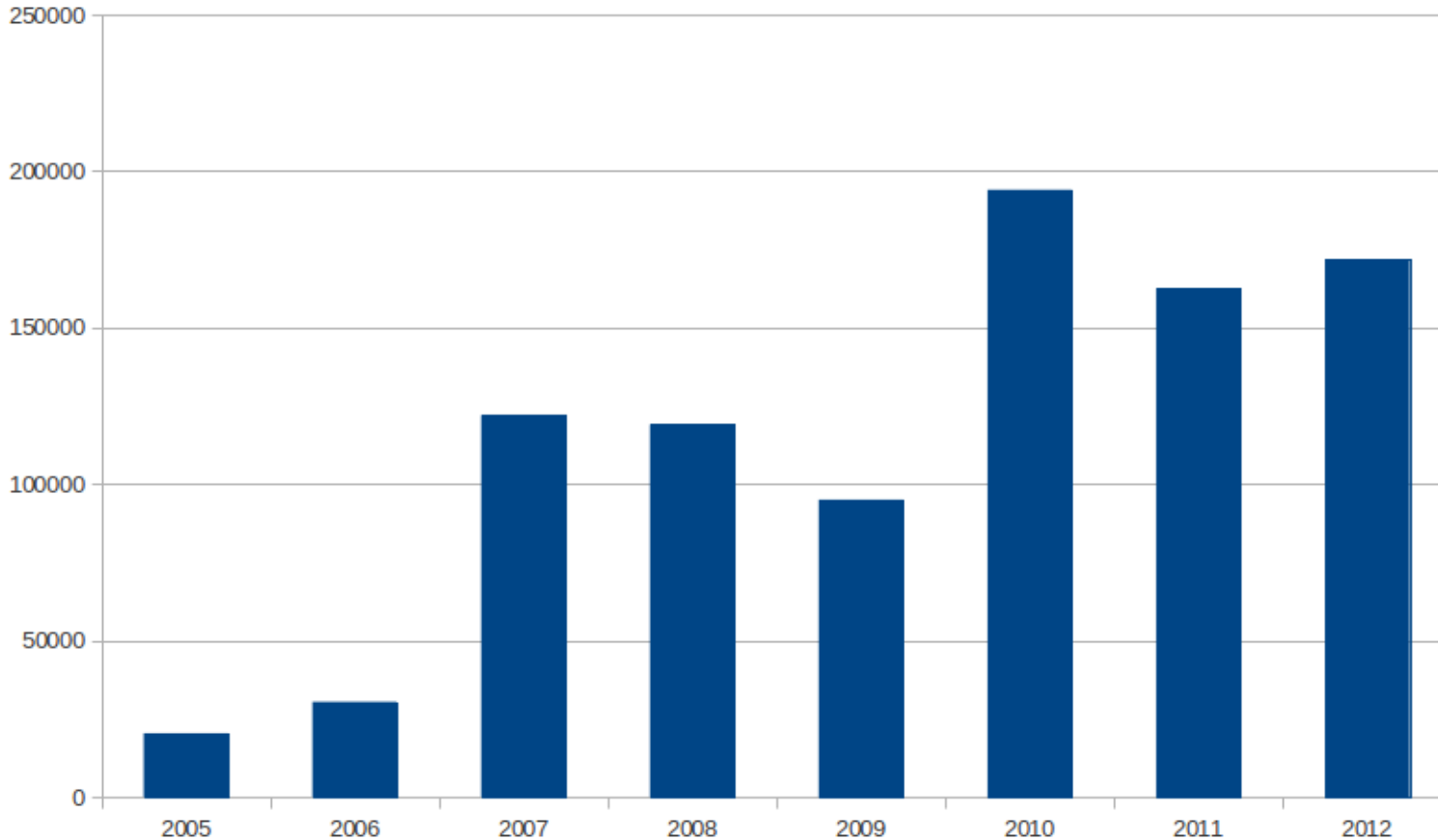


- **Cyprus Grid Certification Authority (CyGridCA)**
 - top level certification authority for Grids in Cyprus
 - provides X.509 certificates for identification and authentication of users and services on Grid activities
 - cygrid.org.cy

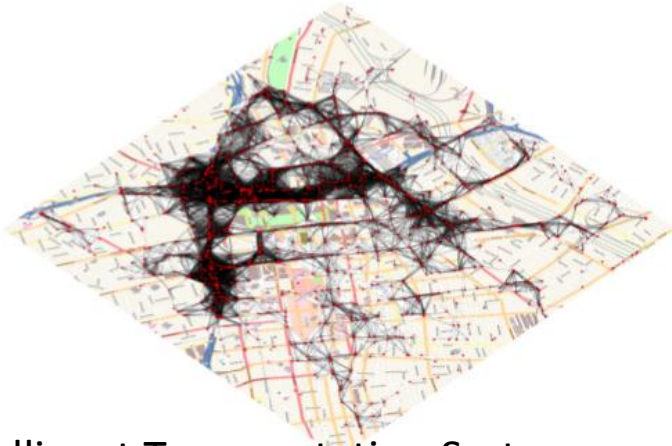
NGI_CYGRID Total number of jobs per VO



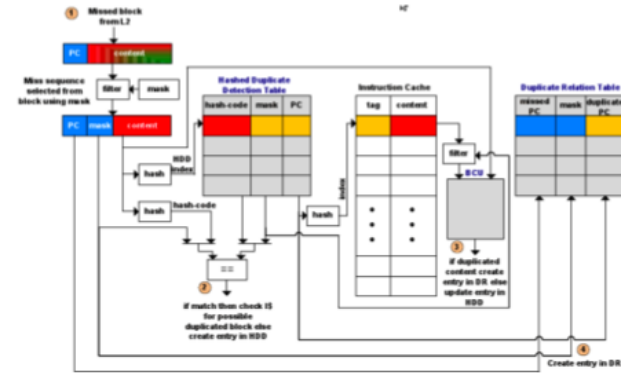
NGI_CYGRID Total number of jobs per Year



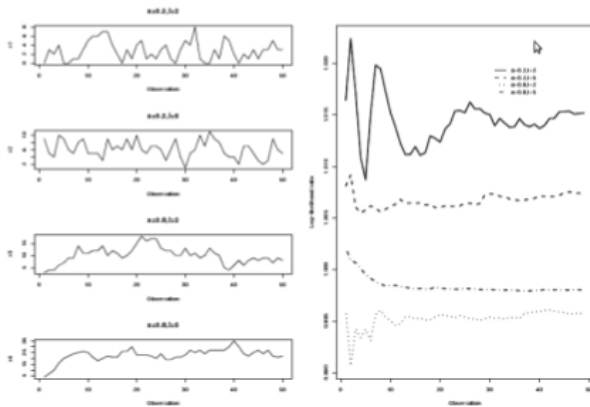
over 887.000 jobs serviced (2005-2012)



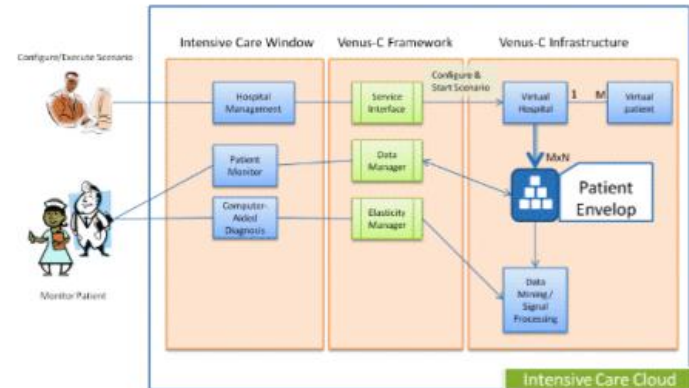
Intelligent Transportation System



Computer architecture



Statistical analysis



Medical information system