ACC Cyfronet AGH
@Resource Centre Forum

EGI TF 2011

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Mission and Model

- Mission:

  *Provide computing, storage, network capabilities to **facilitate research***

- Objective of managing resources:

  ***Maximize scientific results** in national science and research*

- Model:
  - Funding *mainly* by Research Council
  - Resources are *not* pre-assigned to user community
- Measured by:
  - *List of scientific papers with acknowledgements*
  - *Supported international collaborations recognized by Research Council*
- Lesson learned from 36 years of HPC/HTC:
  - ***maintain relations with users and customer satisfaction***

Resources

- Resource
  - 12 320 cores
  - 1 PB of storage
- Access methods:
  - Local batch system
  - gLite
  - UNICORE
  - QosCosGrid
  - Cloud technologies (soon)

TOP500 – June 2011

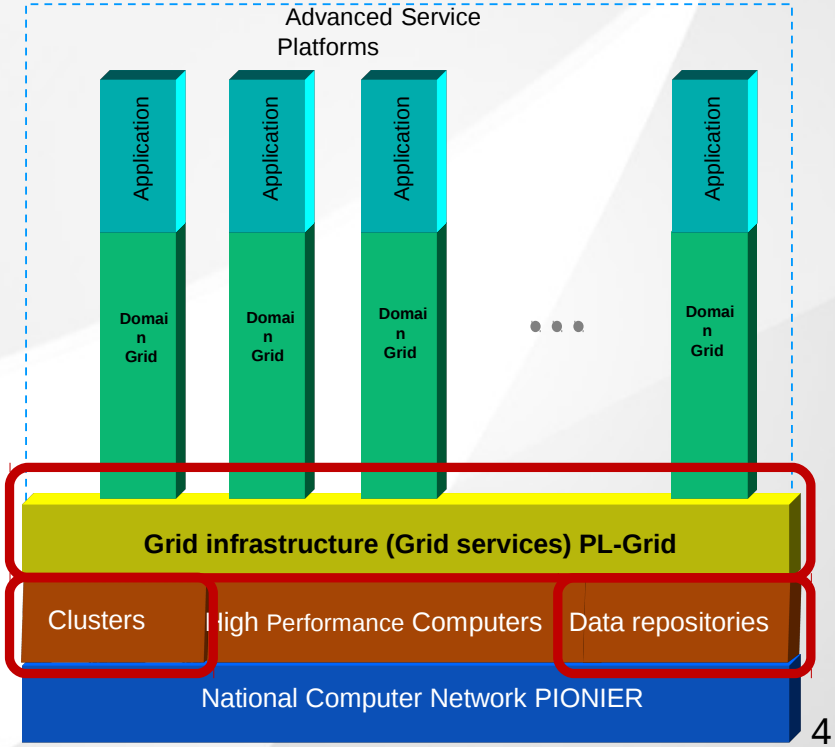
Rank	Site	System	Cores	R_{max} (TFlops)	R_{peak} (TFlops)
81	ACK Cyfronet AGH Poland	Cluster Platform 3000 BL2x220, L56xx 2.26 Ghz, Infiniband Hewlett-Packard	11694	104.77	124.42

PL-Grid - more than NGI PL

- Development of a common base infrastructure – compatible and integrated with international Grids
- Capacity to construct specialized, domain Grid systems – including services and tools focused on specific types of applications
- Enabling efficient use of available financial resources
- Plans for HPC and Scalability Computing, including clouds environments

•PL-Grid sites

- ACC Cyfronet AGH, Kraków
- ICM, Warszawa
- PSNC, Poznan
- WCSS, Wrocław
- TASK, Grańsk



Support for New Communities/Projects

- Open for new communities that:
  - show a link with Polish science, or
  - has potential : seed resources, incubators, etc.

- (Theoretically) ready for financial-based usage model
  - Possible for about 30% of resources (depending on money source)
  - Resource provision mechanism in place
  - Delivery computation and storage cost assessment in progress

New Community Example

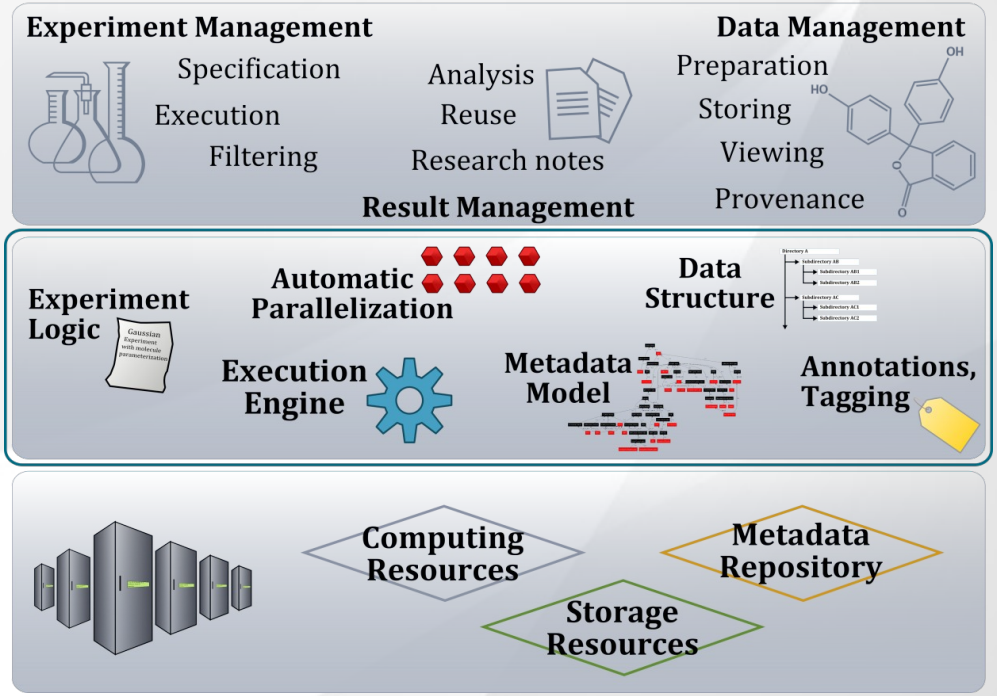
- Astronomy: Cherenkov Telescope Array (CTA)
- ESFRI Project
- EGEE VO vo.cta.in2p3.fr since 15th August 2008
  - but limited usage
  - need to integrate internal CTA group one by one
    - Even if they are computing-aware

ACK: G. Lamana, D. Torres, CTA

Support Layer Required

To increase Grid usage, the **support layer** was needed that:

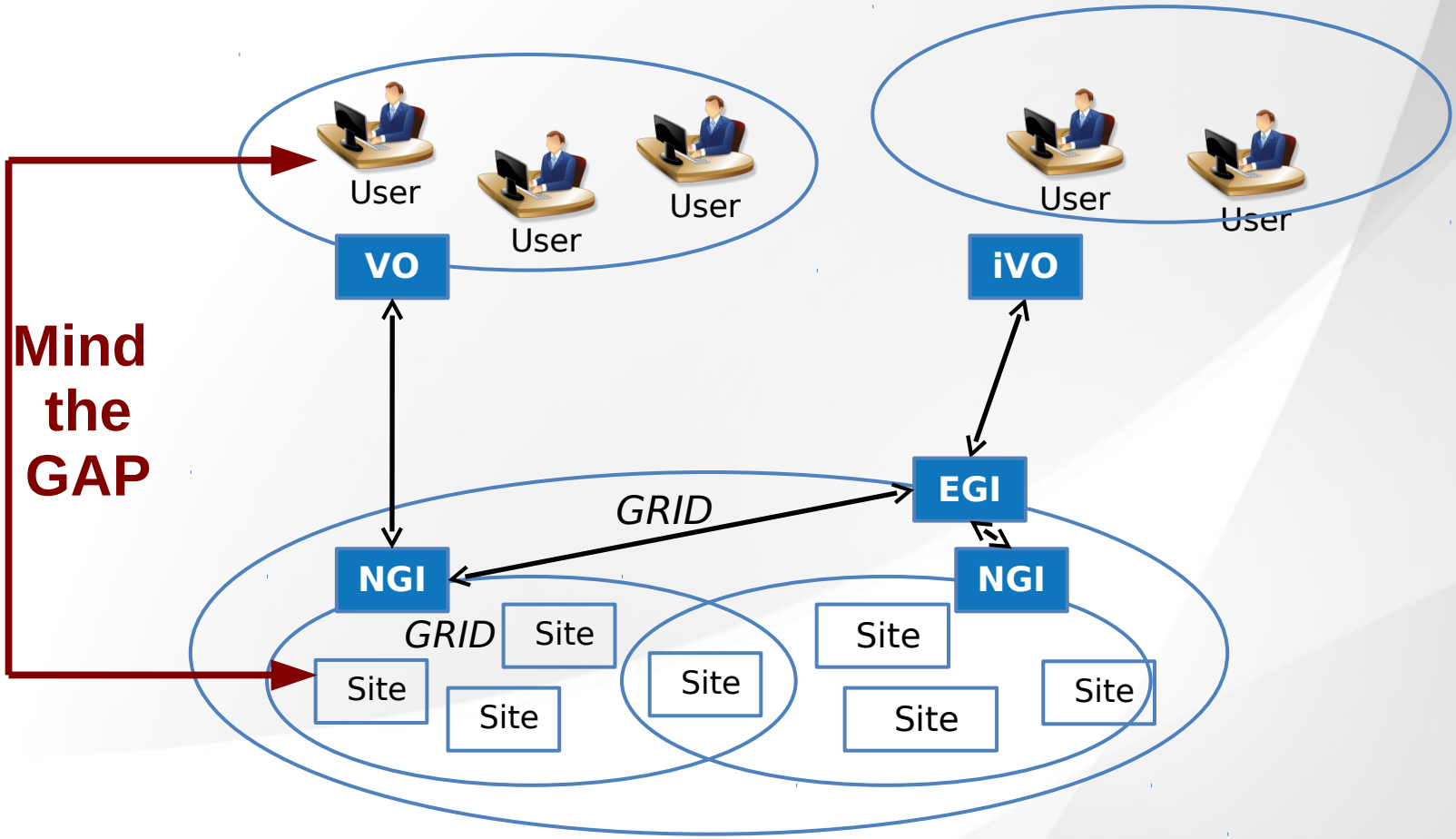
- Joins the user-domain space with the resource access layer
- Is responsible for:
  - Executing the experiment's logic
  - Automatic parallelization
  - Execution monitoring
  - Storing the user's data
  - Creating metadata – annotations, tags



PL-Grid Tools Offer

- Efficient Resource Allocation
  - Tools for users and systems administrators: **Grid Resource Bazaar**, mobile access to the infrastructure, new security modules
- Experimental Workbench
  - Extending of the **GridSpace2** platform with a set of new functions, support for new scripting languages and integration with new grid services
  - ***InSilico*Lab** – integrated environment for chemists and biologists
- Tools and Middleware
  - Integration of the **Migrating Desktop, VineToolkit** and **gEclipse** tools with various PL-Grid middleware services
  - **QStorMan Toolkit** – extension and deployment of **FiVO** – a new tool for VO management and monitoring
  - Novel Grid Middleware – performance and functional tests of middleware service **QosCosGrid** and integration with gLite and Unicore infrastructure at the queue systems level
  - Integration of the selected tools and web applications with Liferay **portal** framework and Nagios monitoring system

Resource Centers in EGI Ecosystem



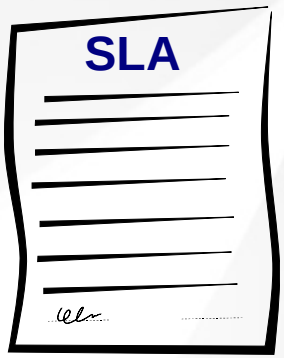
Acknowledgements: gSLM Project

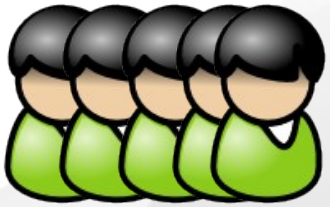
Service Level Management – bridging the gap

Service Level Management is to properly manage relationship with customers (ITILv3)

- VOs motivation
  - Need way to express their expectations related to resources and services they need
  - Want to know capacity of resources allocated for them to plan experiments
- **Sites Motivation**
  - **Are autonomous in managing resource allocations for Vos**
  - **Need to know what are the customers expectations**
- NGI Motivation
  - Keeps o role of single point of contact for nationals Vos
  - Coordinates and mediate in the resource allocation process

Customer/VO

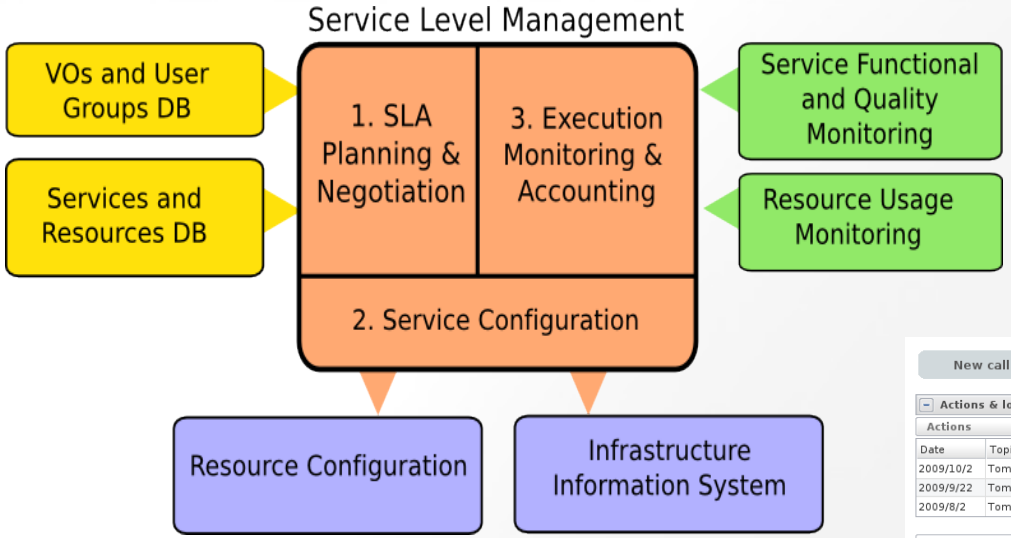




NGI operator

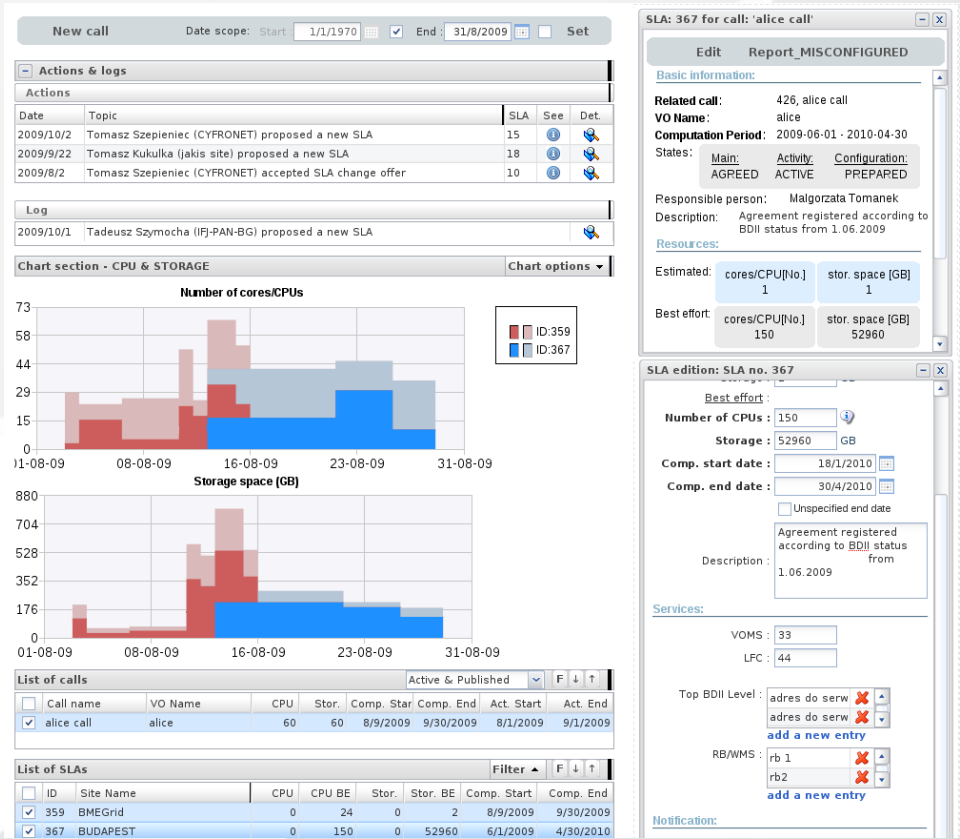
Resource/Service Providers

Implementation (integrated with PL-Grid)



SLA-aware operations model

- Grid Resource Bazaar – a platform for traceable SLAs negotiations that enables efficient communication in the process; in production since June 2011
- Tools for automatic configuration of sites according SLAs in preparation



http://bazaar.grid.cyfronet.pl

grid resource BAZAAR

Summary

- Initiative to understand better requirements from resource providers in EGI would be very helpful in
  - Bridging the user communities
  - Understanding business model