

## SEE-GRID Operations

[www.see-grid.eu](http://www.see-grid.eu)

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- SEE-GRID-2 operations-related objectives, activities, deliverables
- SEE-GRID operations overview
  - Infrastructure status
  - Operational/monitoring tools
  - Integration
  - t-infrastructure
  - Development
- Issues/suggestions

# Operations-related objectives & activities (1)



- **Develop the next-generation SEE-GRID infrastructure**
  - Next generation of EGEE middleware (gLite), the VOMS, the WMS, information services and file catalogue services will be assessed having in mind project and WP3 objectives
  - SEE-GRID infrastructure deployment regarding the middleware services will follow and adapt its services according to the results of the assessment.
- **Support in deployment and operations of the Resource Centres**
  - Next generation monitoring services will be deployed so as to support the over-the-board infrastructure monitoring.
  - The current SEE-GRID helpdesk will be expanded in SEE-GRID-2, with the main goal of full EGEE interoperability.
  - Support the expansion and deal with the overall upgrade of the current infrastructure by proliferation of RCs in each SEE country increasing:
    - the total available regional resources (CPUs, storage, etc.) thus boosting the capacity and reliability of the provision of Grid services at regional level, and
    - the diversity and distribution of participating teams per country thus strengthening cooperation and collaboration at national level.

# Operations related objectives & activities (2)



- **A3.1 - Implementation of the advanced SEE-GRID infrastructure (UOB-IPB/IPP)**
  - Deals with support for configuration, deployment and operations of the Resource Centres within the SEE-GRID pilot infrastructure, as well as transition of mature centres into EGEE.
  - Effort: 89 PMs
  - Subactivities:
    - **A3.1.1** - Expand the existing SEE-GRID topology by inclusion of new sites per SEE country
    - **A3.1.2** - Deploy M/W components and OS in SEE Resource Centers
    - **A3.1.3** - Test the site installations in local and Grid mode
    - **A3.1.4** - Operate the SEE-GRID infrastructure
    - **A3.1.5** - Monitor the infrastructure performance and assess its usage
    - **A3.1.6** - Certify and Migrate SEE-GRID sites from Regional Pilot to Global production-level eInfrastructures

# Relevant deliverables



- **D3.1a - Infrastructure Deployment Plan, M04 (CERN)**
  - Describes the envisaged infrastructure deployment execution plan to be followed in the region.
  - <http://www.see-grid.eu/deliverables.php>
- **Future: D3.1b - Infrastructure Deployment Plan, M14 (CERN)**
  - Final version of D3.1.
- **Future: D3.4 - Infrastructure overview and assessment, M23 (UOB-IPB)**
  - This deliverable should present an overview and assessment of the progress in the regional infrastructure and operations in the life of the project

# Operations: A3.1 Overview



- Infrastructure status
  - gLite assessment & deployment status
  - SEEGRID VO metrics
- Operations
  - SLA conformance monitoring per site (90% availability goal!)
  - Helpdesk tickets procedures and statistics analysis
  - OPS role implemented in VOMS and documented; deployment not finished
- Operational & monitoring tools deployment & integration
  - HGSM
  - SAM (+ porting to MySQL)
  - BDII
  - GridICE
  - SEE-GRID GoogleEarth
  - SEE-GRID GoogleMaps
  - GStat
  - R-GMA
  - RTM
  - MonALISA
- t-infrastructure status

# Infrastructure status (1)

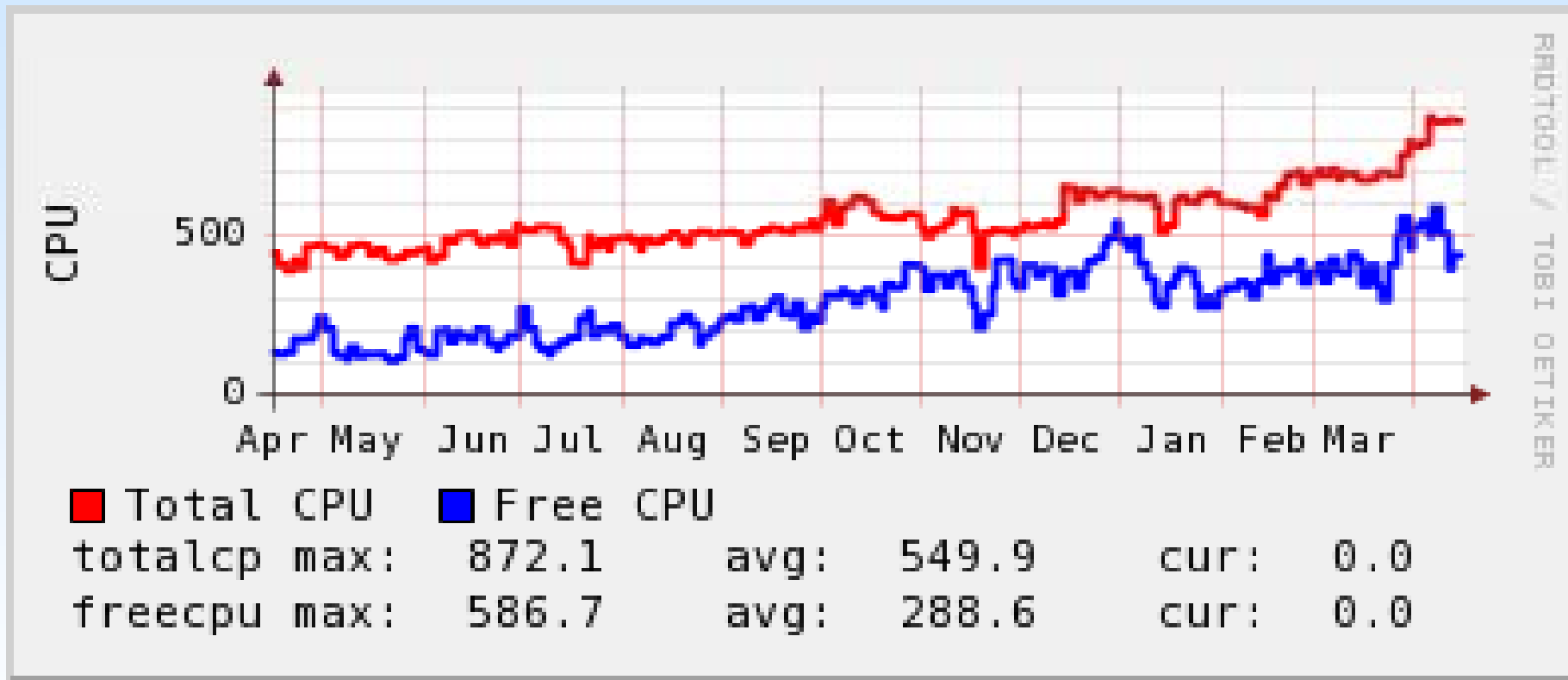


- Concerning the middleware deployments, the current SEE-GRID infrastructure supports a set of core services which provide user access to resources:
  - Catch-all Certification Authority for the region has been officially accredited by the EU Grid Policy Management Authority - EUGridPMA, and is currently operational; national CAs established in some countries
  - Virtual Organisation Management Service (VOMS), server has been installed as an authorization system for the SEE-GRID Virtual Organisation (VO)
  - Workload management service (lcg-RB and glite-WMSLB) and Information Services (BDII) nodes (several instances) have been installed at partners' sites and are operational
  - MyProxy is operational, and supports certificate renewal
  - FTS deployed and used in production
  - SEE-GRID Wiki gives overview of all details:  
[http://wiki.egee-see.org/index.php/SEE-GRID\\_Wiki](http://wiki.egee-see.org/index.php/SEE-GRID_Wiki)

# Infrastructure status (2)



**SEE-GRID**  
South Eastern European GRid-enabled  
Infrastructure Development



**SEE-GRID CPUs, April 2006 – April 2007**

<http://goc.grid.sinica.edu.tw/gstat/seegrid/>



# Infrastructure status (3)

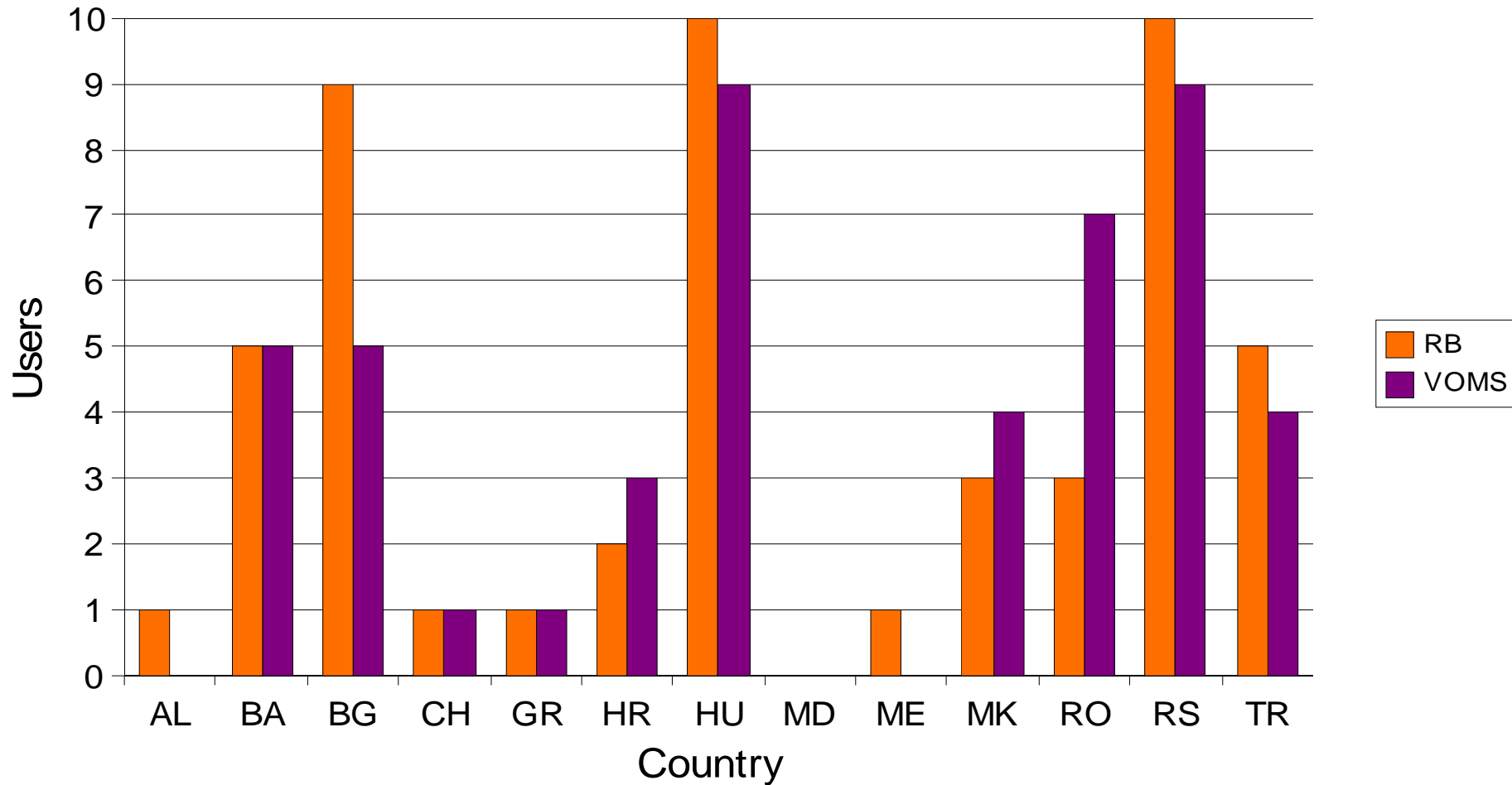


- SEE-GRID infrastructure contains currently the following resources:
  - 29 sites in SEE-GRID production
  - 5 sites in certification phase (AL + HR + RS + 2 RO)
  - CPUs: 859 total
  - Storage: 20.37 TB
- gLite assessment done, results positive, upgrade done on almost all sites (just one still on LCG-2\_7\_0)
- glite-CE assessment results inconclusive, service probably not stable enough for production
- glite-WMSLB assessment results show that it is not so stable as lcg-RB, but has various new features and is therefore actively used

# Infrastructure (4): SEEGRID VO metrics



**SEE-GRID**  
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Infrastructure Development



- SLA conformance monitored per site
  - [http://wiki.egee-see.org/index.php/SG\\_SLA](http://wiki.egee-see.org/index.php/SG_SLA)
- Tools used:
  - HGSM: <https://hgsm.grid.org.tr/>
  - SAM: <https://c16.grid.etfbl.net/sam/sam.py>
  - BBmSAM: <https://c01.grid.etfbl.net/>
  - GStat: <http://goc.grid.sinica.edu.tw/gstat/seegrid/>
  - Helpdesk: <https://helpdesk.see-grid.eu/>
- Helpdesk tickets procedures
  - Generic support group for users
    - TPM-like (monitoring open tickets created by users, trying to solve the simple ones, route the tickets, etc.).
    - tickets created by email are assigned to this group
  - Country level user support groups
    - Associate with country level mailboxes
  - GOOD shifts introduced, initial results positive
- OPS role implemented in VOMS and documented

# Operational & monitoring tools (1)



- Operational & monitoring tools deployment status
  - HGSM – Turkey
  - SAM (+ porting to MySQL) – Bosnia and Herzegovina with CERN support
  - Helpdesk - Romania
  - BBmSAM - Bosnia and Herzegovina
  - GridICE – FYR of Macedonia
  - SEE-GRID GoogleEarth – Turkey + Gidoon Moont
  - SEE-GRID GoogleMaps - Turkey
  - GStat – Min-Hong Tsai (ASGC)
  - R-GMA – Bulgaria
  - Nagios - Bulgaria
  - RTM – Gidoon Moont and Turkey (HGSM)
  - MonALISA - Romania

- **BBmSAM portal**
  - Created for SLA monitoring
    - Generating site availability statistics according to several criteria
    - Overview (HTML) and full dump (CSV) of data possible
  - Extended into full SAM portal
    - Availability for last 24h period for all sites/services
    - Latest results per service
    - History for nodes/services
- **BBmobileSAM**
  - Optimized for small-screen devices and low bandwidth
  - Possible filtering of sites
  - Possible three levels of details

# Operational & monitoring tools (2)



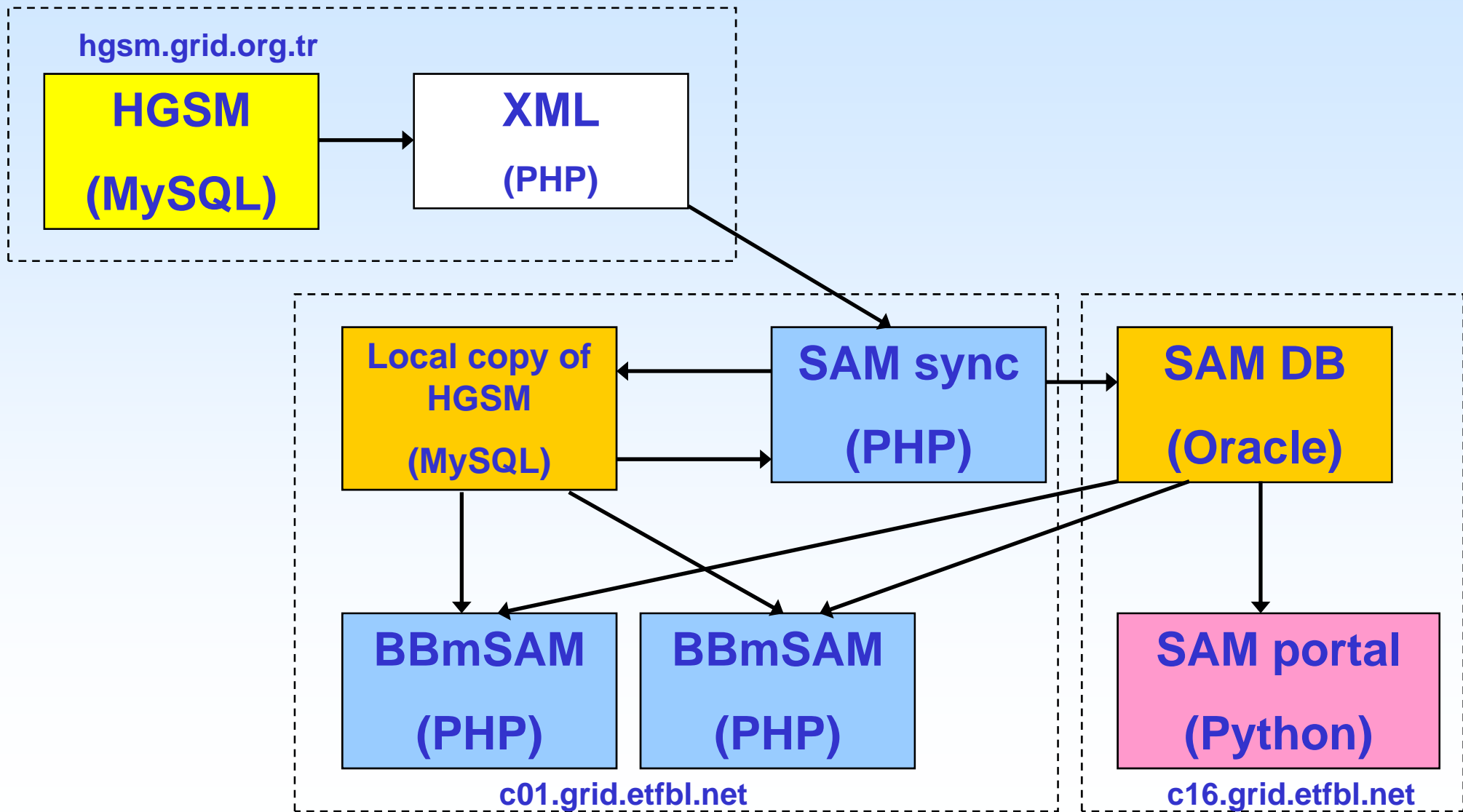
## ■ Integration status

- HGSM+SAM: OK, more development under way
- HGSM+BDII: OK
- HGSM+GStat: OK
- HGSM+RTM, HGSM+R-GMA: OK, more development under way
- VOMS+Helpdesk: OK

# HGSM+SAM Integration



SEE-GRID  
South Eastern European GRid-enabled  
Infrastructure Development



# VOMS+Helpdesk integration



- Automatically create new user accounts when accessing helpdesk
  - User is registered in SEEGRID VO -> Helpdesk account
  - Access is both certificate based and username/password
- Certificate based access for Helpdesk
  - Map SEEGRID VO registration and Helpdesk account by email address
  - Use multiple accounts with the same certificate



# t-infrastructure status: sites



- AEGIS02-RCUB no restriction on the number of jobs (i.e. up to 11 with SEEGRID VO)
- AEGIS04-KG no restriction on the number of jobs (i.e. up to 8 with SEEGRID VO)
- BG04-ACAD 8 CPUs,  
provide glite-CE, together with lcg-CE
- GR-01-AUTH 13 CPUs,  
(30 published, but 13 available CPUs; this is with other VOs supported)
- MK-02-ETF 1 CPU
- RO-03-UPB 10 CPUs,  
(20 published, but 10 available CPUs; this is with SEEGRID VO and other VOs supported)
- TR-01-ULAKBIM 16 CPUs,  
provide glite-CE, together with lcg-CE
- **TOTAL ~ 60 CPUs**

# t-infrastructure status: Core services



- SGDEMO CA
  - <http://www.grid.auth.gr/pki/seegrid-demo-ca/> (GR-01-AUTH)
- VOMS
  - <https://voms.grid.auth.gr:8443/voms/sgdemo/> (GR-01-AUTH)
- BDIIs
  - [bdii.phy.bg.ac.yu](http://bdii.phy.bg.ac.yu) (AEGIS01-PHY-SCL)
  - [bdii.ulakbim.gov.tr](http://bdii.ulakbim.gov.tr) (TR-01-ULAKBIM)
  - [bdii01.grid.auth.gr](http://bdii01.grid.auth.gr) (GR-01-AUTH)
- RBs
  - [rb.phy.bg.ac.yu](http://rb.phy.bg.ac.yu) (AEGIS01-PHY-SCL)
  - [rb.ulakbim.gov.tr](http://rb.ulakbim.gov.tr) (TR-01-ULAKBIM)
  - [rb01.grid.auth.gr](http://rb01.grid.auth.gr) (GR-01-AUTH)
- WMS
  - [grid-wms.ii.edu.mk](http://grid-wms.ii.edu.mk) (MK-01-UKIM\_II)
  - [g01.phy.bg.ac.yu](http://g01.phy.bg.ac.yu) (AEGIS01-PHY-SCL)
  - [wms.ulakbim.gov.tr](http://wms.ulakbim.gov.tr) (TR-01-ULAKBIM)
- LFC
  - [grid-lfc.ii.edu.mk](http://grid-lfc.ii.edu.mk) primary (MK-01-UKIM\_II)
  - [grid02.rcub.bg.ac.yu](http://grid02.rcub.bg.ac.yu) lfcLocal (AEGIS02-RCUB)

# WP3 Development areas



- RB voms-proxy renewal
- JobManager patch solving problems with proxy renewal on NFS-shared homes on WNs
- gLite-CE instability due to BLParserPBS crashes
- JAVA LFC Web API  
[http://wiki.egee-see.org/index.php/SEE-GRID\\_File\\_Management\\_Java\\_API](http://wiki.egee-see.org/index.php/SEE-GRID_File_Management_Java_API)
- BDII stability and capability improvements
- Information system improvements
- gLite-WMSLB performance and stability assessment
  - Presented at INDEL2006 and INFOTEH2007 conferences

# Operations/deployment issues in collaboration with EGEE (1)



- SEE-GRID customizations done on our sites are lost basically on each M/W upgrade that requires reconfiguration of nodes
- YAIM customizations are also difficult to keep track of, and must be done after each new release of YAIM again
- While this in principle is not a problem (customizations are done usually within one day), this means that all our sites need to apply those customizations after installing new update, and only then proceed with the reconfiguration.

# Operations/deployment issues in collaboration with EGEE (2)



- Collaboration on the above described issues would be of much help, e.g. before some update or new release is announced and made available, related projects may be notified (with the URL of temporary APT repository with updated RPMs), so that they can prepare and made available localized RPMs in regional repositories.

# Suggestions



- More coordination
- More joint operations meetings, and definitely more space for people presenting regional experiences on operations meetings
- Stimulate M/W developers to be more susceptible to requests, as well as to the patches, fixes, improvements etc. coming from regional projects