SEE-GRID-SCI

Operations Automation: SEE-GRID-SCI View

www.see-grid.eu

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Overview

- SEE-GRID Operations
- SEE-GRID Operational/monitoring tools
- Automation/integration of tools
- Conclusions

SEE-GRID Grid operations and monitoring tools
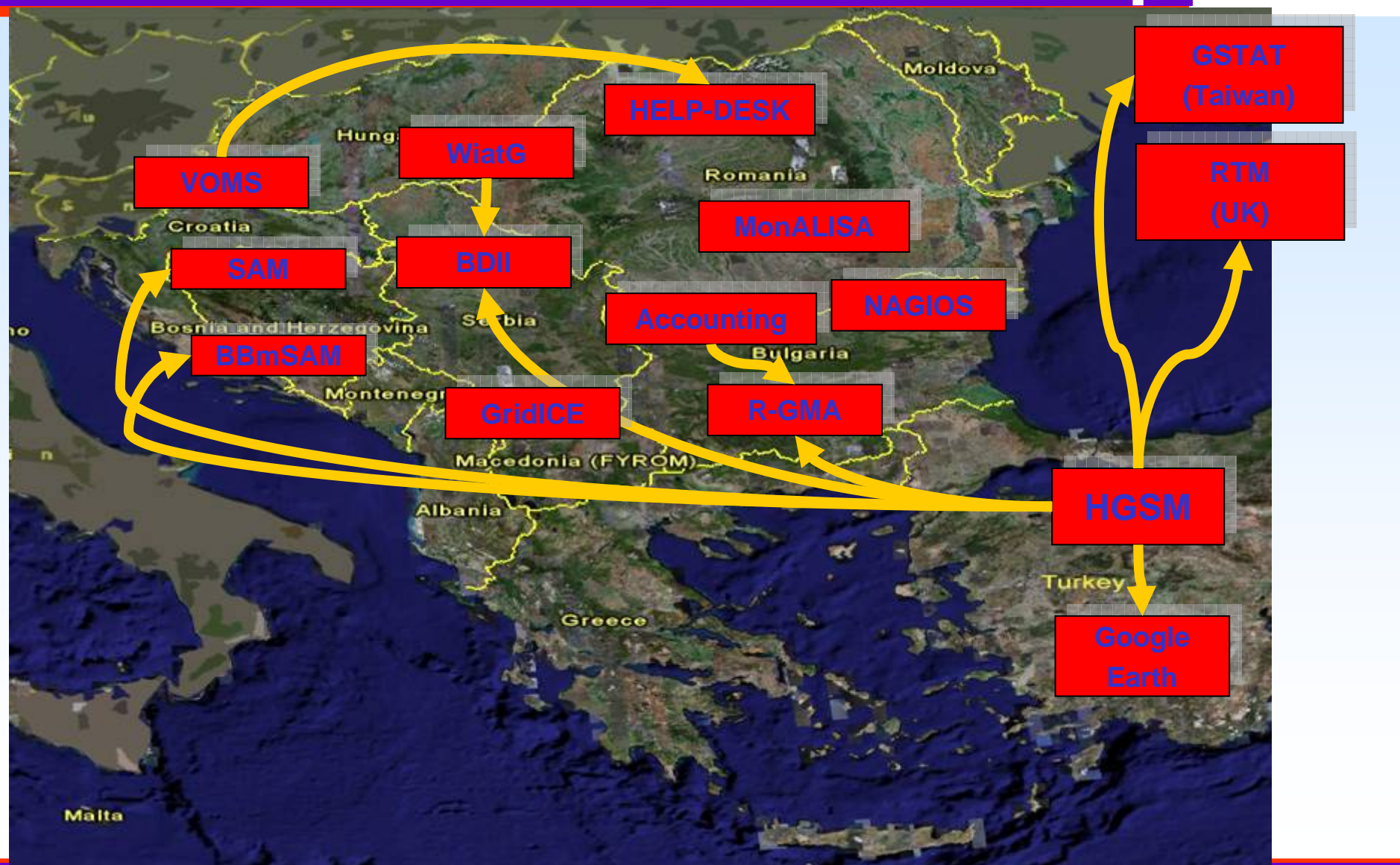
Grid operations

- **Distributed SEE-GRID ROC**
  - Coordinates deployment and upgrades
- **Pilot SLA established**
- **Monitoring and Accounting Tools**
- **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.).
  - Country-level user support groups
  - Application-level user support groups
  - Grid-Operator-On-Duty shifts
- **SEEGRID Wiki with detailed information for site administrators**

Operational & monitoring tools map

Operational and monitoring tools (1)

- Operational & monitoring tools deployment status
  - Hierarchical Grid Site Management (HGSM) – Turkey
  - Service Availability Monitoring (SAM) (+ porting to MySQL) – Bosnia and Herzegovina with CERN support
  - Helpdesk - Romania
  - BBmSAM - Bosnia and Herzegovina
  - GridICE – FYR of Macedonia
  - SEE-GRID GoogleEarth – Turkey + ic.ac.uk
  - Global Grid Information Monitoring System (GStat) – ASGC, Taiwan
  - R-GMA and Accounting Portal – Bulgaria
  - Nagios - Bulgaria
  - Real Time Monitor (RTM) – ic.ac.uk and Turkey (HGSM)
  - MONitoring Agents using a Large Integrated Services Architecture (MonALISA) – Romania
  - What is at the Grid (WiatG) – CERN with support from Serbia
  - RB/WMS monitoring tool – CERN with support from Serbia
  - Pakiti - Greece

Operational and monitoring tools (2)

- Full integration of all tools
  - HGSM+SAM, HGSM+BBmSAM
    - Automatic creation of list of sites to be tested
  - HGSM+BDII
    - Automatic creation of list of sites in the infrastructure
  - HGSM+GStat, HGSM+Nagios
    - Automatic creation of list of sites to be monitored
  - HGSM+RTM, HGSM+R-GMA
    - Automatic creation of list of sites monitoring and for accounting
  - VOMS+Helpdesk
    - Automatically create new user accounts when accessing helpdesk
    - Certificate based access for Helpdesk

HGSM
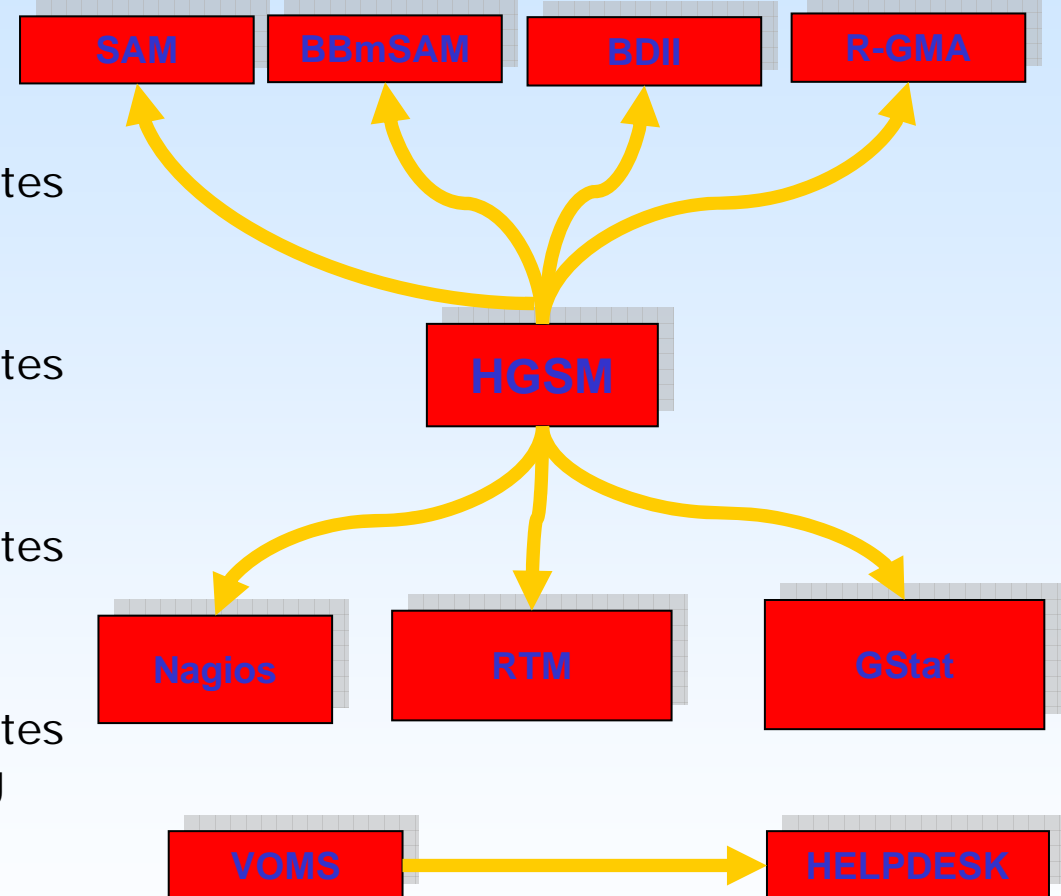
- Single ROC, multiple countries per ROC, and multiple sites per country
- Per user information edit rights
- Contact information per country, and per site
- General information about sites and detail information about nodes
- Detailed downtime information
- Mass node editing, XML imports, and site BDII imports
- Customizable universal export
- Applications Using HGSM: R-GMA, RTM and BBmSAM
- Projects using HGSM: SEE-GRID and EUMedGRID

BBmSAM

- **Impemented with:**
  - Web server – Apache
  - RDBMS – MySQL (no Oracle)
  - PHP scripting language
- **Integration with HGSM**
- **SLA calculation**
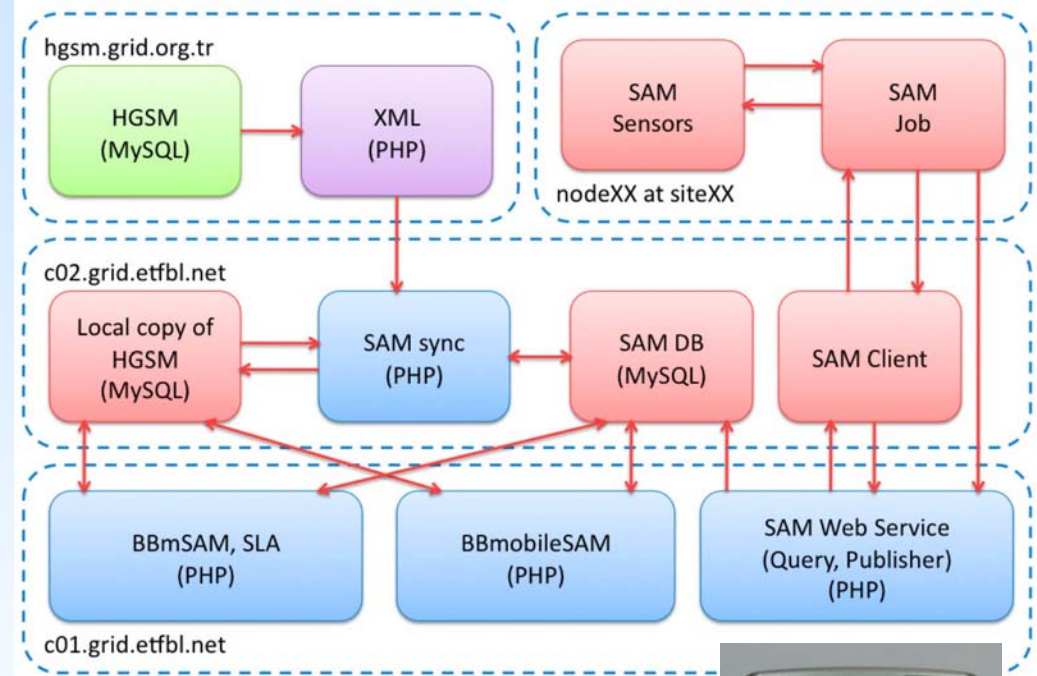
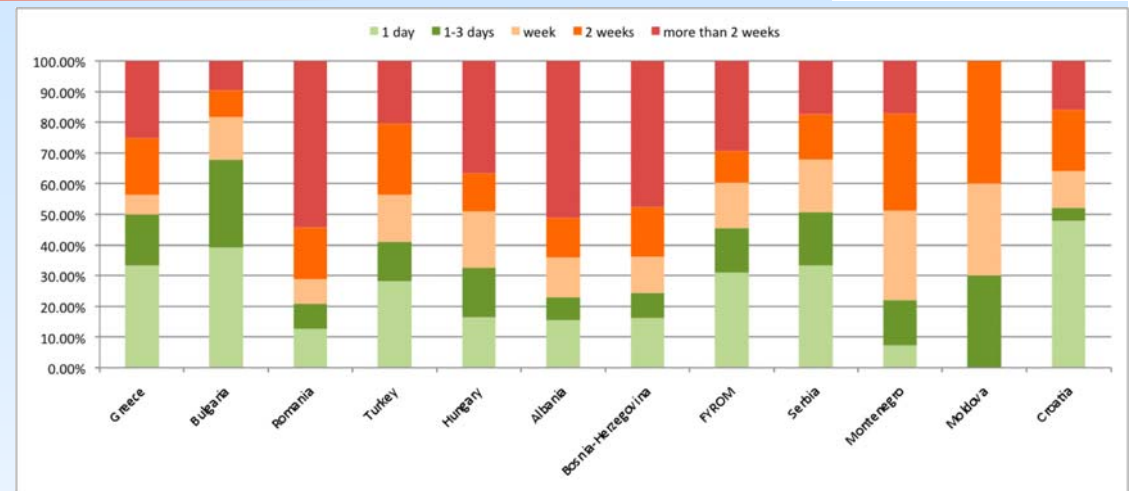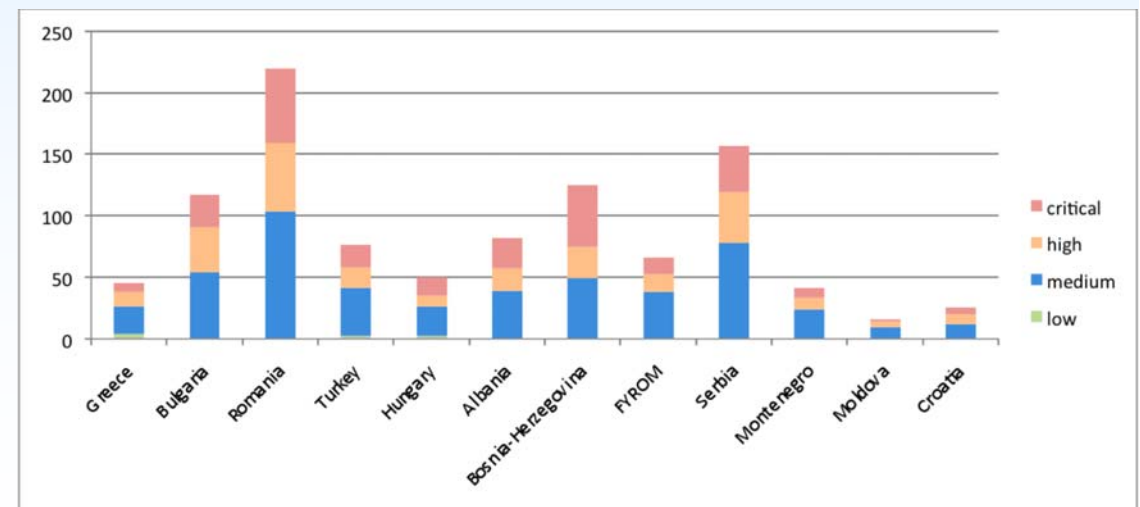| AEGIS04-KG | Serbia | 2 | Certified | Production | CE: cluster1 - ok - 100% SE: se - ok - 100% SRM: se - ok - 100% |
AEGIS05-ETFBG	Serbia	2	Certified	Production	CE: rti29 - ok - 100% SE: rti29 - ok - 100%
AEGIS06-AOB	Serbia	2	Certified	Production	CE: grid01 - error - 0% SE: grid02 - error - 0%
AL-01-INIMA	Albania	2	Certified	Production	CE: prof - maint - 0% SE: prof - maint - 0% SE: v101 - maint - 0%

Helpdesk

- Oneorzero
- Integration with VOMS server and DN based logging

RGMA and accounting portal

- Based on the gLite accounting framework
- Web front-end for querying has been deployed, and it provides views of CPU usage
  - Per site
  - Per country/institute
  - Per application

Nagios

- Provides overview of the results of various tests performed on SEE-GRID sites, as well as automated early notifications to site admins
- Configuration of the nagios service is generated and updated automatically, based on HGSM data
- SEE-GRID Nagios includes:
  - BBmSAM tests
    (fetched from
    the BBmSAM service)
  - Other tests
    (with links to test description
    pages and links
    to possible solutions)
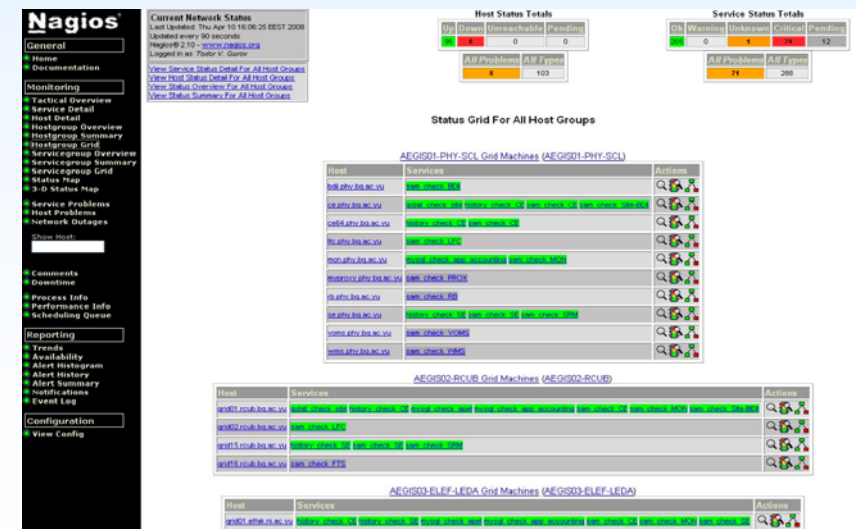
What is at the Grid

- Web application for visualization of BDII information
- Used by:
  - Other regional Grid projects
    - EUMedGRID   (bdii.isabella.grnet.gr)
    - EUChinaGrid   (euchina-bdii-1.cnaf.infn.it)
    - EELA   (lnx112.eela.if.ufrj.br)
    - Health-e-Child   (hec-maat-server2.cern.ch)
    - BalticGrid   (bdii.mif.vu.lt)
    - Int-EU-Grid   (i2g-ii01.lip.pt)
  - EGEE (ROC CERN)
    - PROD   (lcg-bdii.cern.ch)
    - PPS   (pps-bdii.cern.ch)
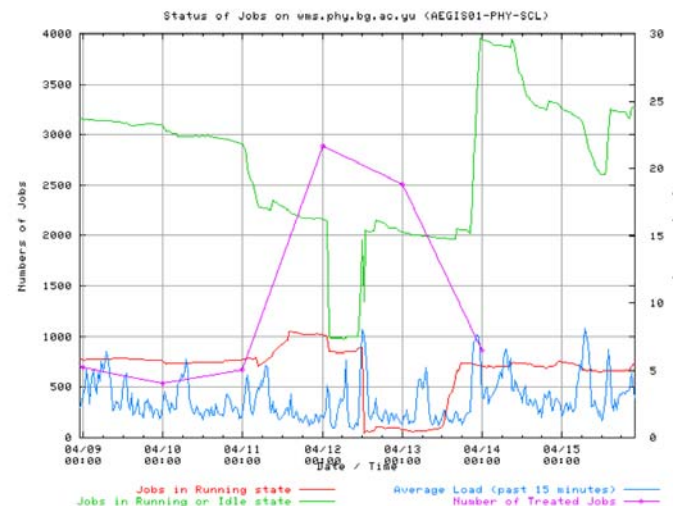   - OPS   (sam-bdii.cern.ch)

RB/WMS monitoring tool

- Developed by CERN and optimized for usage outside of CERN by SEE-GRID
- Two RPMs: rbwmsmon-server and rbwmsmon
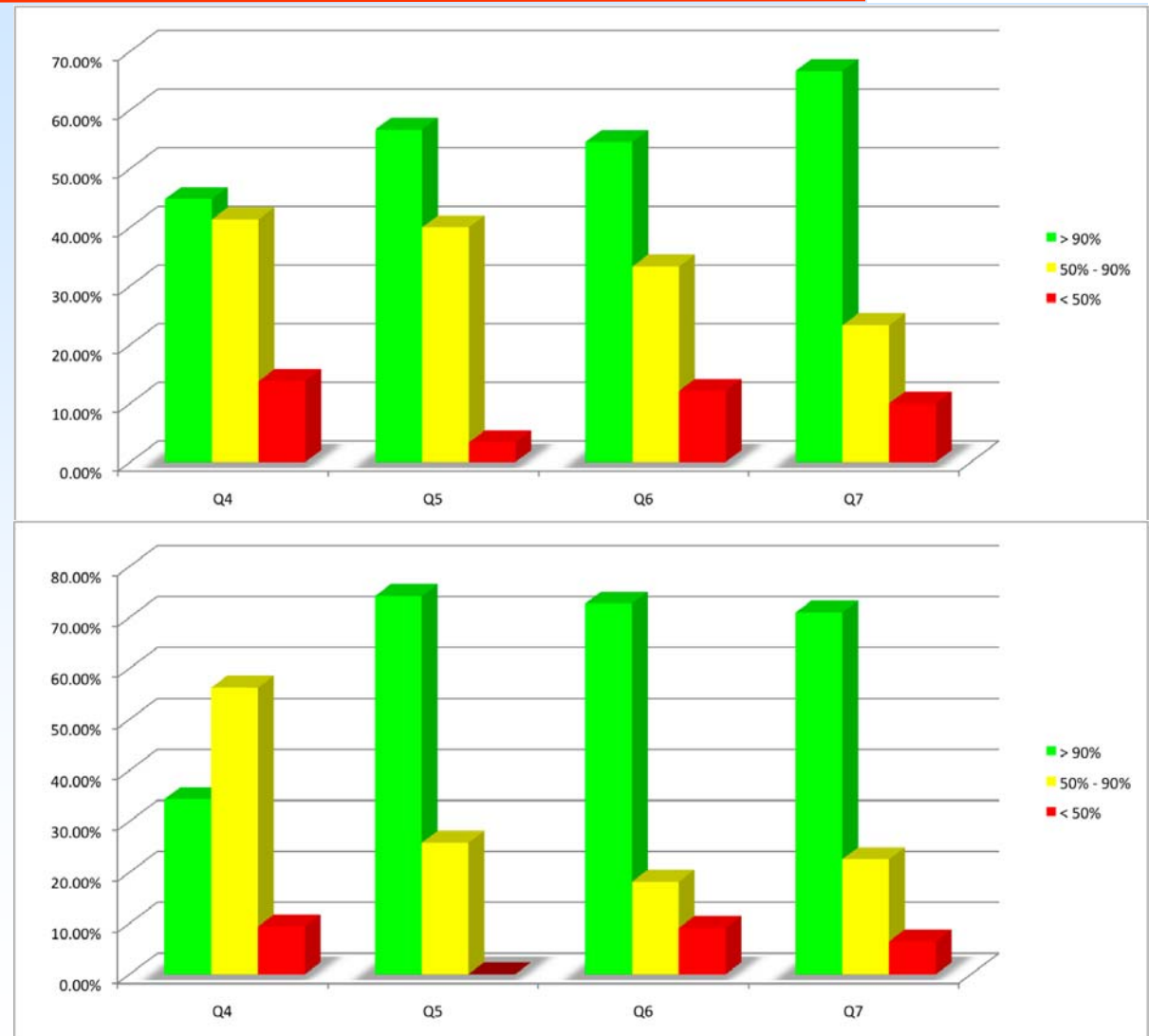
Pilot Service Level Agreement (1)

- **Hardware and connectivity criteria**
  - Min amount of resources for sites to participate in the infrastructure
  - Network to fulfill operations test requirements
- **Level of support**
  - Site and security administrators availability and response time
- **Level of expertise**
  - Site and security administrators declaration of expertise
- **VO support**
  - Site to provide support to SEEGRID VO and OPS role
- **Conformance to Operational Metrics**
  - Site availability
  - Downtimes

Pilot Service Level Agreement (2)

- Conformance to the SEE-GRID SLA for computing elements (top) and storage elements (bottom)

SEE-GRID-SCI
SEE-GRID eInfrastructure for regional eScience

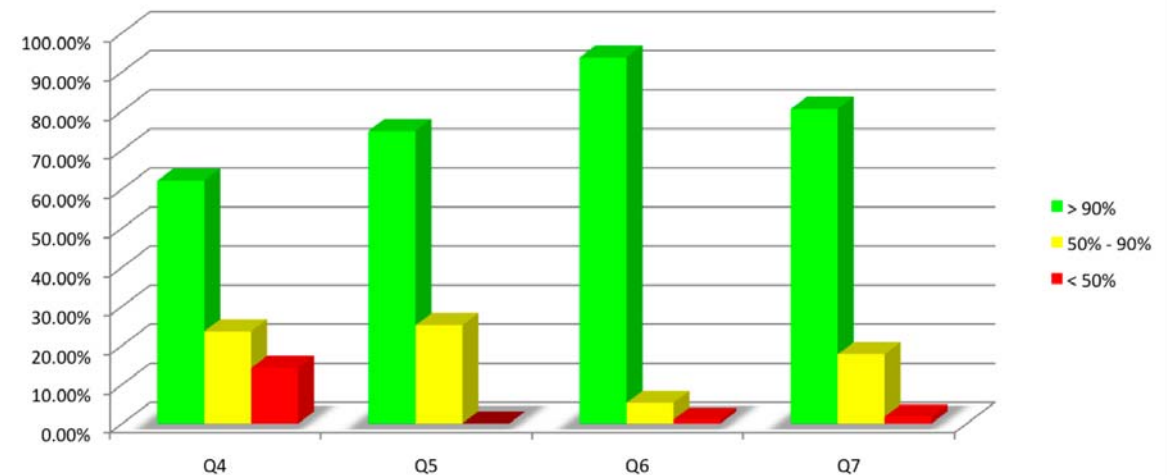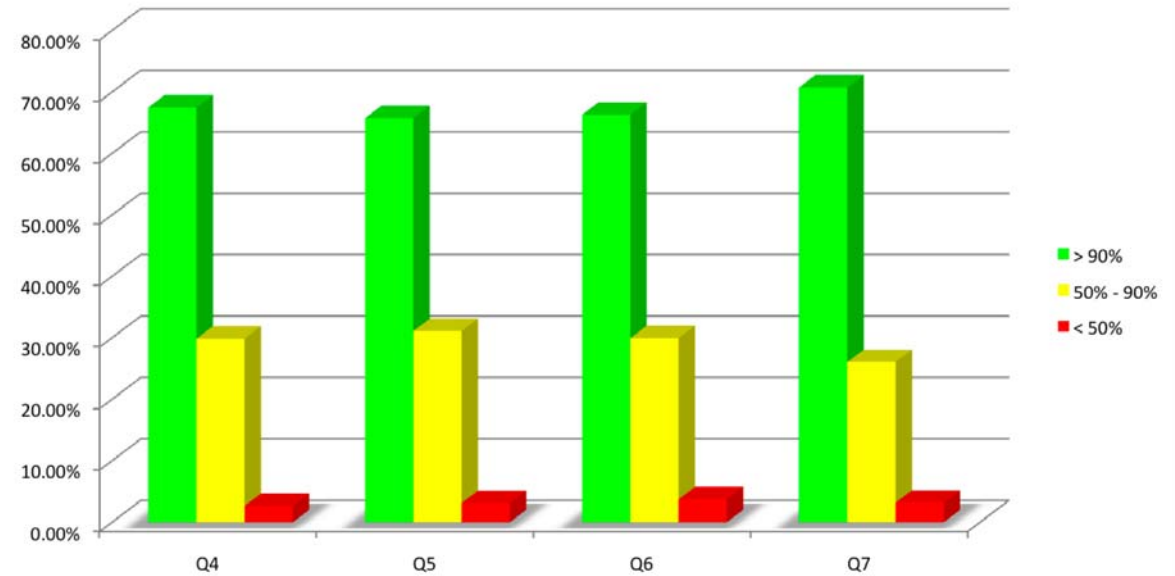- Conformance to the SEE-GRID SLA for computing elements (top) and storage elements (bottom), weighted by the amount of resources provided (CPUs for CEs, storage capacity for SEs)

Conclusions

- CIC portal-like dashboard functionality missing
- Helpdesk will be integrated with the EGEE-SEE one, and interconnected with GGUS, and future national-level support systems
- HGSM central focal point, all other tools integrated with it
- BBmSAM portal can be used for testing of all sites in the SEE region
- Tools like (HGSM, BBmSAM, etc.) can be used by other regions/regional Grid projects
- We are actively considering other integrations/automations, and are very interested in collaboration regarding this