EGI Services for Integrated Usage
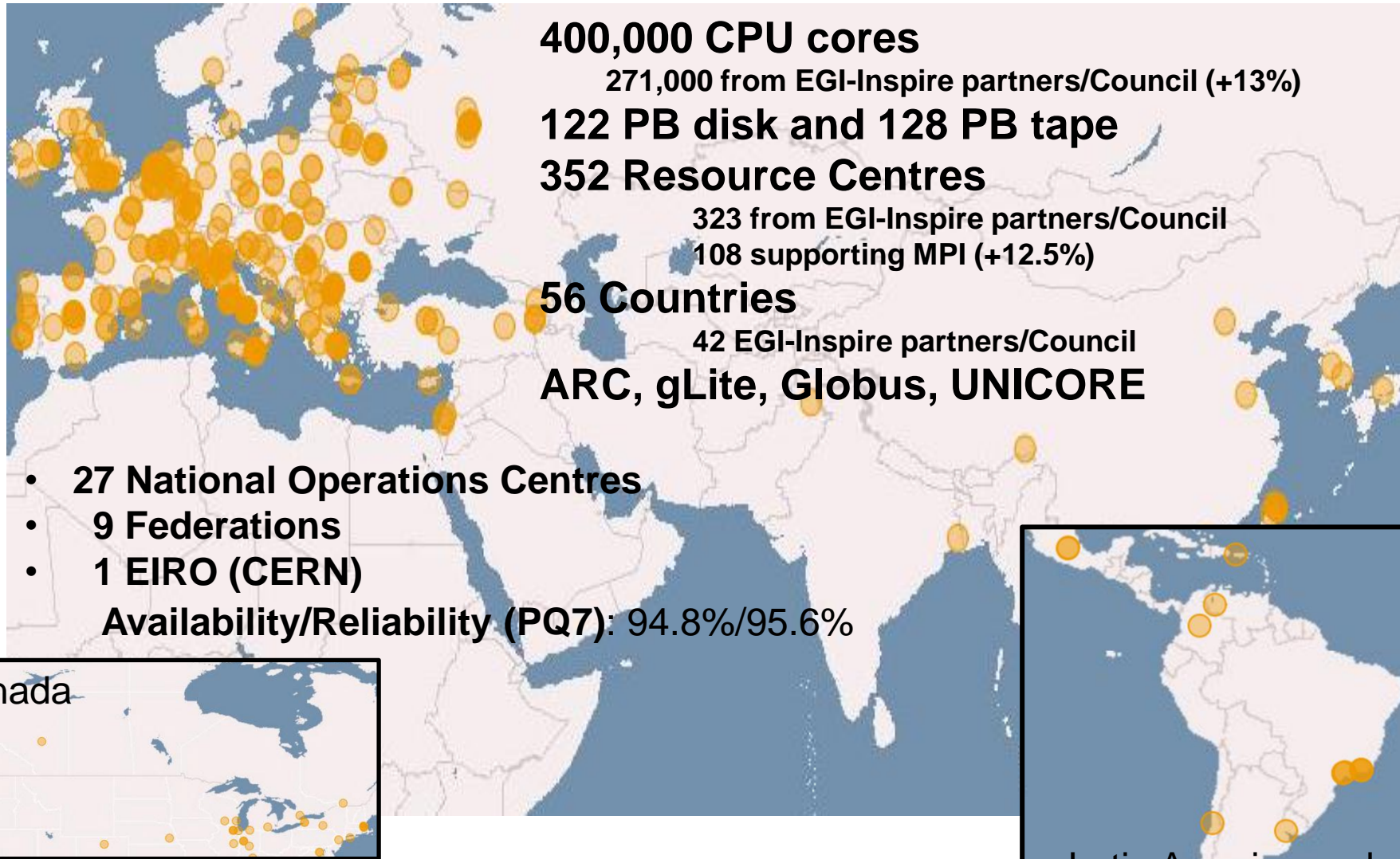
Tiziana Ferrari

EGI Chief Operations Officer

PRACE Workshop, CF12

e-infrastructure

- EGI Infrastructure
- Operations service portfolio

400,000 CPU cores
 271,000 from EGI-Inspire partners/Council (+13%)
122 PB disk and 128 PB tape
352 Resource Centres
 323 from EGI-Inspire partners/Council
 108 supporting MPI (+12.5%)
56 Countries
 42 EGI-Inspire partners/Council
ARC, gLite, Globus, UNICORE

- **27 National Operations Centres**
- **9 Federations**
- **1 EIRO (CERN)**
  Availability/Reliability (PQ7): 94.8%/95.6%

Canada

Latin America and Caribbean region

Installed Capacity (CPU)

	April 2010 (EGEE-III Infrastructure)	March 2011 (EGI-InSPIRE Infrastructure)	March 2012 (EGI-InSPIRE Infrastructure)
Logical CPUs/yearly increase	192,000	207,203/+7.9%	270,800/+30.7%
Million SI00	335 (1.34 Million HEP-SPEC 06)	495/+47.7% (1.98 Million HEP-SPEC 06)	740/+49.5% (2.96 Million HEP-SPEC 06)
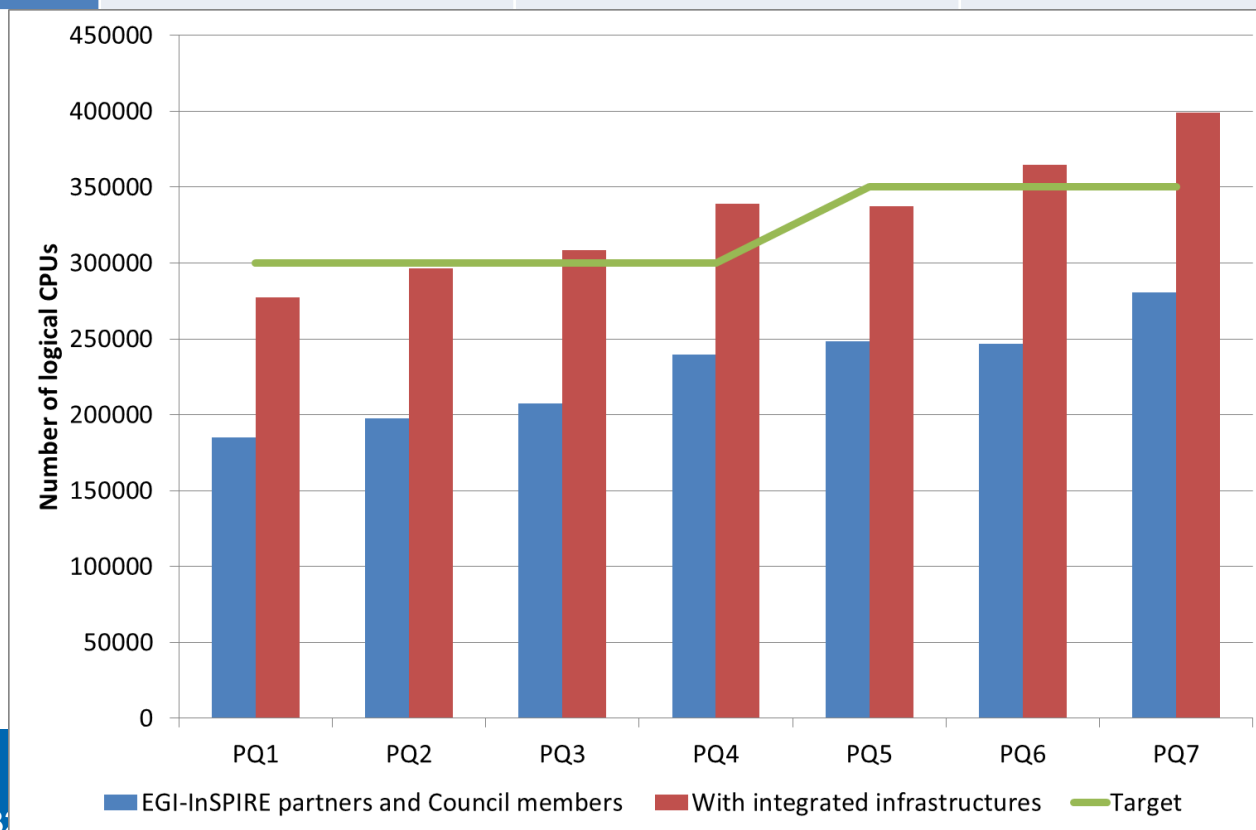
Users and disciplines (Jan 2012)

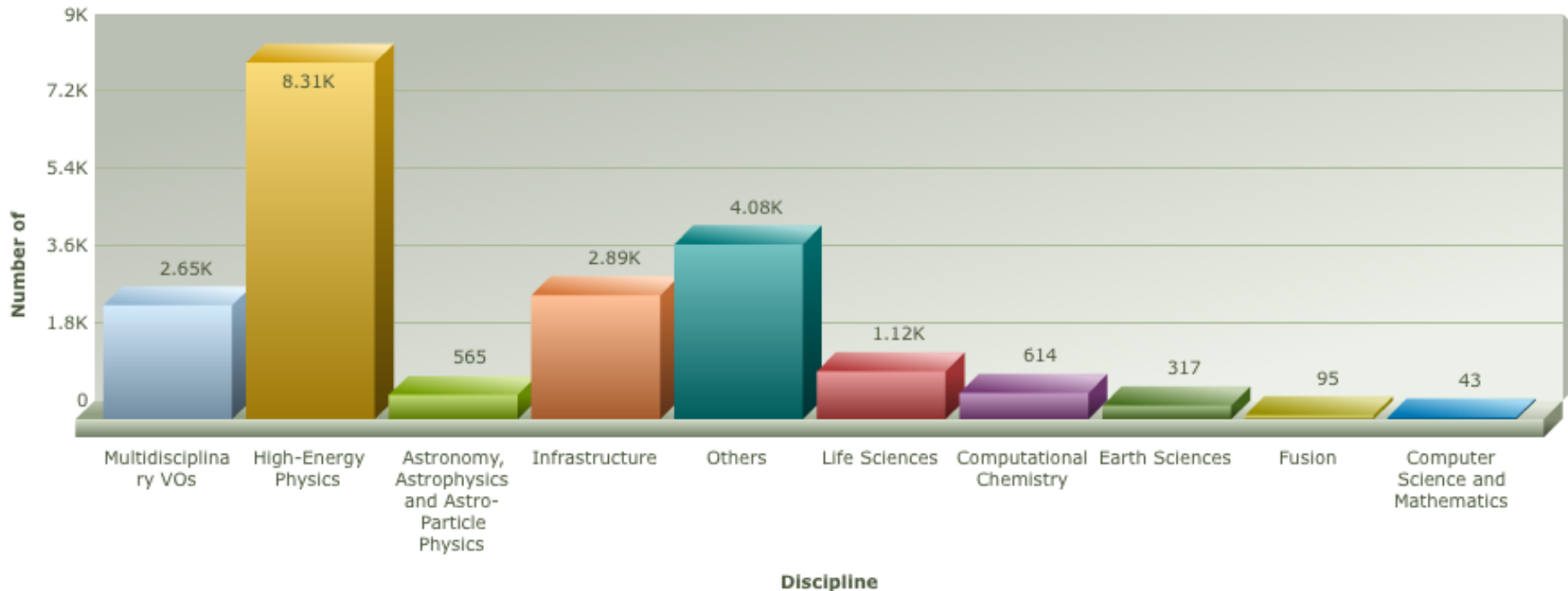Registered VO members: 21,126 (+13.5 from April 2011)
223 VOs (111 international ones)
25 high activity VOs
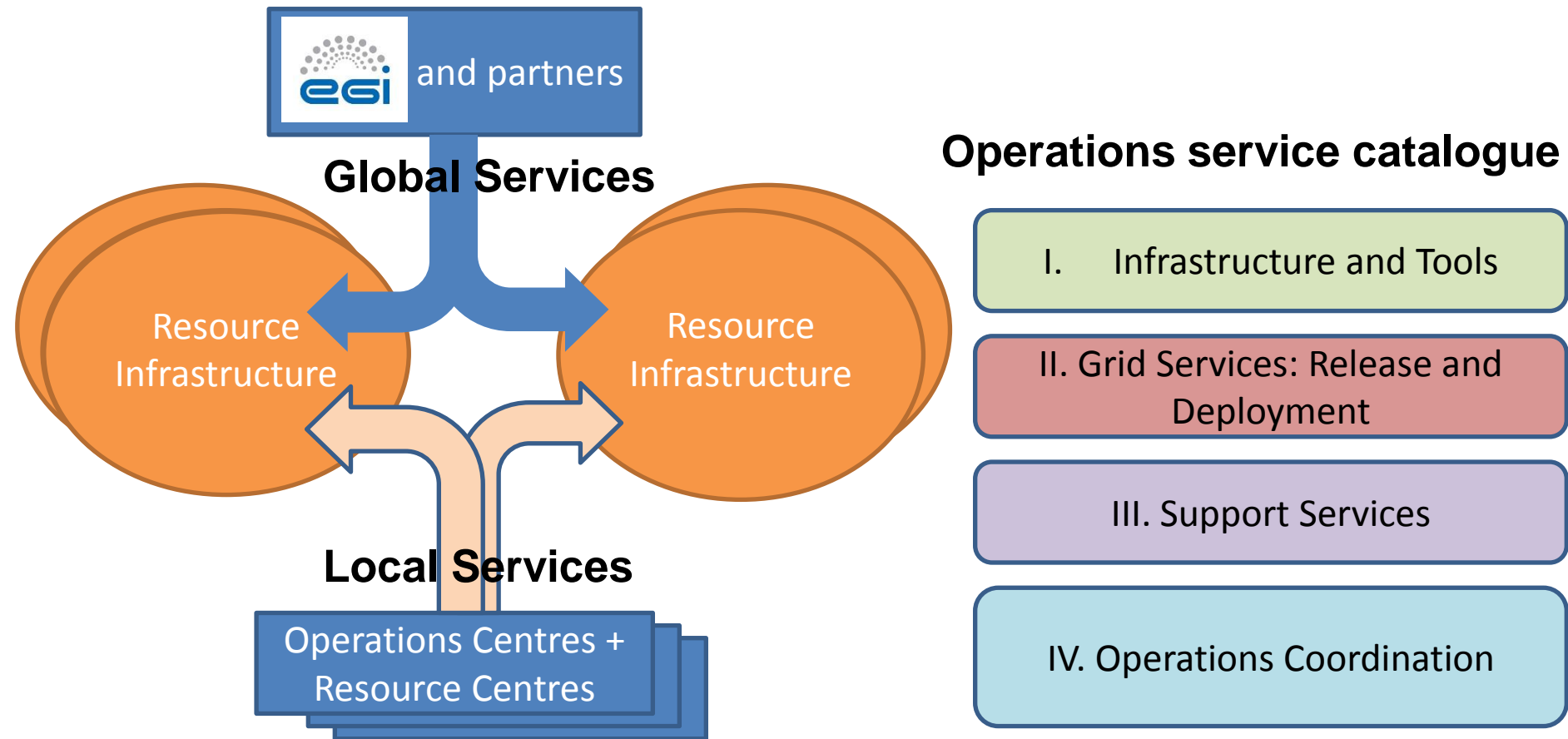1,264,922 jobs/day (+32% from April 2011)

Operations Portal

User Distribution per Discipline - Click on the column for more details
Generation Date : 2012-03-21T14:02:34+01:00

Number of (Y-axis: 0, 1.8K, 3.6K, 5.4K, 7.2K, 9K)

- Multidisciplinary VOs: 2.65K
- High-Energy Physics: 8.31K
- Astronomy, Astrophysics and Astro-Particle Physics: 565
- Infrastructure: 2.89K
- Others: 4.08K
- Life Sciences: 1.12K
- Computational Chemistry: 614
- Earth Sciences: 317
- Fusion: 95
- Computer Science and Mathematics: 43

Discipline

EGI services are provided locally by Operations Centres and globally by EGI.eu ([EGI Operations Architecture: Grid Service Management Best Practices](#), D4.3)

and partners

Global Services

Resource Infrastructure

Resource Infrastructure

Local Services

Operations Centres + Resource Centres

Operations service catalogue

I. Infrastructure and Tools

II. Grid Services: Release and Deployment

III. Support Services

IV. Operations Coordination

- Infrastructure and tools
  - Message brokers network (EGI.eu)
  - Service Availability Monitoring infrastructure (EGI.eu + NGIs)
  - Operations Portal (EGI.eu + NGIs – optional)
  - Accounting portal and repositories (EGI.eu + NGIs - optional)
  - Helpdesk (GGUS) (EGI.eu + NGIs - optional)
  - Grid configuration Database (GOCDB) (EGI.eu + NGIs – optional)
  - Security Monitoring tools (EGI.eu)
  - Metrics portal (EGI.eu)

- Grid Services: Release and Deployment
  - Core Grid services (NGIs)
  - Catch-all Grid services and VO services (EGI.eu + NGIs – optional)
  - Interoperability (EGI.eu + NGIs – optional)
  - Staged Rollout (EGI.eu + NGIs)
  - Requirement Gathering (EGI.eu + NGIs)
  - Requests for Changes (EGI.eu + NGIs)

- Support Services
  - 1st level support (TPM and local support, EGI.eu + NGIs)
  - 2nd level support (EGI.eu + NGIs)
  - 3rd level support (EGI.eu through the technology providers)
  - Early life support (NGIs – community effort)
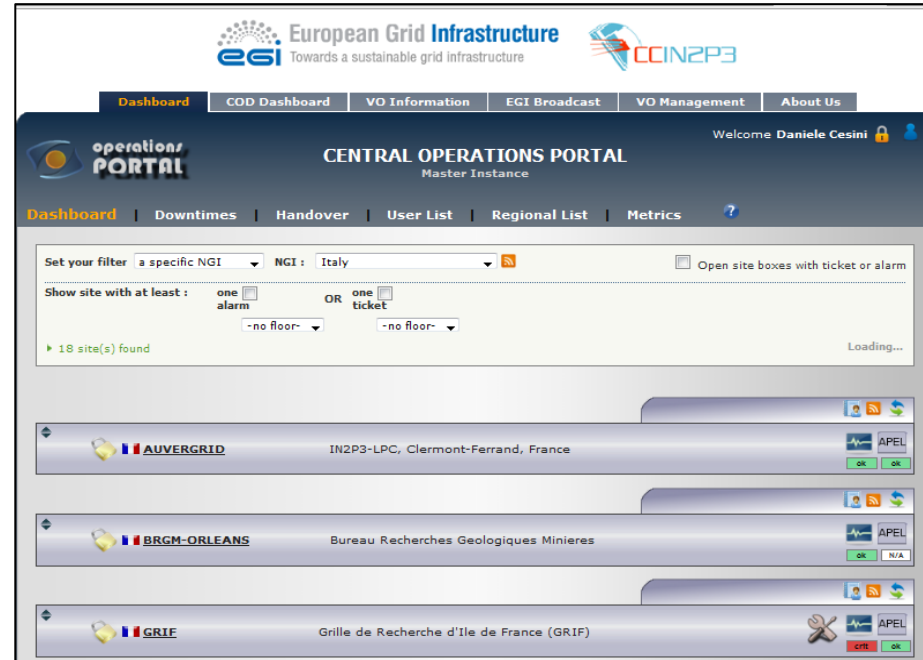
- ## Operations coordination
  - Grid oversight (EGI.eu + NGIs)
  - Operations coordination (EGI.eu + NGIs)
  - Availability management (EGI.eu + NGIs)
  - Service Level Management (EGI.eu)
  - Security Management (EGI.eu + NGIs)
  - Documentation (EGI.eu + NGIs)

Service Availability Monitoring (SAM) 1/2

SAM: monitoring framework for RCs and services

- − **test submission** framework: based on the **Nagios** system and customised by **the Nagios Configurator Generator**
- • **ARC, gLite GLOBUS and UNICORE**
- − data source of Availability/Reliability statistics

EGI-InSPIRE RI-261323

www.egi.eu
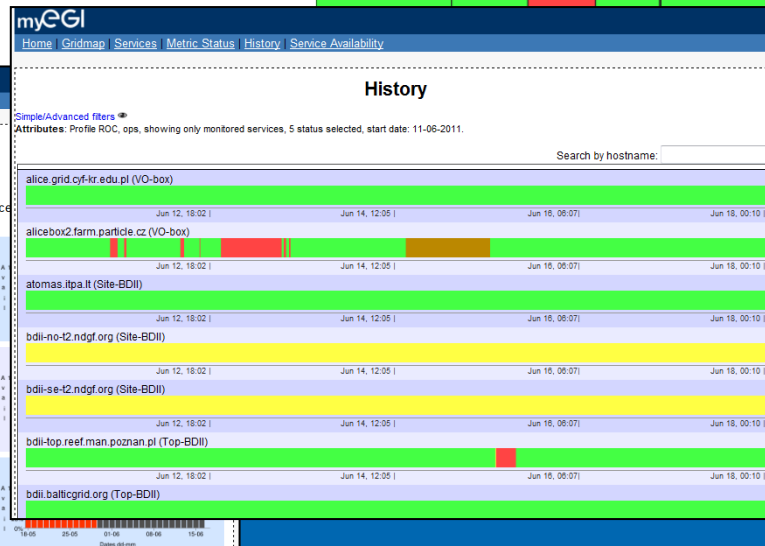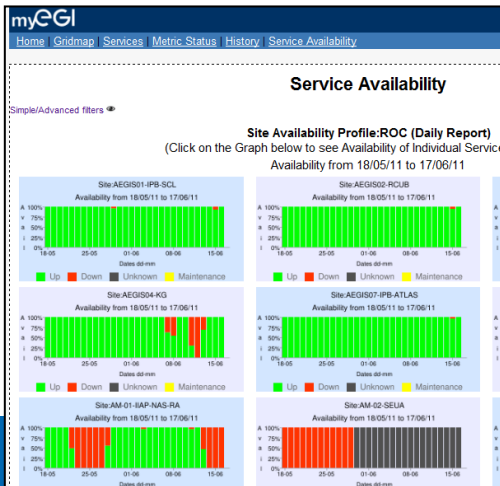
Operations Portal

- [Operations Portal](#) (CNRS)

- Operational Dashboard → Display of alarms in case of grid failures with possibility to open incident records (GGUS)

- Broadcast tool for operational communication to VOs, Resource Centres, NGIs etc

- VO Identify Cards → definition of VO contacts, resource requirements, AUP

Collection and provisioning of information about usage of compute resources within the production infrastructure (will be extended to storage)

- ARC, gLite (GLOBUS and UNICORE)
- Central components:
  - repository and portal
- NGI components
  - Sensors at Resource Centres, national /regional repositories and portals
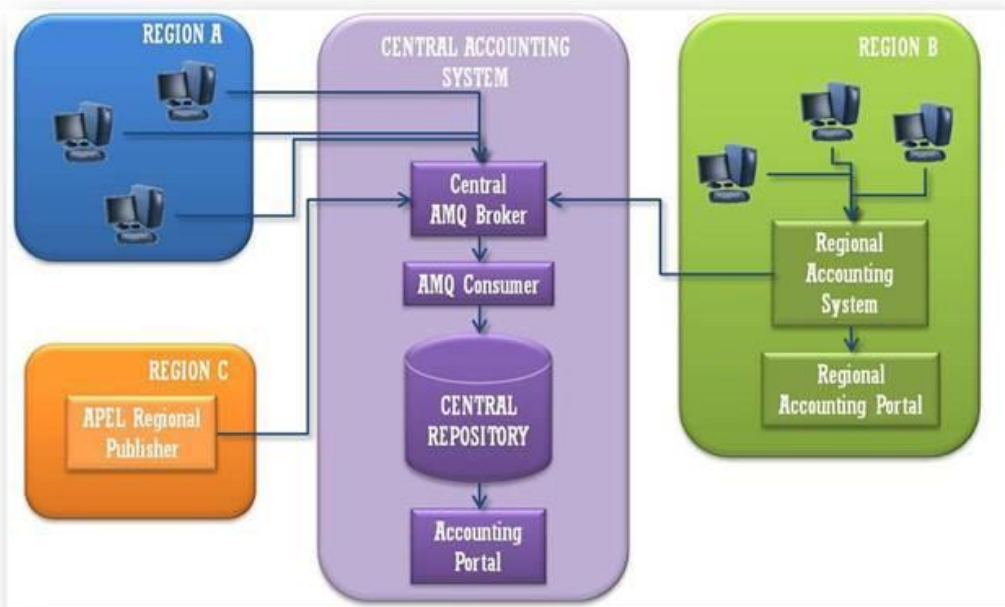
EGI Helpdesk

[EGI Helpdesk](#) (KIT) - Global Grid User Support - GGUS

– distributed system with a

central component interfaced to NGI helpdesks

– 1st/2nd and 3rd level support

- Operations
- Operational tools
- Middleware ARC/dCache/gLite/GLOBUS/UNICORE

– Interfaced to Open Science Grid helpdesk

Central configuration repository

GOCDB (STFC)

- EGI relies on a central configuration database to record static information contributed by the resource providers as to the service instances that they are running and the individual contact, role and status information for those responsible for particular services
- Downtime management

Software distributions

- ARC
- dCache
- gLite
- GLOBUS
- **UNICORE**
- **QosCosGrid software**
- **MAPPER**

Gathering → Prioritisation → Discussion with Technology Providers

Virtual Organisation → Virtual research communities

Resource Centres → Resource infrastructure Providers

EGI Request Tracker

User Community Board

Operations Tools Advisory Group

Operations Management Board

Technology Coordination Board and EGI-JRA1

- Collaboration with MAPPER project (example of multiscale simulation Tightly coupled scenario)
- NGI_PL, NGI_NL, NGI_DE, NGI_UK

EGI Registry, monitoring accounting (in progress)
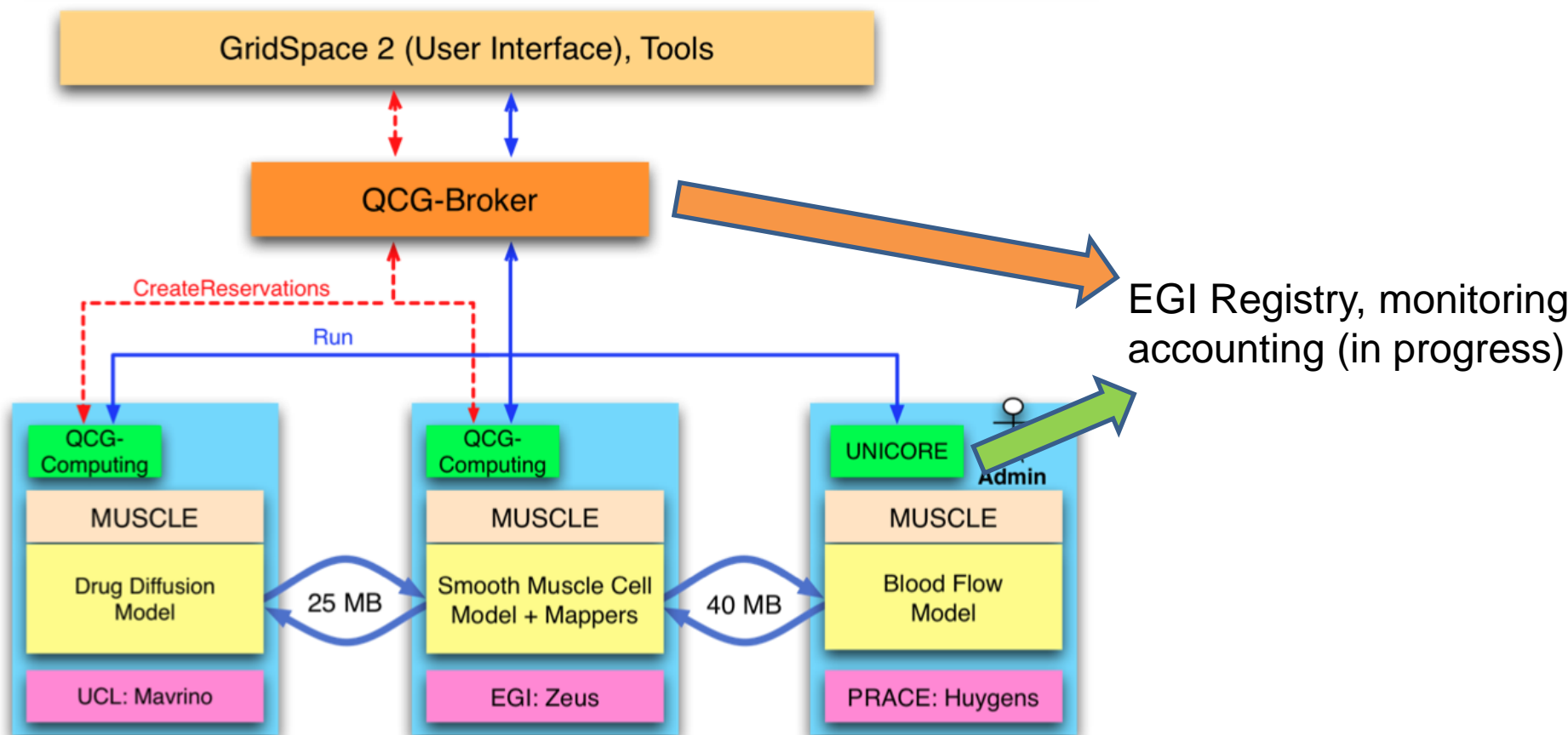
Courtesy of I. Saverchenko

EGI Services for Integrated Usage

Discussion

- EGI/PRACE consolidated collaboration on security policies
  - Participation to **Security for Collaborating Infrastructures (SCI)**
- Which support structure for HTP/HTC user communities?
  - Integrated helpdesk
  - Integrated 1st level support