

# EGI-InSPIRE Project Presentation

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- EGI: European Grid Infrastructure
- EGI.eu: European Grid Initiative organisation
- EIRO: European International Research Organisation
- ESFRI: European Strategy Forum on Research Infrastructures
- HUC: Heavy User Community
- NGI: National Grid Infrastructure/Initiative
- RP: Resource infrastructure Provider
- SSC: Specialised Support Centre
- UMD: Unified Middleware Distribution
- VO: Virtual Organisation
- VRC: Virtual Research Community

## Why build a European Grid Infrastructure?



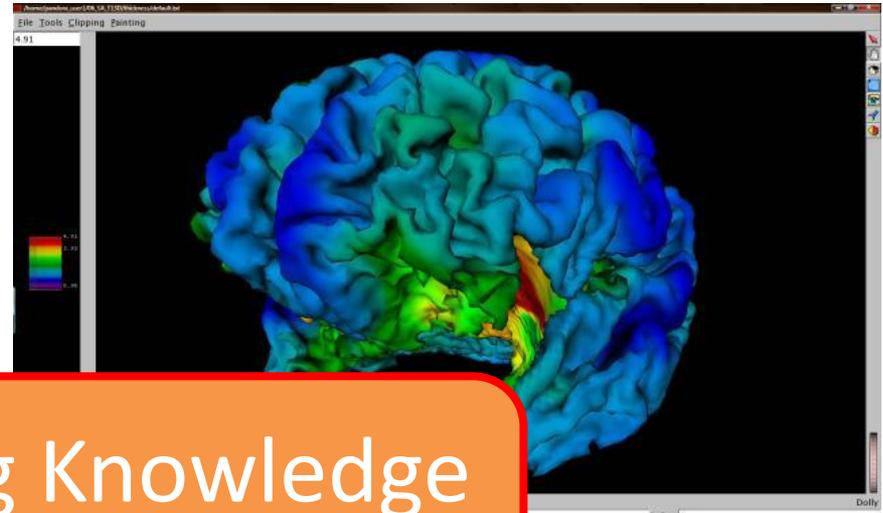
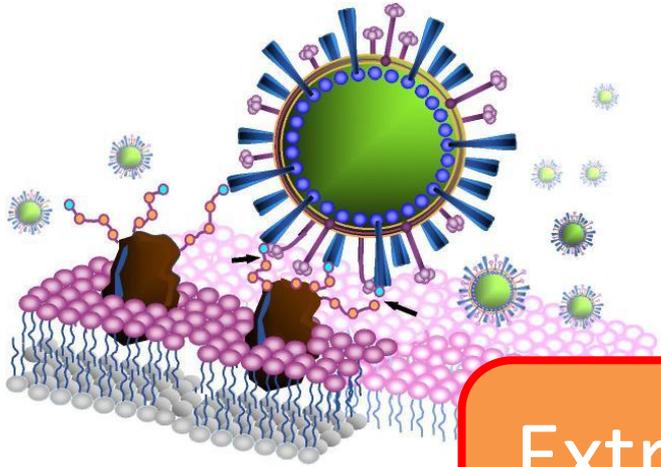
Infrastructure is the basic physical and organisational structures needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function

The Enterprise is the European Research Area

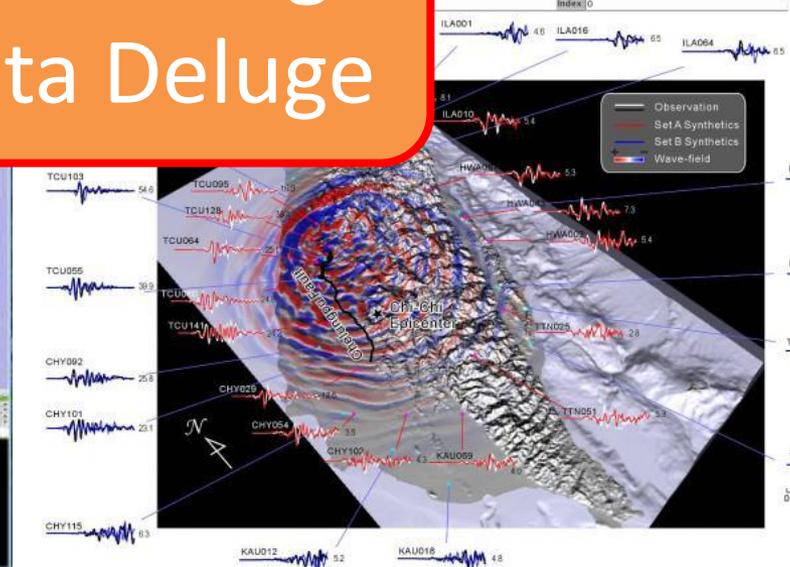
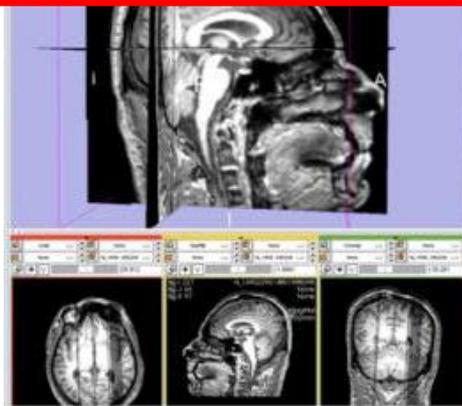
EGI provides a service infrastructure that exposes and helps coordinate a resource infrastructure

# What is a Grid?

- A grid consists of distributed resources controlled by separate organisations that be systematically used securely by users external to that organisation
- Resources can include:
  - Commodity or HPC clusters
  - Disk or tape storage
  - Instruments
  - Data Archives or Digital Libraries

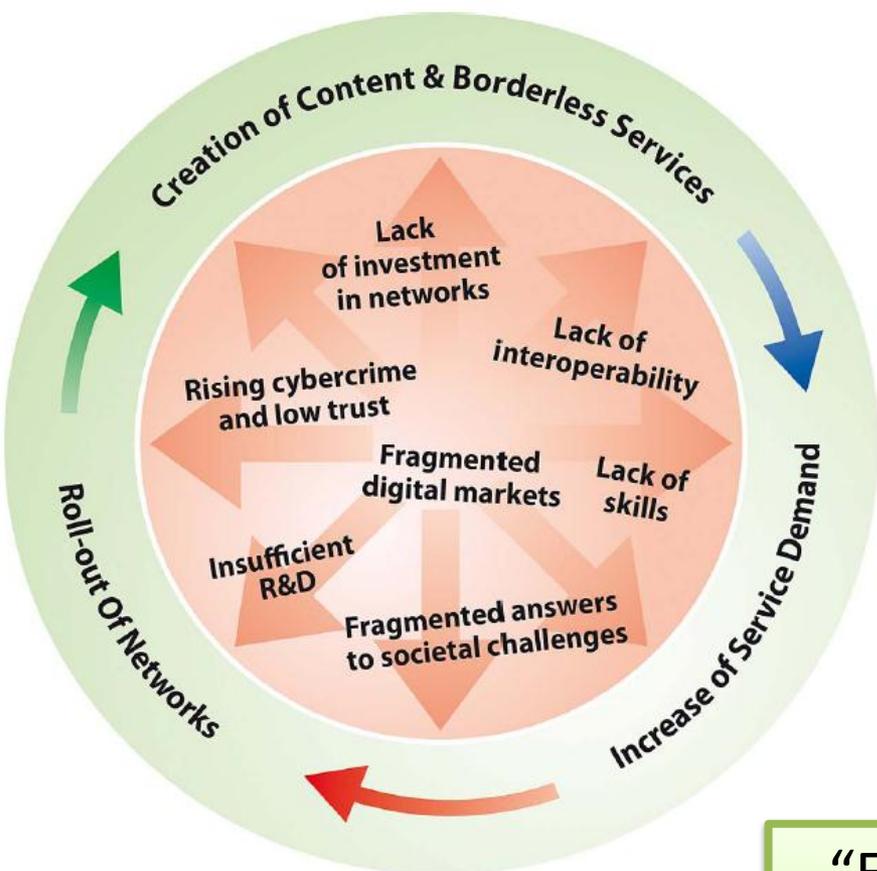


Extracting Knowledge from the Data Deluge



- Borderless Services
- Interoperability
- Supporting Innovation

remove barriers to  
the free movement  
of knowledge



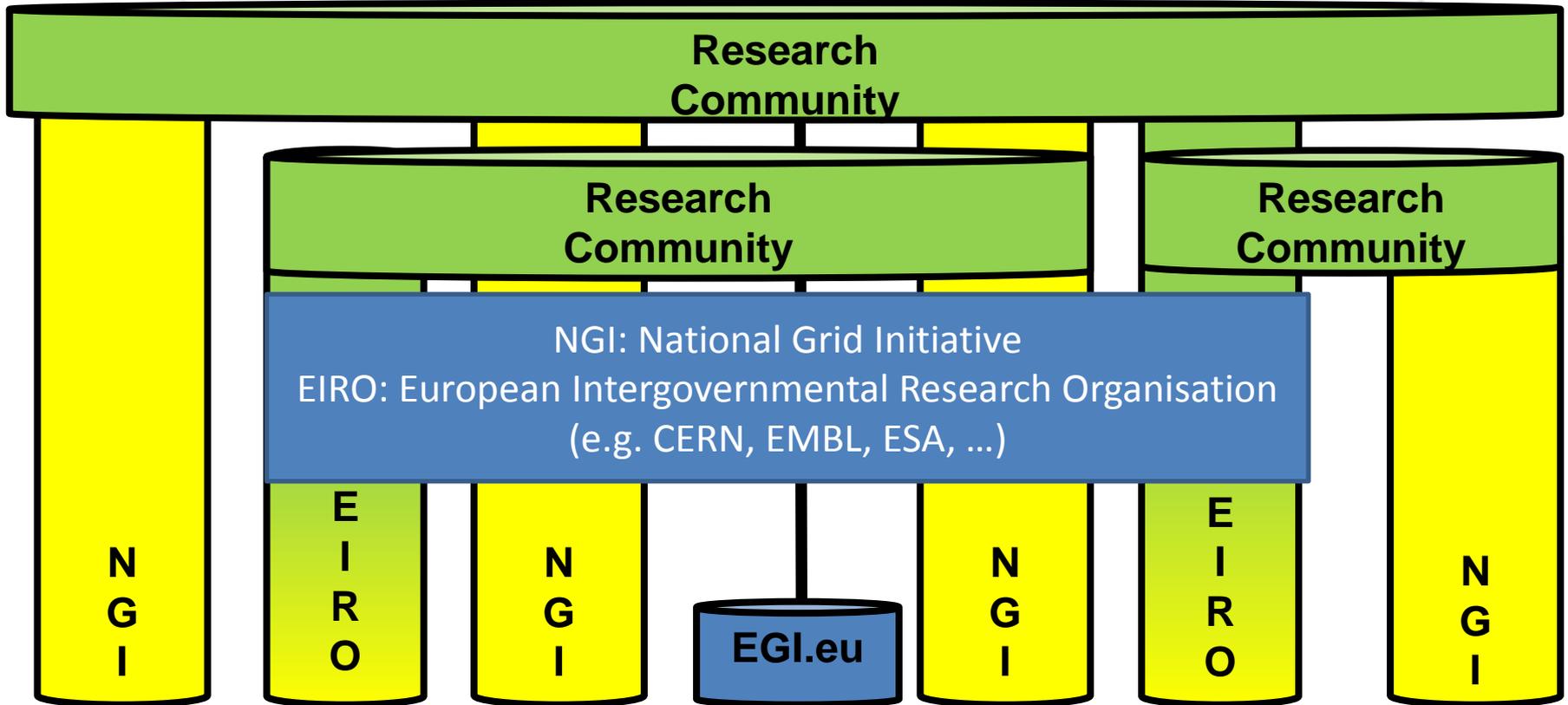
Digital Agenda for Europe

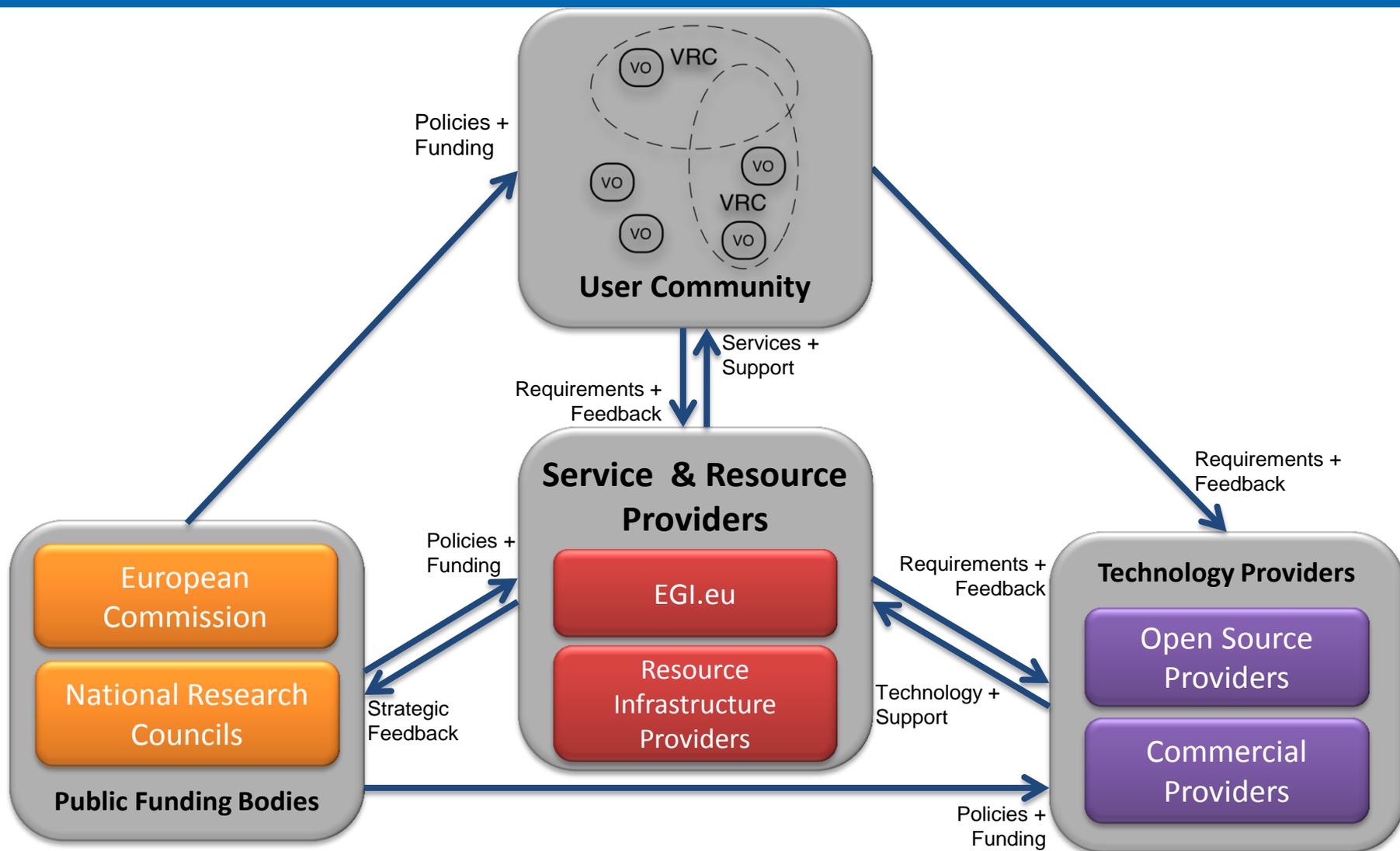
“Europe should also build its innovative advantage in key areas through reinforced e-Infrastructures (i.e. GEANT & EGI)”

## The EGI Model

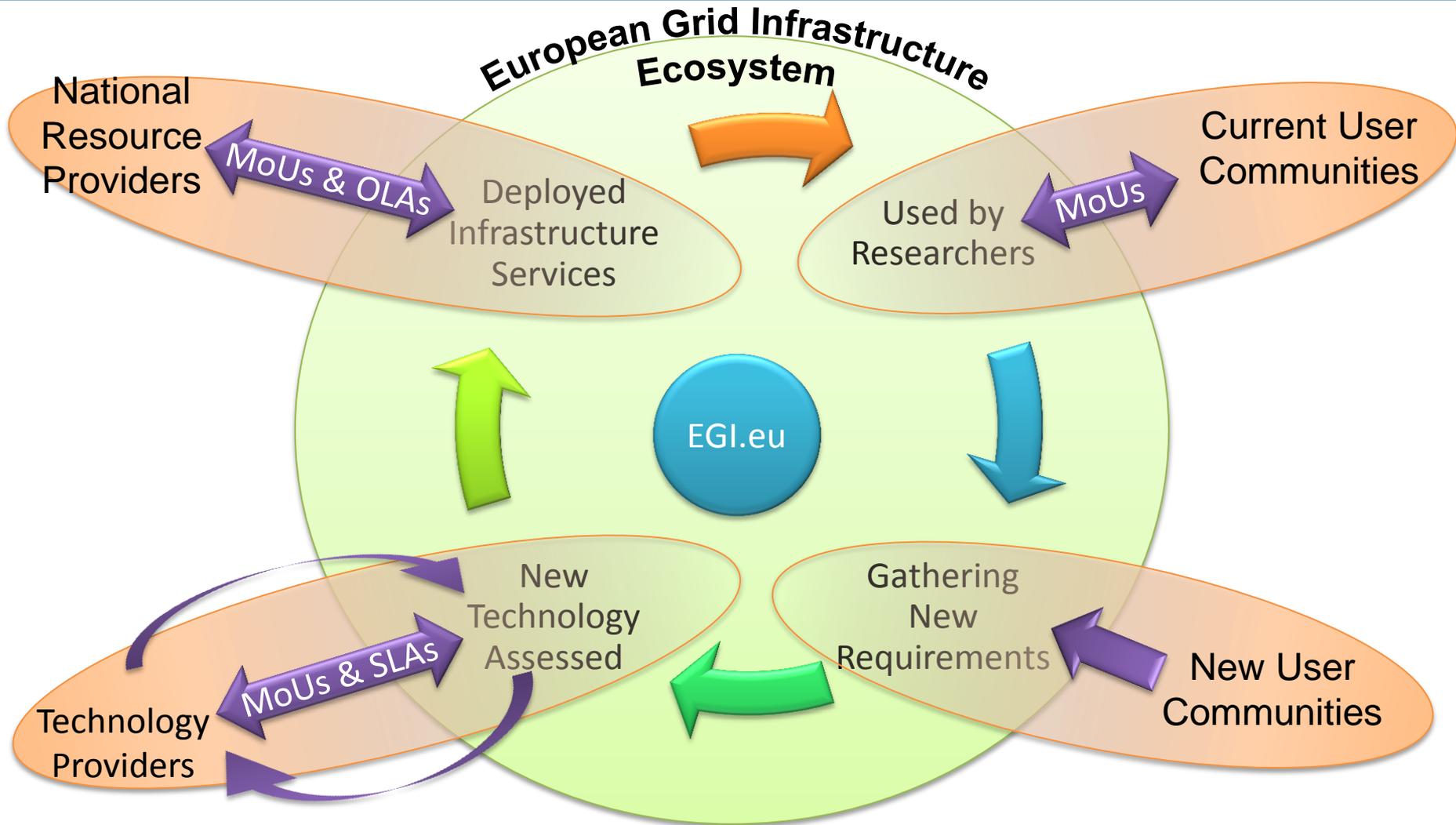


# Collaboration

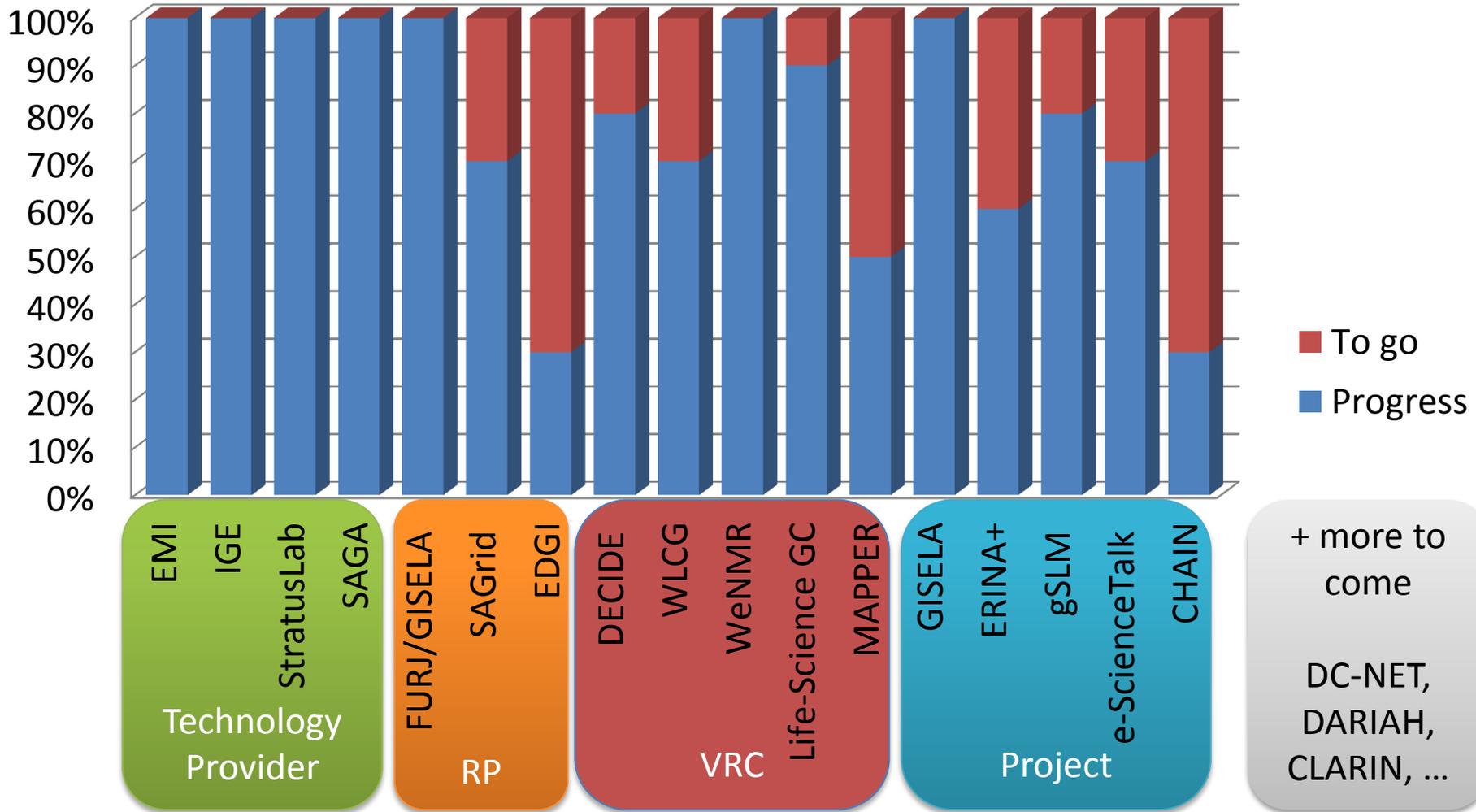




# A Virtuous Service Cycle



<http://www.egi.eu/collaboration/>



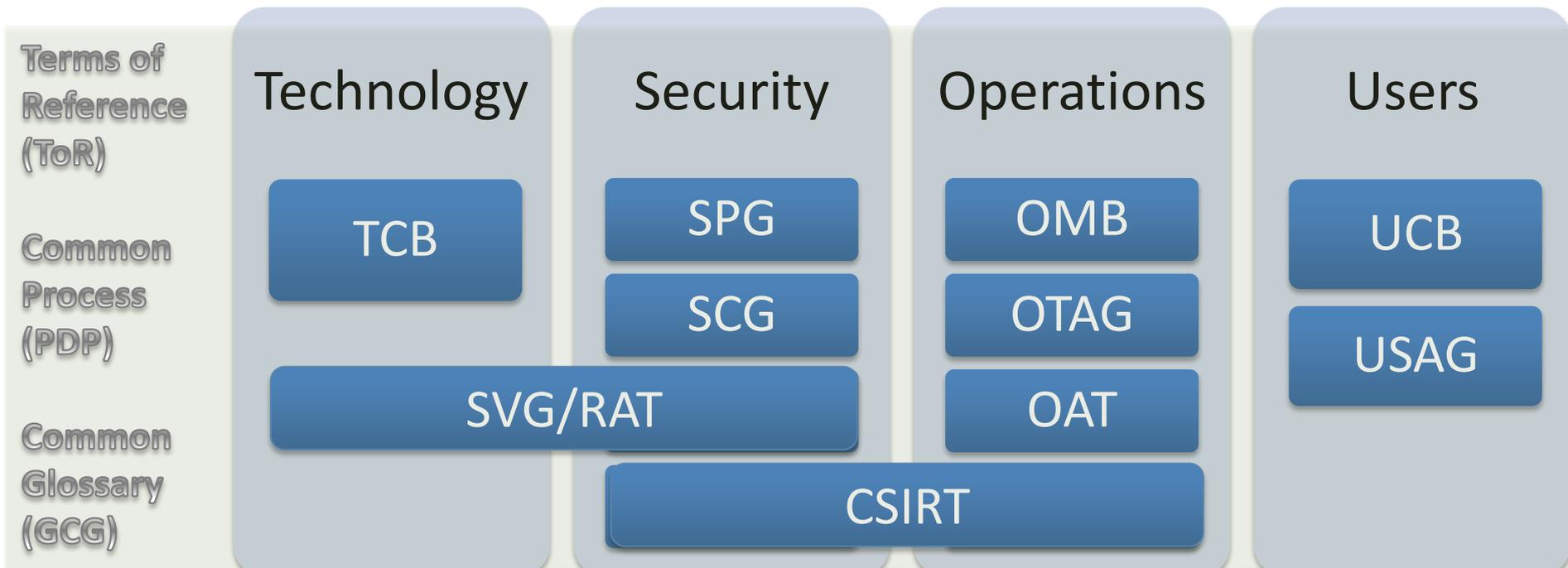
- Coordination for European Grid resources
  - Established February 8th 2010
  - Central policy & services needed to run a grid
  - Sustainable small coordinating organisation
- Based in Amsterdam
  - Coordinating core (~20 people) in Amsterdam
  - Technical services from partners (~20 people)

EGI and EGI.eu: Supported by the EGI-InSPIRE project

- EGI.eu established as non-profit foundation
- Governance & ownership by its participants
  - Participants:
    - European NGIs
  - Associated participants:
    - Organisations aligned with EGI.eu's objectives
- EGI Council contains all participants
  - Votes linked to fees

EGI Council

EGI.eu Executive Board



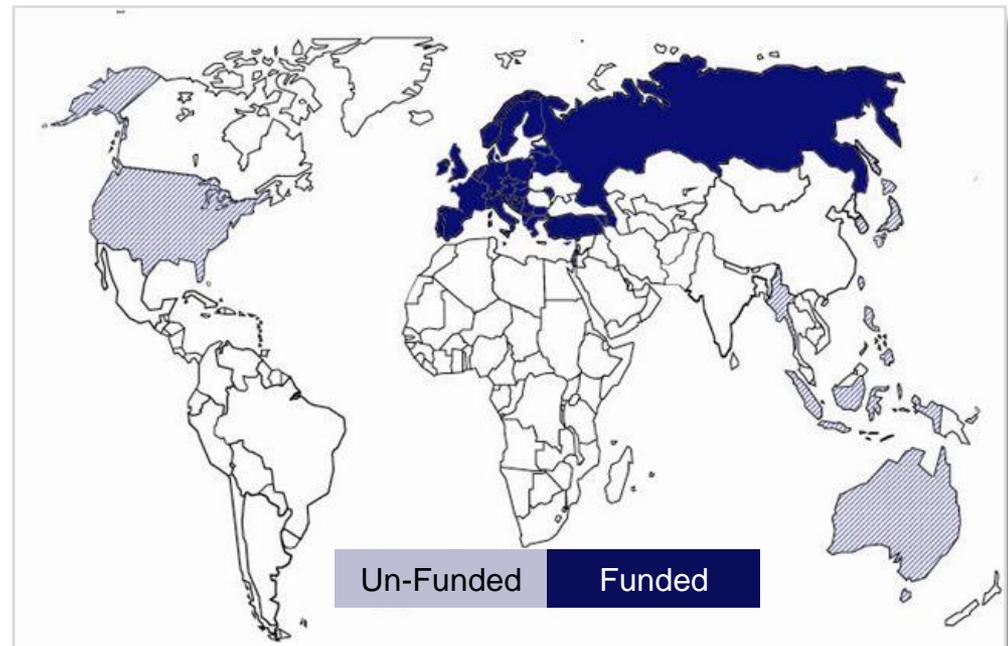
<http://www.egi.eu/policy/groups/>  
[http://go.egi.eu/policies\\_and\\_procedures](http://go.egi.eu/policies_and_procedures)

**I**ntegrated **S**ustainable **P**an-European **I**nfrastructure for  
**R**esearchers in **E**urope

A 4 year project with €25M EC contribution

- Project cost €72M
- Total Effort ~€330M
- Effort: 9261PMs

**Project Partners (50)**  
EGI.eu, 38 NGIs, 2 EIROs  
Asia Pacific (9 partners)



- A sustainable production infrastructure
  - Resource providers in Europe and worldwide
  - With new technologies as they mature
- Support structured international research
  - Sustain current domain specific services
  - Attract new user communities (e.g. ESFRI)

- NA1: Project & Consortium Management
  - Project Office and Quality Assurance
- NA2: External Relations
  - Policy Development and Dissemination
  - Community Building Events
- NA3: User Community Coordination
  - EGI.eu and NGI support teams
  - Supporting Technical Services for Virtual Research Communities
- JRA1: Support for Operational Tools
  - Maintenance and Development
  - Support for new resources and their accounting

- SA1: Operation of the production infrastructure
  - Infrastructure oversight and quality control
  - Operational security
  - Operational Tools, monitoring & accounting
  - Helpdesk & Support teams (NGI & centrally)
  - Validation and integration of new technology
- SA2: Provisioning the Software Infrastructure
  - Definition of software coming from external projects
  - Validation of delivered software
  - Software repository and support tools
- SA3: Support for Heavy User Communities
  - Services & tools for all users of the infrastructure
  - Domain specific support for current heavy users

## What does EGI do?



- Support User Communities
  - Researchers in International Collaborations
  - National Research Collaborations through the NGI
  - Scale up from the single VO to a community
- Provide core services to support users
  - Manage VOs, AppDB, Training Services
- Support teams
  - EGI.eu User Community Support Team
  - NGI User Support Teams
  - NGI Operations Teams
  - Experts within user communities or projects

# A Virtuous User Cycle

Aka: "the chicken and egg conundrum..."

Feedback through  
VRCs in the User  
Community Board

## Discover



User Services  
Advisory Group to  
drive detailed design

## Design

Where is the community?

- VRCs
- Mailing lists
- Workshops
- Forums
- Blogs
- Projects
- Sharing stories
- Collaborating



## Deliver

Integrated Services

- Human
- Technical
- Infrastructure

How can I contribute?

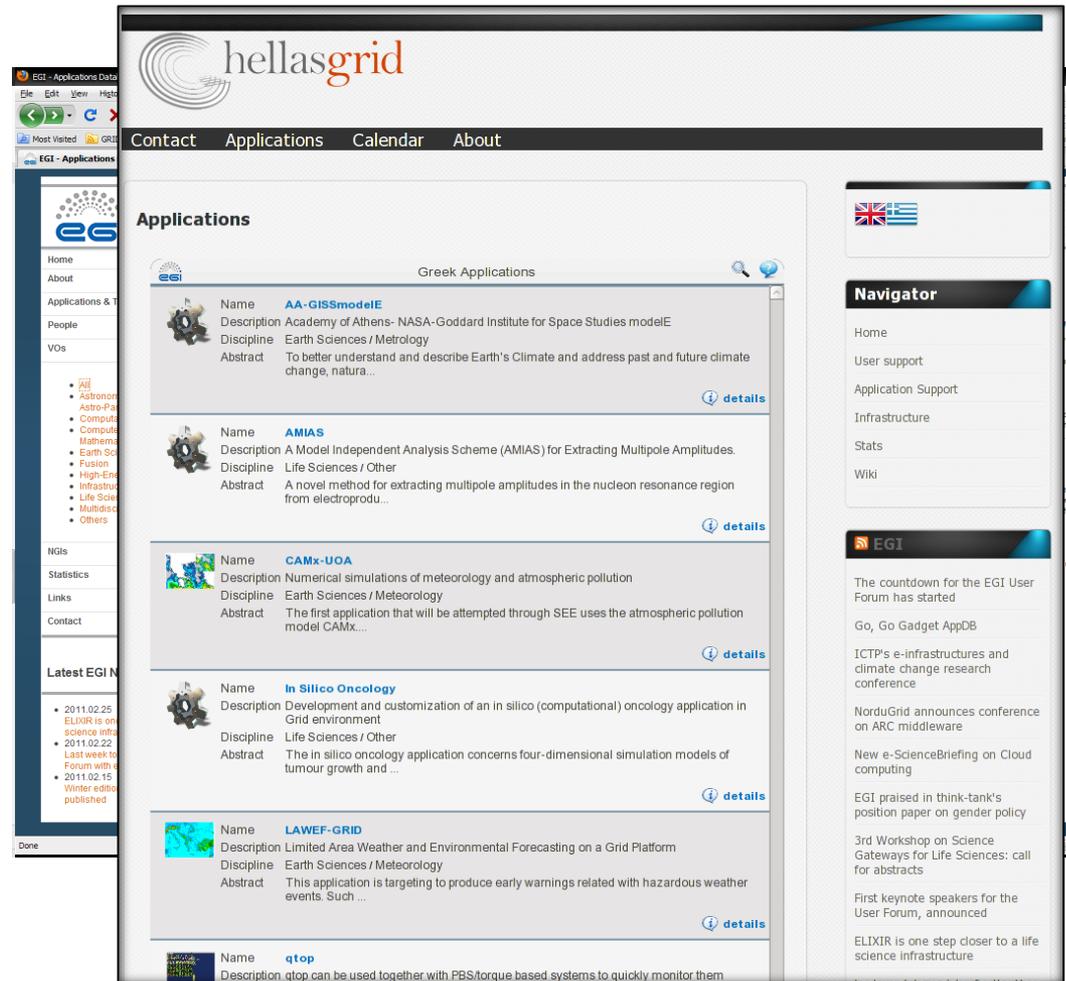
- Applications
- Data collections
- Requirements
- Proposals
- Projects
- Success stories



How do I use these resources?

- Attend training courses
- Utilise training material
- Access data
- Run applications on the grid

- To give recognition to reusable applications
- To give recognition for application developers
- How to get involved
  - Register applications
  - Reuse applications
  - **Integrate AppDB through its gadget into any Webpage!**
- <http://appdb.egi.eu>

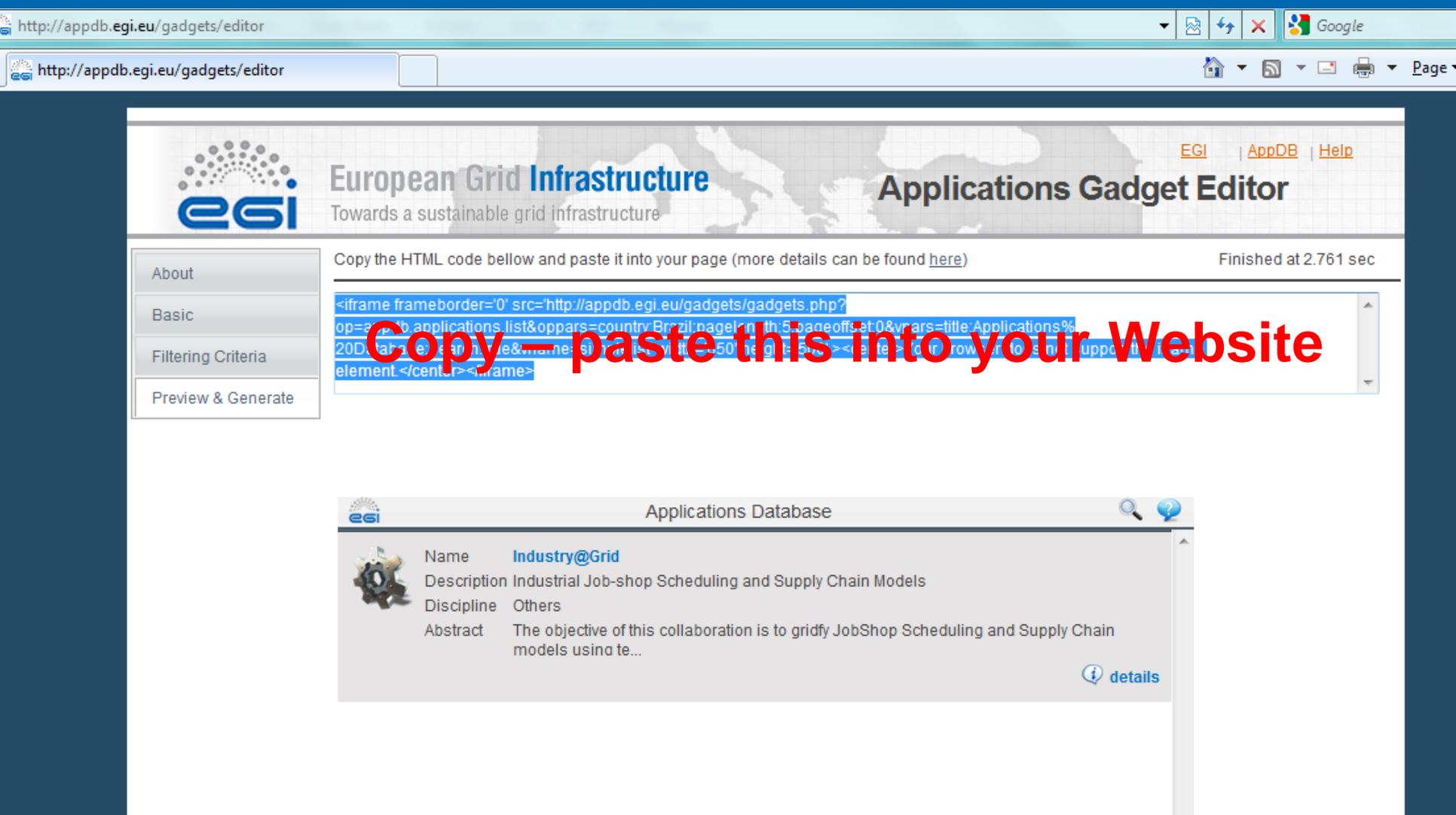


The screenshot displays the 'hellasgrid' Applications database interface. The main content area is titled 'Applications' and lists several entries under the heading 'Greek Applications'. Each entry includes a name, description, discipline, and abstract, along with a 'details' link.

Name	Description	Discipline	Abstract
<b>AA-GISSmodelE</b>	Academy of Athens- NASA-Goddard Institute for Space Studies modelE	Earth Sciences / Metrology	To better understand and describe Earth's Climate and address past and future climate change, natura...
<b>AMIAS</b>	A Model Independent Analysis Scheme (AMIAS) for Extracting Multipole Amplitudes.	Life Sciences / Other	A novel method for extracting multipole amplitudes in the nucleon resonance region from electroprodu...
<b>CAMx-UOA</b>	Numerical simulations of meteorology and atmospheric pollution	Earth Sciences / Meteorology	The first application that will be attempted through SEE uses the atmospheric pollution model CAMx...
<b>In Silico Oncology</b>	Development and customization of an in silico (computational) oncology application in Grid environment	Life Sciences / Other	The in silico oncology application concerns four-dimensional simulation models of tumour growth and ...
<b>LAWEF-GRID</b>	Limited Area Weather and Environmental Forecasting on a Grid Platform	Earth Sciences / Meteorology	This application is targeting to produce early warnings related with hazardous weather events. Such ...
<b>qtop</b>	qtop can be used together with PBS/torque based systems to quickly monitor them		

The interface also features a sidebar with a 'Navigator' section containing links to Home, User support, Application Support, Infrastructure, Stats, and Wiki. There is also a section for 'Latest EGI' news items.

# The AppDB gadget



Copy the HTML code bellow and paste it into your page (more details can be found [here](#)) Finished at 2.761 sec

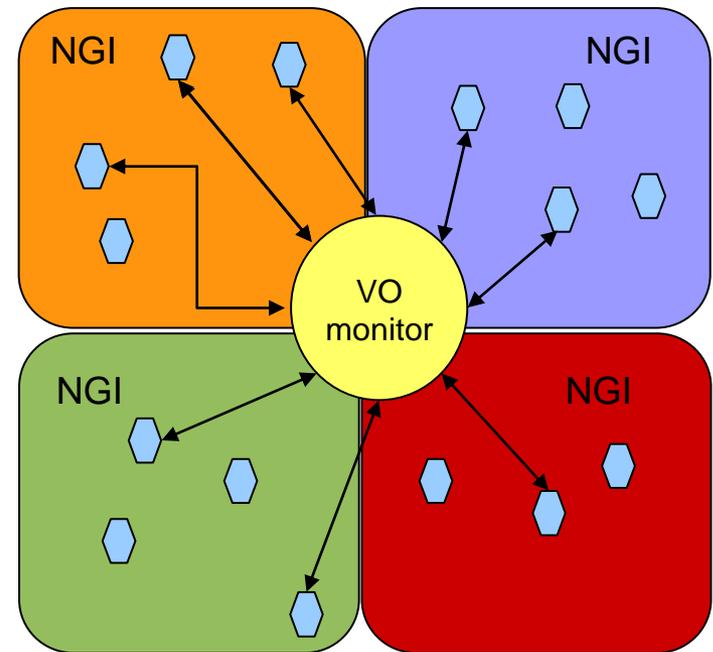
```
<iframe frameborder="0" src="http://appdb.egi.eu/gadgets/gadgets.php?op=appdb.applications.list&oppars=country:Brazil;pageLength=5;pageOffset=0&vparams=title:Applications%20Database;search:me&maxresults=50;highlight=1" style="width:100%;height:100%;border:none;"></iframe></center></frame>
```

**Copy - paste this into your Website**

**Applications Database**

	<p><b>Name</b>     <b>Industry@Grid</b></p> <p><b>Description</b>     Industrial Job-shop Scheduling and Supply Chain Models</p> <p><b>Discipline</b>     Others</p> <p><b>Abstract</b>     The objective of this collaboration is to gridify JobShop Scheduling and Supply Chain models using te...</p> <p style="text-align: right;"><a href="#">details</a></p>
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- Activities
  - Consultancy and helpdesk for VO managers
  - Evaluation of VO management, monitor and accounting tools
  - Provision of VO support software for VRCs
- VO-specific monitoring
  - Monitor only those sites that support you
  - Create and plug-in VO-specific probes
- How to get involved?
  - Request support
  - Prepare and share reviews of VO tools
  - Offer local solutions for VOs through the group

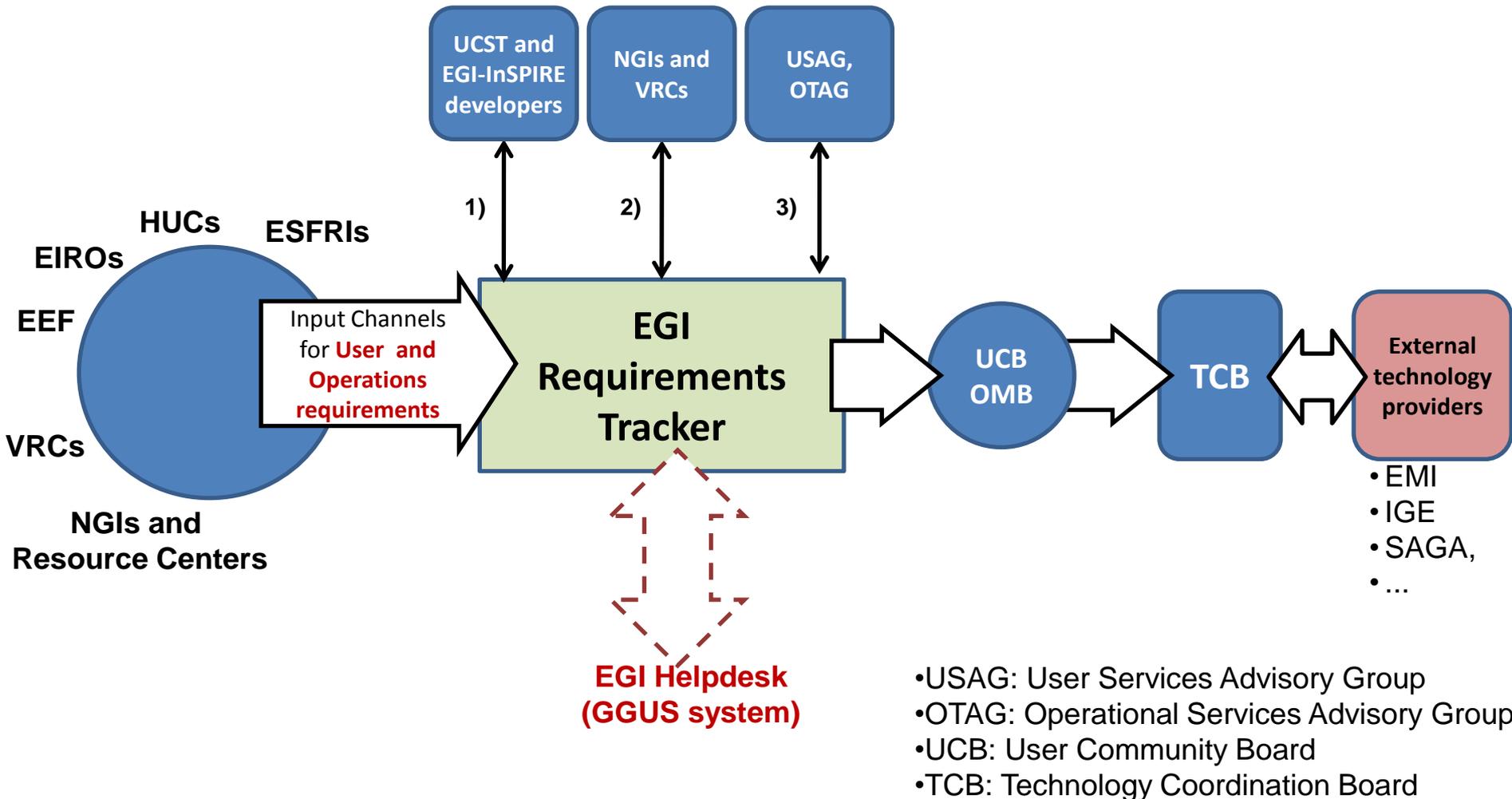


[https://wiki.egi.eu/wiki/VO\\_Services](https://wiki.egi.eu/wiki/VO_Services)

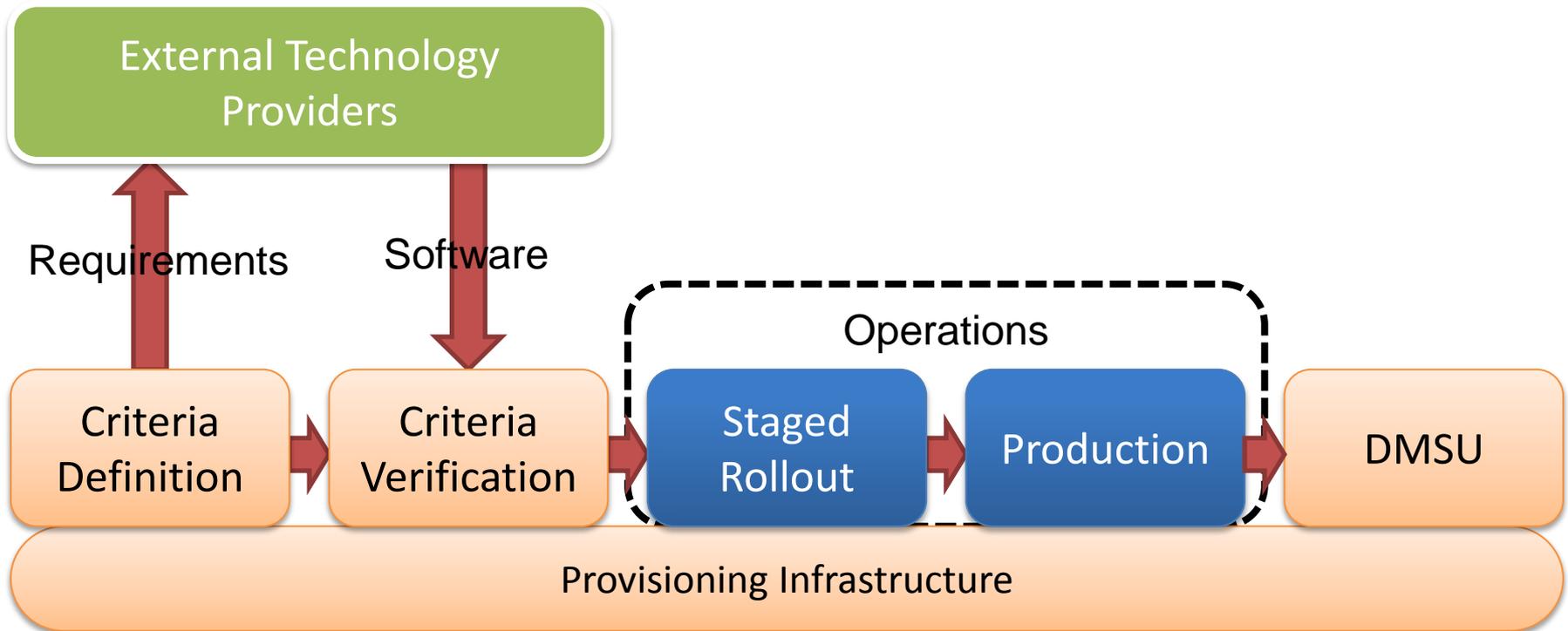
- Integration of...
  - Training event calendar
  - Digital library (of training materials)
  - Service offering and requesting form
  - Plus: community contributed evaluation and reviews
- How to get involved?
  - Register training events
  - Use, reuse and share training materials
  - Offer training-related services (infrastructure, VO, CA, ...)
  - Contribute training-requirements
  - Delegate representative to EGI Training Working Group

<http://training.egi.eu>

# Requirements Lifecycle



## Integrated processes for efficient software provisioning



- EGI Technology Roadmap
  - Technical environment & its evolution
  - Mainstream open-source components
  - Open to commercial components
- Unified Middleware Distribution (UMD)
  - Components from within the EGI community
    - External technology provider: EMI, IGE, SAGA, ...
    - Details contained in the UMD Roadmap
  - To meet the unique needs of EGI users

- Infrastructure for verifying UMD components
  - Technology Provider triggers the process
- Criteria Verification organises and executes the verification workplan
- StagedRollout exposes verified software in the production infrastructure
- UMD release is assembled and published

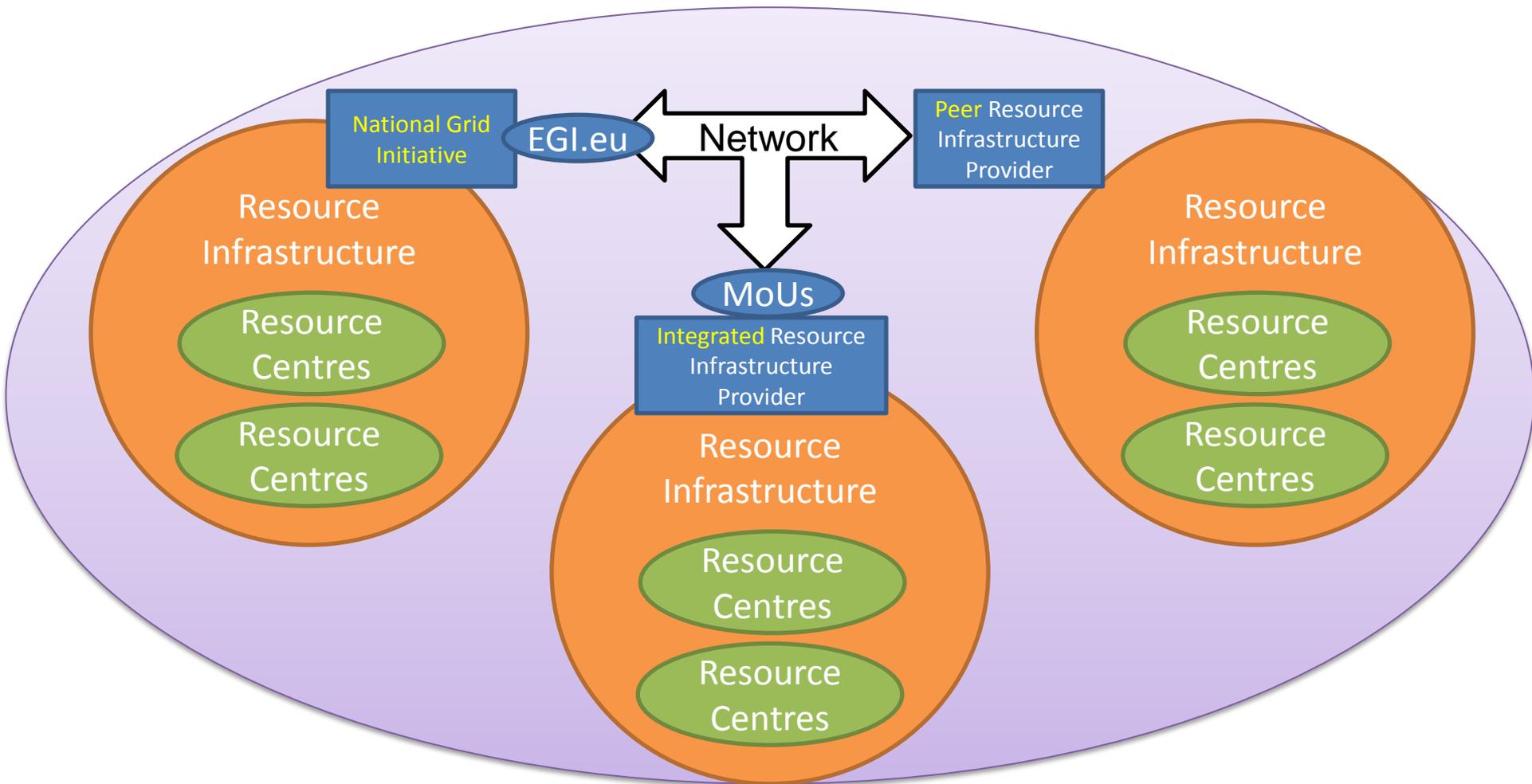
- Comprehensive library of Quality Criteria
- Defines EGI's minimum acceptance level of any delivered software
- Library with defined lifetime, and version
- Liaising with Technology Providers for
  - Proactive Quality Assurance
  - Quality Criteria Review and improvement
  - Timely preparation for software changes

- Formal verification of software using the Quality Criteria library valid at that time
- Publishes verification reports
- Verification reports provides feedback to
  - Criteria definition
  - Technology Providers
  - StagedRollout
  - Deployed Middleware Support Unit (DMSU)
  - UMD Release Notes

- UMD Repository (<http://repository.egi.eu/>)
  - Frontend publishes release notes etc.
  - Temporary internal repositories for:
    - Verification & StagedRollout
  - Composite repository for public UMD updates
- Process management infrastructure
  - GGUS → External Technology Providers
  - RT → Internal Verification and StagedRollout

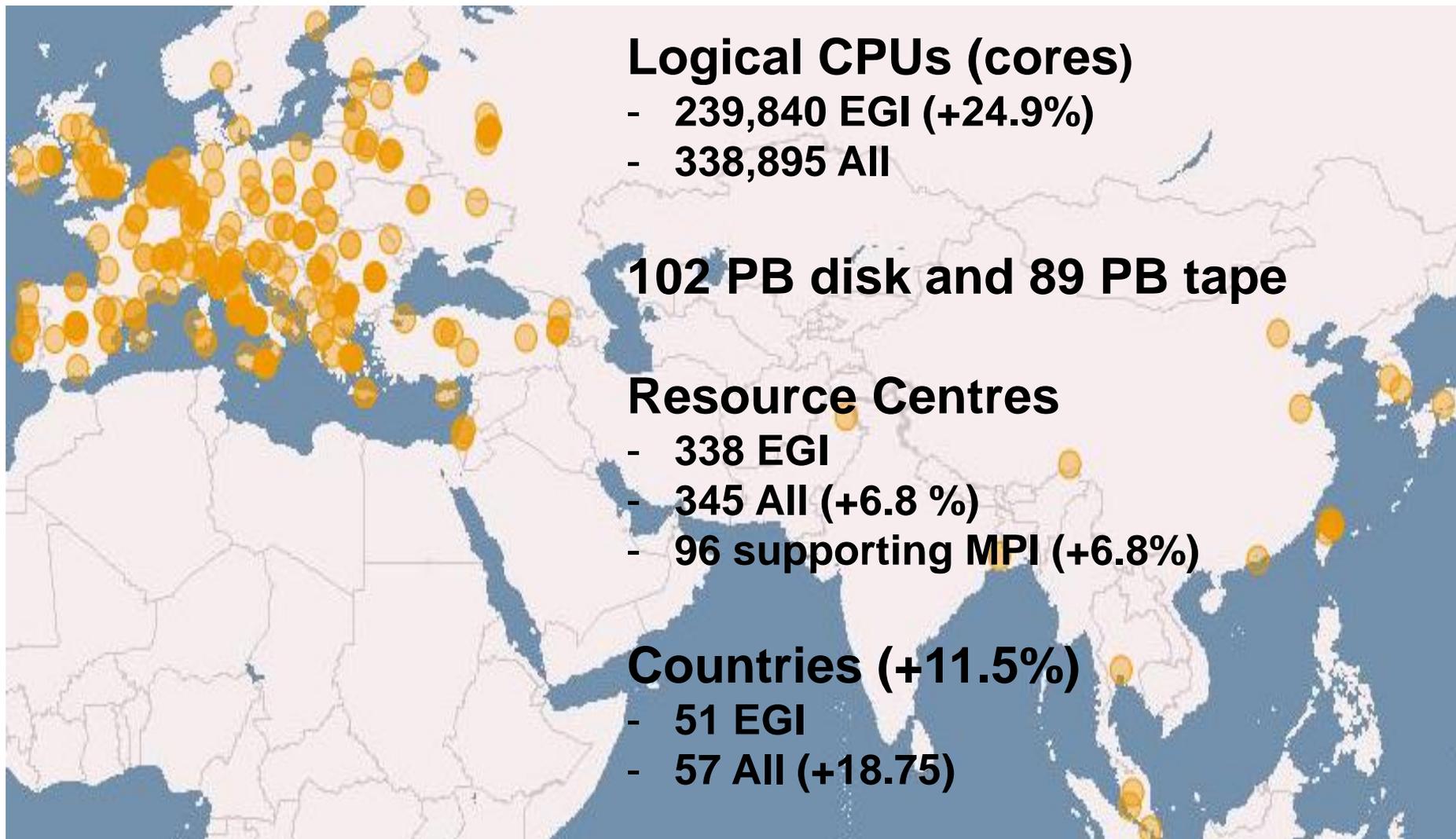
- Second level support unit for middleware
- Resolves issues with documentation, configuration
- Provides workarounds for known issues
- Develops and publishes best practices for popular components
- Provides recommendations for Technology Providers via the TCB

- Supporting major production computing
  - At an unprecedented scale – both quantitatively and qualitatively
- Delivering common solutions across multiple communities
  - Identifying areas for future work
- Broadening the use of grid technology and HUC services to related projects within the HUC domain
  - Especially unfunded Life Science & Earth Science projects
- Developing a S.W.A.T. analysis of each HUC
  - Focus steps on the road to sustainability



**Integrated:** infrastructure operated by a non-EGI-InSPIRE partner but relying on EGI operational services (MoU)

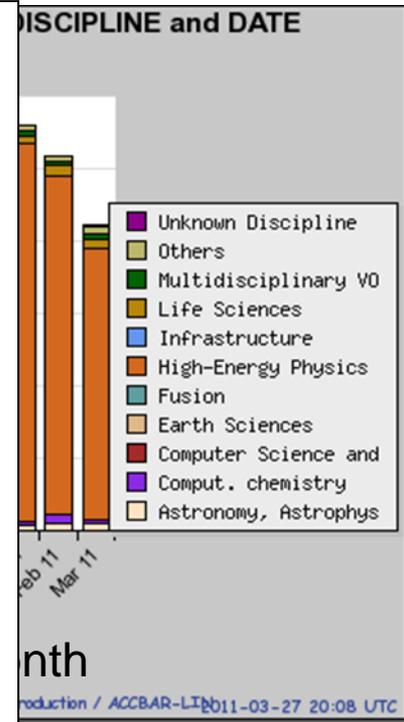
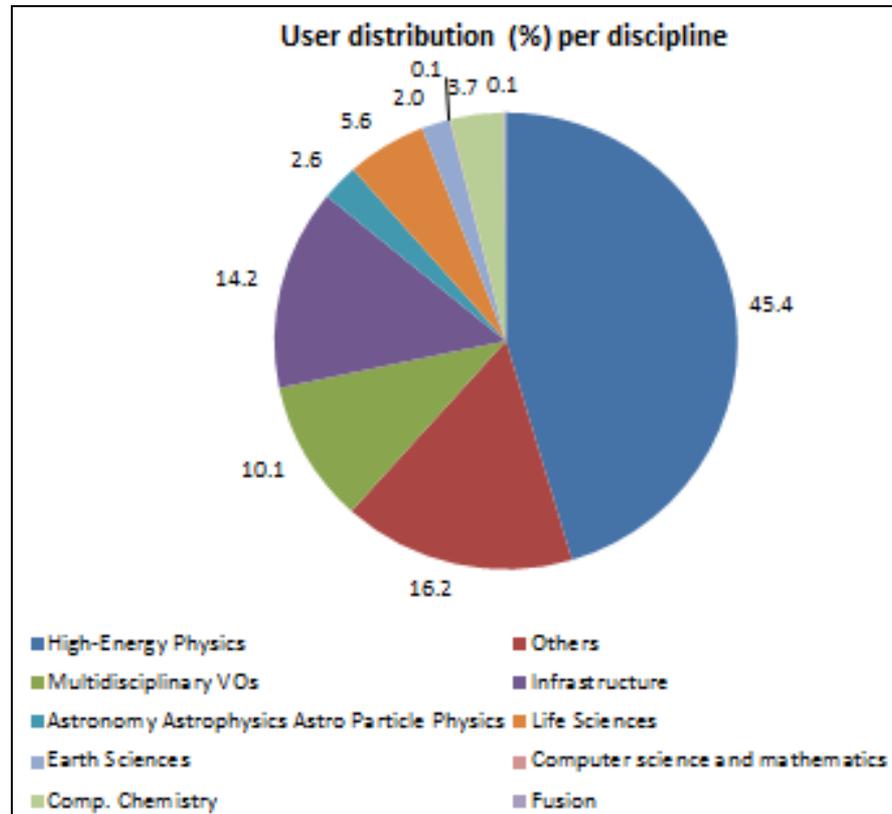
**Peer:** infrastructure accessible to EGI users, but relying on own operational services



11226 End-users (-7.7%)  
 219 VO (+17.7%)  
 ~30 active VOs: constant

## User Communities

Archeology  
 Astronomy  
 Astrophysics  
 Civil Protection  
 Comp. Chemistry  
 Earth Sciences  
 Finance  
 Fusion  
 Geophysics  
 High Energy Physics  
 Life Sciences  
 Multimedia  
 Material Sciences



Average usage 2010-2011 vs 2009-2010

- 26.6M jobs/month, 873,400 jobs/day (+420%)
- 74.6M CPU wall clock hours/month (+86.5%)
- 551M HEP-SPEC06 CPU wall clock hours/month (+99.4%)

- **22 National Operations Centres**
  - Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Cyprus, Croatia, Czech Republic, France, FYR of Macedonia, Germany, Georgia, Greece, Hungary, Israel, Italy, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Turkey
- **5 Federated Operations Centres (16 NGIs)**
  - IberGrid (Portugal and Spain)
  - The Netherlands Federation (Belgium and The Netherlands)
  - Russian Federation (Russia and Ukraine)
  - NDGF Federation (Austria, Denmark, Estonia, Finland, Latvia, Lithuania, Norway and Sweden)
  - United Kingdom/Ireland Federation

- **1 EIRO Operations Centre: CERN**
- **4 Non-European Operations Centres**
  - *Asia Pacific Federation*: Australia, China, India, Japan, Malaysia, Philippines, South Korea, Taiwan and Thailand
  - *Canada Federation*: Canada and China
  - *GISELA Consortium (IGALC Federation)*: Argentina, Brazil, and Venezuela
  - *Latin America*: Brazil, Chile, Colombia and Mexico

- Develops and maintains operational tools
  - Regionalised for NGI deployment

Tool	Link	Partner
Operations Portal	<a href="https://operations-portal.egi.eu/">https://operations-portal.egi.eu/</a> <u>The old CIC portal</u>	CNRS
Service Availability Monitoring	Nagios and MyEGI portals fully regionalised at NGIs <a href="https://wiki.egi.eu/wiki/SAM_Instances">https://wiki.egi.eu/wiki/SAM_Instances</a>	CERN/SRCE
Grid Configuration database (GOODB)	<a href="https://goc.egi.eu/">https://goc.egi.eu/</a>	SFTC
EGI Helpdesk (GGUS)	<a href="http://helpdesk.egi.eu/">http://helpdesk.egi.eu/</a>	KIT
Accounting Portal	<a href="http://accounting.egi.eu/">http://accounting.egi.eu/</a>	FCTSG
Metrics Portal	<a href="http://metrics.egi.eu/">http://metrics.egi.eu/</a>	FCTSG

## WELCOME TO GOCDB CENTRAL VISUALISATION PORTAL

GOCDB is the official repository for storing and presenting EGI topology and resources information.

### What information is presented here?

This portal presents a view of topology and resources information for the whole EGI infrastructure. This consists of:

- Participating National Grid Initiatives (NGI)
- Grid Sites providing resources to the infrastructure
- Resources and services, including maintenance plans for these resources
- Participating people, and their roles within EGI operations

This is a visualisation tool. Data are provided and updated in real time through this central interface.

**How to update** [Simple/Advanced filters](#)

Unless your NGI uses a specific interface, you can access the GOCDB Central Visualisation Portal.

Did you know...?

- FAQ & Wiki
- Documentation
- Training
- Registration
- Search ticket
- Submit ticket
- Support staff

Navigation on top

### Welcome to GGUS

#### Tickets @ GGUS

- Information on your tickets
- Submit a new ticket
- Submit a new ticket

GGUS tickets for Daniele Cesini

ID	Status	Date	Info
67870	assigned	2011-02-24	Problem with MPI in requesting nodes for...

Show my complete ticket list (open/closed/subscribed)

Search ticket database

#### Latest open tickets

ID	VO	Info
70679	ops	Add "pilot" role for OPS VO
70678	none	NAGIOS "org.sam.SRM-LsDir-/ops/Role=lgadmin" failed
70677	atlas	INFN-NAPOLI-ATLAS: failed to contact on remote SRM
70676	atlas	transfers from INFN-NAPOLI-ATLAS_PROD to INFN-NAPOLI-ATLAS_PROD
70675	none	NAGIOS "org.sam.CREAMCE-JobSubmit-/ops/Role=lgad..." failed
70673	atlas	Transfer efficiency is low on UKI-SCOTGRID-GLASGOW...
70672	atlas	Failed to complete PrepareToPut request on UK-LT2...
70671	atlas	globus_ftp_client: Connection timed out from AGLT2...
70670	none	RU-Provino-IHEP does not publish a required attri...

### Service Availability

#### Site Availability Profile: ROC (Daily Report)

(Click on the Graph below to see Availability of Individual Services at this central interface)

## EGI ACCOUNTING PORTAL

GLOBAL View | VO MANAGER View | VO MEMBER View | SITE ADMIN View | USER View | REPORTS | METRICS PORTAL | LINKS

### Hierarchical Tree

- Tier1
- Tier2
- Countries
- EGI
  - Production
    - AsiaPacific
    - CERN
    - GermanySwitzerland
    - Italy
      - NGI\_AEGIS
      - NGI\_AL
      - NGI\_ARMGRID
      - NGI\_BA
      - NGI\_BG
      - NGI\_BY
      - NGI\_CH
      - NGI\_CYGRID
      - NGI\_CZ

### EGI View -> Production

Print Page

Data to graph: Norm. Sum CPU (kSI2K-hours) | Normalised CPU time to a reference value of 1000 SpecIn20

Period: Start year: 2010 | Start month: 6 | End year: 2011 | End month: 5

Groupings: Show data for: REGION | as a function of: VO

VO Groups: LHC | TOP 10 | ALL | Custom

Chart: Type: ACCUM BAR | Scale: LINEAR

dteam VO:  Exclude dteam and ops VOs jobs information

Refresh

### PRODUCTION Normalised CPU time (kSI2K) by REGION and VO

LHC VOs: June 2010 - May 2011.

## CENTRAL OPERATIONS PORTAL

Welcome Daniele Cesini

Handover | User List | Regional List | Metrics

NGI: Italy | Open site boxes with ticket or alarm

OR one ticket

18 site(s) found

	IN2P3-LPC, Clermont-Ferrand, France	APEL
	Bureau Recherches Geologiques Minières	APEL
	Grille de Recherche d'Ile de France (GRIF)	APEL

- Message Broker Network Configuration to support tools and operations
- Development of the Central Accounting Repository (clients provided by the EMI project)
- Development of accounting systems needed for “new” resource types
  - Billing
  - Accounting of application usage
  - Accounting of data usage
  - Accounting of capacity and cloud computing usage

- Disseminate EGI's activity within the project and worldwide through its regionally dispersed dissemination contacts.
- Developed the EGI branding and content for the project and event websites.
- Produced 12 monthly Director's Letters, 4 issues of the EGI *Inspired* newsletter, published success stories in *International Science Grid This Week* and *Public Service Review*.
- Produced a range of brochures and posters.
- EGI website received over 30,000 visitors in its first year, around 365,000 page views.
- Attended a range of international events, including ISC2010 in Germany, ICT 2010 in Brussels, eChallenges in Warsaw, SciTech in Brussels, ISGC in Taipei, and SC10 in the US.
- Hosted booths at the EGI Technical and User Forums, and ran outreach campaigns that included printed materials, press releases, social media feeds and blogs.
- NGIs in the International task contributed events, websites, materials, publications, papers, translations, press releases and outreach to policy makers.

- Website
- Wiki
- Blogs
- Newsletters
- Letters
- Social Media



**European Grid Infrastructure**  
Towards a sustainable grid infrastructure

**Welcome**

The European Grid Infrastructure enables access to computing resources for European researchers from all fields of science, from High Energy Physics to Humanities.

[Video presentation](#)

**Latest News**

**Software Sustainability Institute holds Collaborations Workshop**  
Simon Hettrick, SSI, February 4, 2011

**Events**

Vandaag | vrijdag, 4 februari



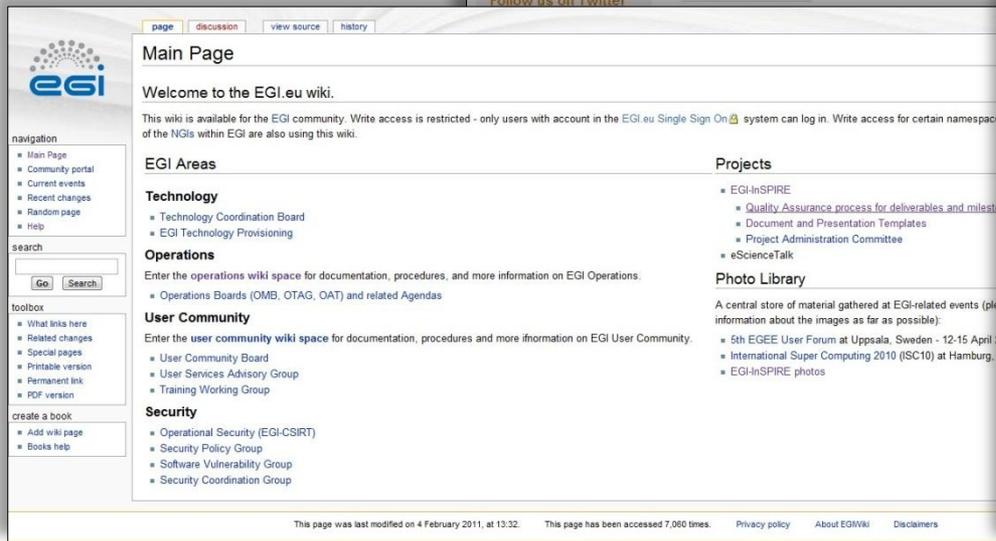
**Inspired**  
Summer 2010

News from the EGI community

**User Community**  
*Applications database is up and running*  
Looking for grid applications to make the difference?  
// page 1

**Operations**  
*Central European ROC evolves into NGIs*  
CE-ROC shut up shop on 31 July, after providing core services in eight European countries for more than six years.  
// page 2

*Distributed monitoring service is operational*  
Grid monitoring has become the first fully-distributed



**Main Page**

Welcome to the EGI.eu wiki.

This wiki is available for the EGI community. Write access is restricted - only users with account in the EGI.eu Single Sign On system can log in. Write access for certain namespaces of the NGIs within EGI are also using this wiki.

**EGI Areas**

- Technology**
  - Technology Coordination Board
  - EGI Technology Provisioning
- Operations**
  - Enter the operations wiki space for documentation, procedures, and more information on EGI Operations.
    - Operations Boards (OMB, OTAG, OAT) and related Agendas
- User Community**
  - Enter the user community wiki space for documentation, procedures and more information on EGI User Community.
    - User Community Board
    - User Services Advisory Group
    - Training Working Group
- Security**
  - Operational Security (EGI-CSIRT)
  - Security Policy Group
  - Software Vulnerability Group
  - Security Coordination Group

**Projects**

- EGI-InSPIRE
  - Quality Assurance process for deliverables and milestones
  - Document and Presentation Templates
  - Project Administration Committee
- eScienceTalk

**Photo Library**

A central store of material gathered at EGI-related events (please inform about the images as far as possible):

- 5th EGEE User Forum at Uppsala, Sweden - 12-15 April 2010
- International Super Computing 2010 (ISC10) at Hamburg, Germany
- EGI-InSPIRE photos



**The EGI blog**  
Behind the scenes of EGI

Blog Home

**Clouds and Complex Systems in Paris**

On Monday I visited a bright but chilly Paris for a meeting with the complex systems community, to talk about grids and clouds. The event was organised by the ASSYST project, which is coordinated by Jeff Johnson of the Open University and funded from the ...

Posted by Catherine Gater on February 2, 2011 1:39:00 PM CET #

**EGI Training Working Group**

Support for training is a key user community service that helps EGI expand the size and expertise of user communities. Training within EGI is distributed by nature: NGIs organise training events and NGIs develop training materials. However, EGI.eu contributes to the success of these activities with...

[Read more...](#)

**About the blog**

Welcome to the EGI blog, the place to share your ideas, thoughts and activities with the rest of the EGI community. To comment on a post simply login with your SSO account.

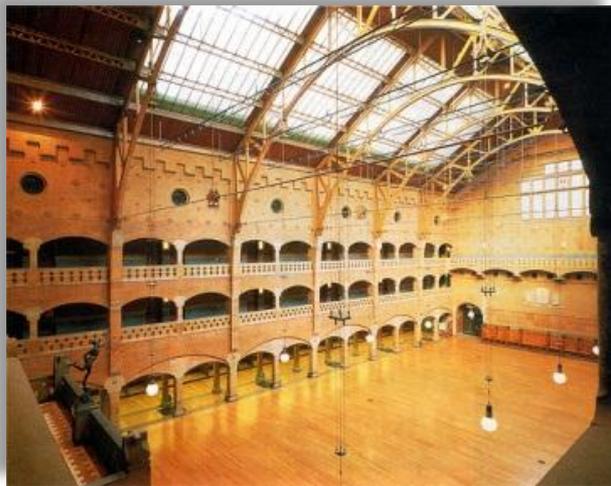
If you want to blog regularly please email [blog-admin@egi.eu](mailto:blog-admin@egi.eu) and you will be given access to post with your SSO account.

**Login**

Username:

Password:

Remember me



- Held in Amsterdam at the Beurs van Berlage, 14 - 17 September 2010 in partnership with the BiG Grid project, and attracted 570 delegates.
- First major event for the EGI community and brought together European distributed computing projects and their collaborators in academia and businesses.
- Aimed to establish collaborations between the new and the current European DCI projects to meet the needs and requirements of the research community.
- Included 290 contributions in the form of presentations, demos, posters and workshops.
- 22% of delegates used the iPhone application, 28% used Twitter, 10% Flickr, 25% YouTube, 8% the GLOBAL webcast of the plenaries and 28% read the GridCast blog.
- Two press releases were issued leading to 27 press cuttings, including *HPCwire*, *iSGTW*, *ZDNet*, *Yahoo News*, *ITnews* in Australia, *Science Business* and *Environment & Energy Management*.
- GridCast team from e-ScienceTalk produced 26 posts on the blog and 6 videos on YouTube.



- Organised by EGI.eu, Vilnius University and LITNET in Vilnius, Lithuania, 11-14 April 2011, with the support of the European Middleware Initiative (EMI) and local secretariat BAIP.
- Held at the Radisson Blu Lietuva in Vilnius, Lithuania, showcasing the diversity of the EGI user community, attended by 427 delegates.
- Programme included networking and opportunities to ‘meet the EMI experts’.
- Featured 196 contributions, 173 speakers and 34 session conveners.
- Over 250 images on Flickr, 30 posts on the GridCast blog, including 14 videos and slide shows. Over 2,600 unique visitors visited the main event website, representing 20,000 page views.
- Press articles appeared in *HPCWire*, the SSI blog, the GÉANT newsletter and *iSGTW*.
- Book of Abstracts published for distribution at the event.

- **Deploy Technology Innovation**
  - Distributed Computing continues to evolve
    - To include: Grids, Desktops, Virtualisation, Clouds, ...
- **Enable Software Innovation**
  - Provide reliable persistent technology platform
    - Tools built on gLite/UNICORE/ARC/Globus
- **Support Research Innovation**
  - Infrastructure for data driven research
    - Support for international research (e.g. ESFRI)



- Will come from outside EGI
  - Moving research technologies into production
- Partnership with technology projects
  - EMI (European Middleware Initiative)
  - IGE (Initiative for Globus in Europe)
  - EDGI (European Desktop Grid Initiative)
  - StratusLab
  - VenusC
  - SAGA



- Will also come from outside EGI
  - EGI is a neutral platform for applications
- EGI cannot support all services for all users
  - Every community needs something different
- Foster innovation within different ‘sectors’
  - e.g. Digital Libraries
    - gCube from D4Science



- An infrastructure to support European Researchers
  - Within the EU27
  - Geographical Europe
  - Interoperability worldwide for collaboration
- Work with Virtual Research Communities
  - Groupings of aligned Virtual Organisations
  - Enable their community specific support activity:
    - Support, training, consultancy, requirements etc.



## Future Plans



- Grids have benefited from commoditisation
  - Hardware: HTC & HPC affordable to all
  - Networking: GBs can be moved over WAN
  - Software: Open source software comes of age
- The impact of commodity virtualisation...
  - For transactional models →
    - The ‘Cloud’: A model based on compute not data
  - For large distributed data-oriented models →
    - The emergence of true ‘function shipping’?

- Be a neutral resource provider
  - Any application, any domain, any technology
  - A platform for domain specific innovation & use
  - Integration of any compliant resource
- End-user needs and technologies change
  - Allow VOs to deploy their own services
    - VOs will then need to manage **their** infrastructure
  - Give VOs the power to meet their own needs

- Data Layer
  - Secure reliable data movement
  - Access to data resources
- Virtualisation Layer
  - Span trust domains within agreed policies
  - Monitoring as important as lifecycle control
- Service Layer
  - The services that go into the virtual machine
  - Avoid domain specific silos & promote reuse

Consensus  
Openness  
Balance  
Transparency

- Continue with a secure reliable infrastructure
  - Integrated: gLite & ARC
  - Underway: Globus & UNICORE
- Support its user communities
  - Maintain user services & tools
  - Engage with structured (virtual) user communities
    - Encourage structuring in unstructured user communities
    - Defined representatives within EGI bodies
  - Engage with the ESFRI projects

- EGI.eu established in Amsterdam
  - Supported through EGI-InSPIRE project
- EGI has transitioned from a federation of regional to national resource providers
- EGI will work with technology providers to have a standards based open architecture
- EGI will evolve to support the needs of its current and new user communities

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