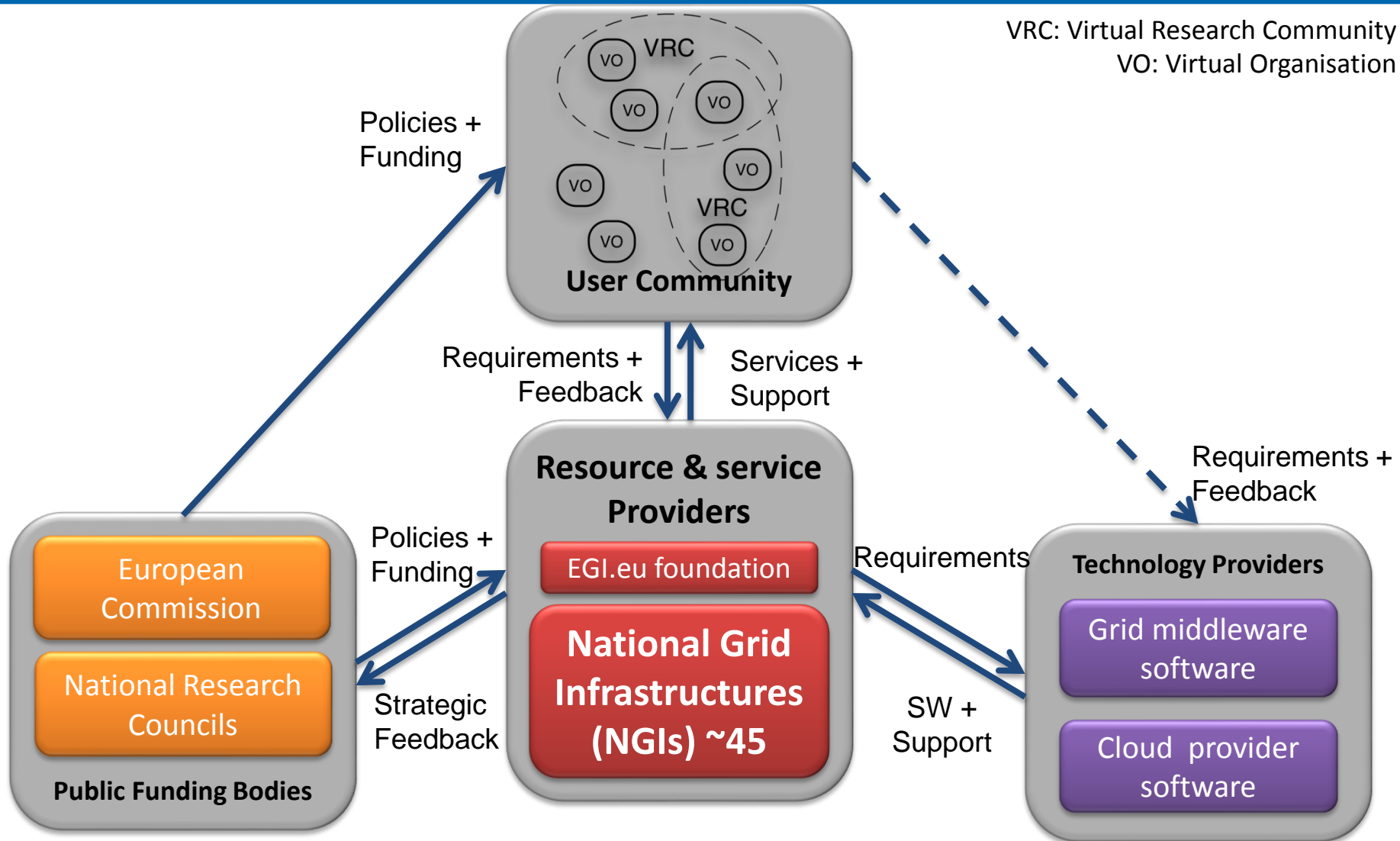


Federated Identity Management: Status and perspectives of EGI

Gergely Sipos
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- Introduction to the European Grid Infrastructure
- AAI in the middleware-based EGI
- Towards FIM adoption
 - EGI Federated Cloud
 - Federated AAI Pilot for EGA
 - NGI survey
- Conclusions and next steps

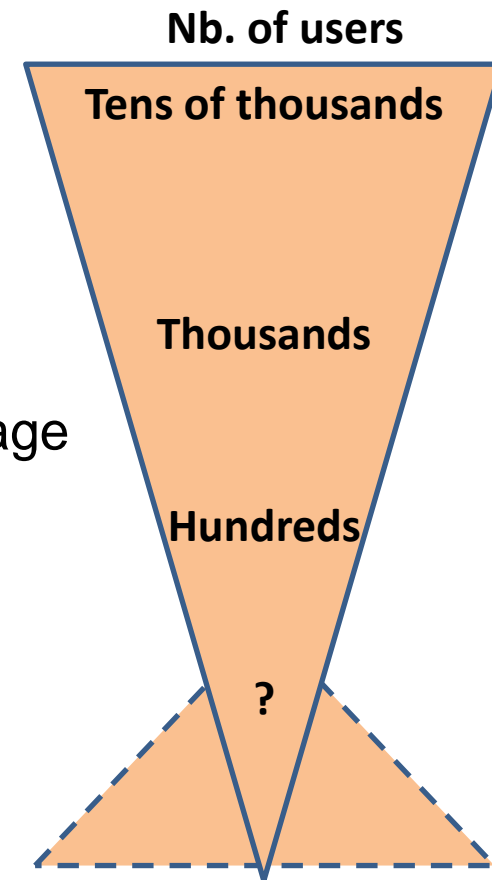
The EGI Ecosystem



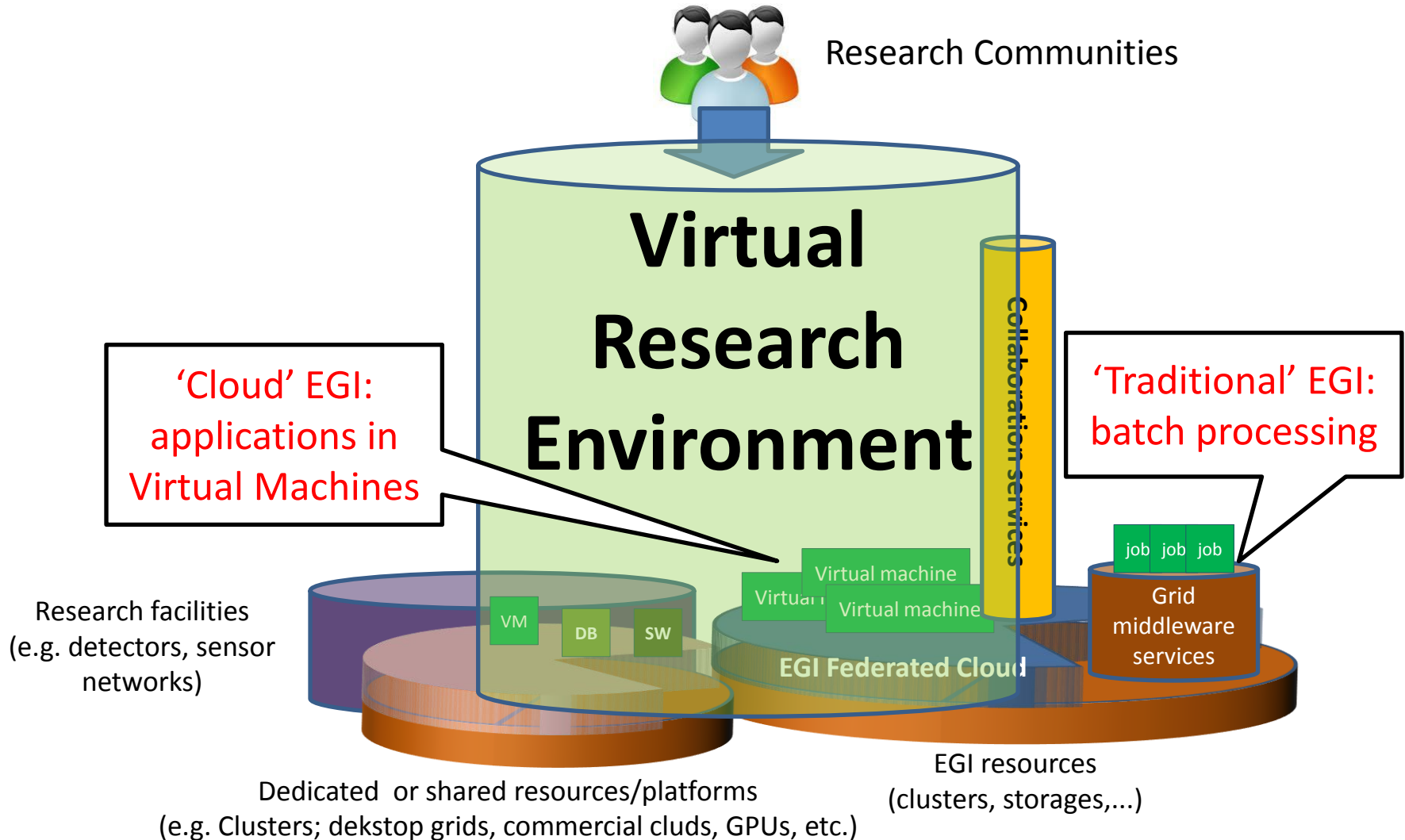
- Operational Infrastructure
 - Operate a European wide infrastructure
 - Offer its use to other research infrastructures
 - Build a federated cloud environment
- Community & Coordination
 - Community building through events
 - Community networking through the NGIs
- Virtual Research Environments (VREs)
 - Support the development, integration & operation of community/project/domain specific services

Grid = federated resources exposed for controlled sharing
via middleware services

- X.509 personal certificates
 - From IGTF CAs
 - From Terena Certificate Service
- Limited certificates
 - Restricted in lifetime and/or infrastructure coverage
- Robot certificates
 - Belong to applications (portals) instead of users
- Identity federations
 - Middleware bridging, science gateways



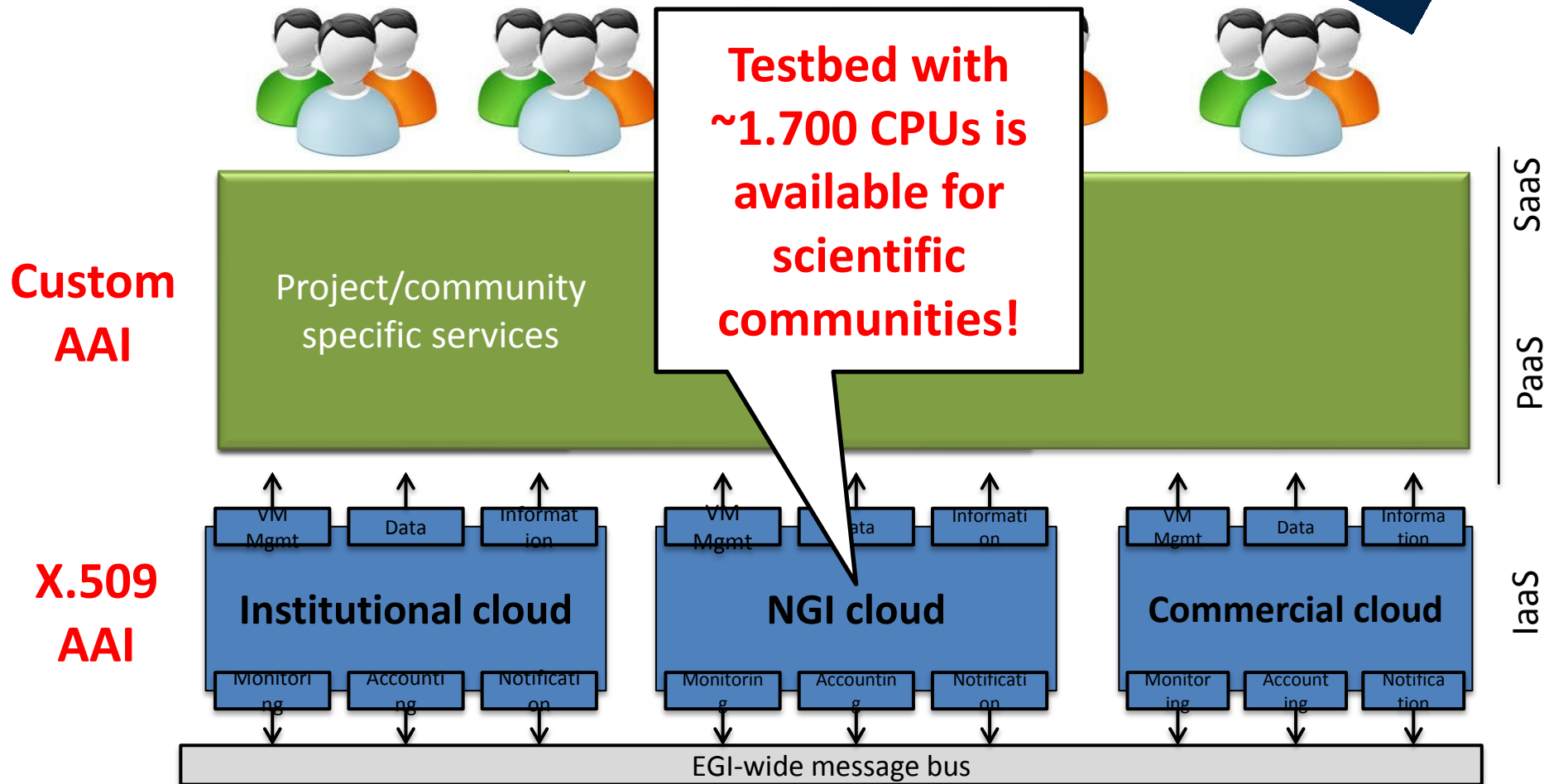
Federated Cloud: a new EGI platform



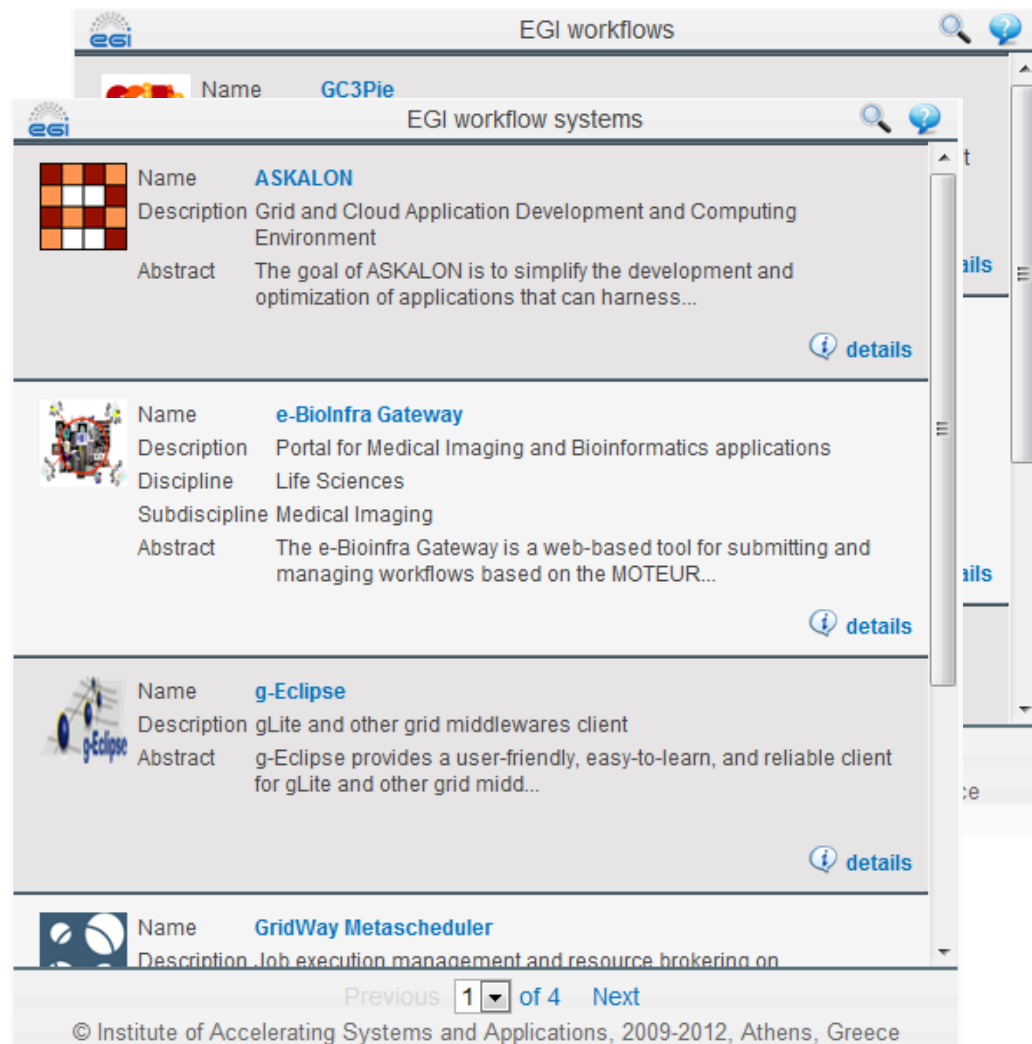
FIM adoption in the EGI cloud

Digital Agenda for Europe 2010-2020

Personalised environments for individual research communities in the European Research Area




- Turn applications into repeatable, sharable experiments
- Catalogue of existing workflow tools and workflow applications
 - <http://go.egi.eu/workflows>



The screenshot displays the 'EGI workflows' interface. At the top, there is a search bar and a 'Name GC3Pie' filter. Below this, a list of workflow systems is shown, each with an icon, name, description, discipline, and abstract. The systems listed are ASKALON, e-BioInfra Gateway, g-Eclipse, and GridWay Metascheduler. Each entry has a 'details' link. At the bottom, there is a pagination control showing '1 of 4' and a copyright notice for the Institute of Accelerating Systems and Applications, 2009-2012, Athens, Greece.

Name	Description	Discipline	Abstract
ASKALON	Grid and Cloud Application Development and Computing Environment		The goal of ASKALON is to simplify the development and optimization of applications that can harness...
e-BioInfra Gateway	Portal for Medical Imaging and Bioinformatics applications	Life Sciences	The e-BioInfra Gateway is a web-based tool for submitting and managing workflows based on the MOTEUR...
g-Eclipse	gLite and other grid middlewares client		g-Eclipse provides a user-friendly, easy-to-learn, and reliable client for gLite and other grid midd...
GridWay Metascheduler	Job execution management and resource brokering on		

- Access EGI-based applications through the Web
- Catalogue of existing portals and enabling technologies
 - <http://go.egi.eu/sciencegateways>
- “How-to” documentation for portal developers
 - Under development
 - https://wiki.egi.eu/wiki/VT_Science_Gateway_Primer
- **NEW:** Become an associated member of the SCI-BUS project
 - Funding for portal development
 - <http://www.sci-bus.eu>



The screenshot shows the EGI Science Gateways portal. At the top, the EGI logo and the text "European Grid Infrastructure" are visible, along with the tagline "towards a sustainable future". A navigation menu includes "COMMUNITY", "INFRASTRUCTURE", "SERVICES", "HOW DO I...?", "CASE STUDIES", and "NEWS & MEDIA". The main content area is titled "Science gateways" and contains introductory text about EGI e-infrastructure and science gateways. Below the text, there are several search results for gateways, including:

- GENIUS**: Grid Enabled web eNvironment for site Independent Job Submission. Discipline: Others. Abstract: In the last few years, the develop of modern e-Infrastructures, built on top of a Network and Grid I...
- gUSE WS-PGRADE**: Grid User Support Environment. Discipline: Others. Abstract: ...
- AMBER**: The AMBER molecular dynamics workpackage. Discipline: Life Sciences. Abstract: "Amber" refers to two things: a set of molecular mechanical force fields for the simulation of biomo...
- CS-Rosetta**: NMR chemical shift-based structure prediction. Discipline: Life Sciences. Subdiscipline: Structural Biology. Abstract: CS ROSETTA is a protocol which generates 3D models of proteins, using only the 13CA, 13CB, 13C, 1...
- VBrowser**: An easy to use file browser for the Grid. Discipline: Others. Abstract: The Virtual Resource Browser or VBrowser is an easy to use file browser for the Grid. It supports co...

The footer of the page includes the copyright notice: "© Institute of Accelerating Systems and Applications, 2009-2012, Athens, Greece".

- European Genome-phenome Archive AAI Pilot
 - Interface EGA service with an Identity Federation (HAKA, Finland)
 - Demonstrator supported through EGI-InSPIRE (EBI-EMBL, CSC, EGI.eu)
- Virtual Team project
 - Assess the readiness of the NGIs in adopting FIM mechanisms:
https://wiki.egi.eu/wiki/VT_Federated_Identity_Providers_Assessment
 - Terena Certificate Service
 - Availability of personal certificates
 - Availability for ‘NGI institutions’
 - Availability for potential EGI user institutions
 - Custom FIM solutions
 - Czech, French, Italian, Irish, Swiss NGIs + EGI.eu

Requirements for a generic AAI: Geographical coverage, science discipline coverage, scalability, robustness, simplicity, sustainability, integrate-ability with EGI platforms.

- X509 certificates
 - Complicated to most users, but no sign of change in middleware (provided by EMI, IGE)
 - Expected to stay for platform developers for the IaaS cloud
- Terena Certificate Service
 - Not much simpler, serious lack of coverage (country, NGI members, community)
- FIM solutions
 - There is no single provider, standard. Rapid evolution and adoption
 - Several initiatives by EC (EduGAIN, REFEDS, ...) and NGIs (IT, CH, HU, CZ...)
 - EGI community-wide collection, evaluation and discussion of these is the next step: AAI workshop at the EGI Technical Forum

White paper / Report

- Authentication solutions in the European Grid Infrastructure
<https://documents.egi.eu/document/1178>

Questions?

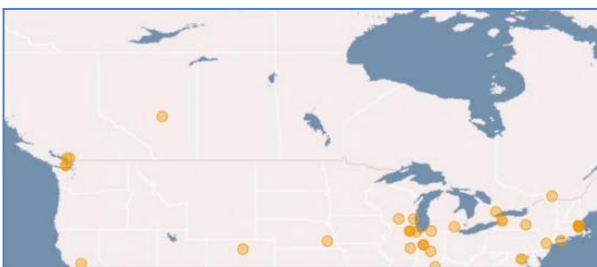
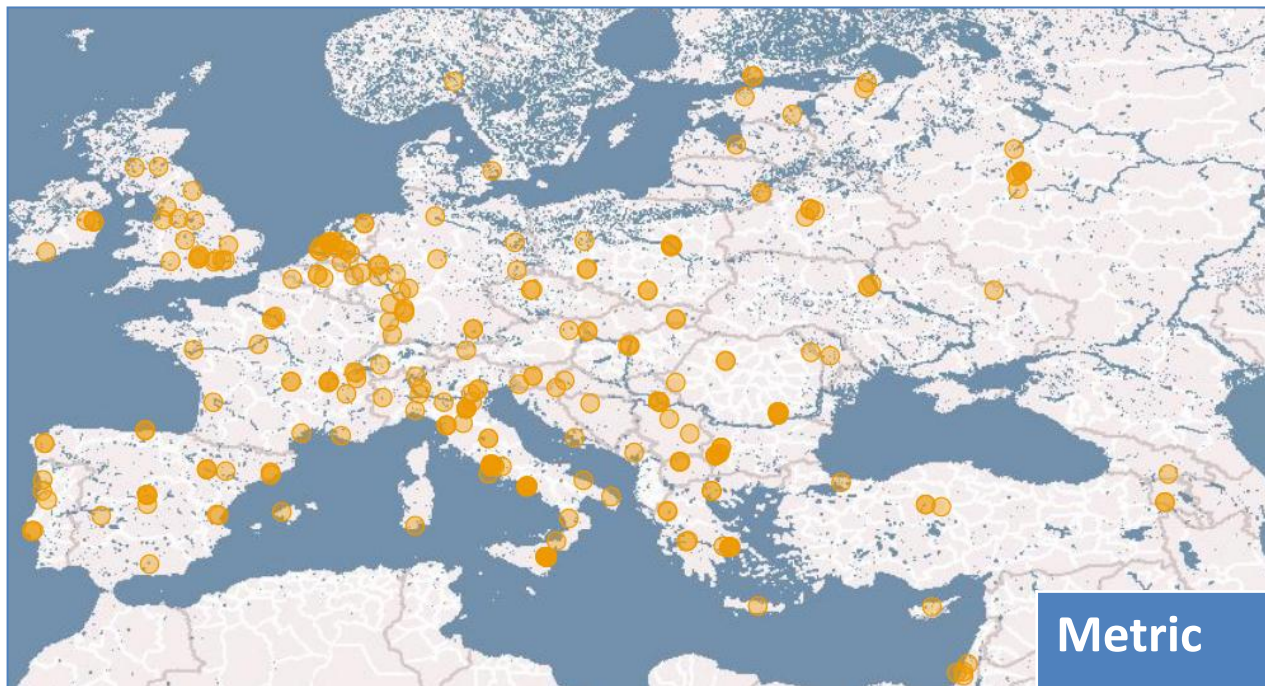


EGI Technical Forum 2012,
Prague, Czech Republic, 17-21 September
www.egi.eu

AAI Workshop

Send your one paragraph long abstract before July to
gergely.sipos@egi.eu, peter.solagna@egi.eu

Installed capacity (Apr '12)



Metric	Value (yearly increase)
Sites	326 (+3%)
Nb. of CPU cores	270,800 (+31%)
Disk (PB)	139 PB (+31%)
Tape (PB)	134 PB (+50%)

- Infrastructure Capabilities
 - VM Management, Data Management, Information Discovery, Accounting, Monitoring, Notification
- Community Capabilities
 - Federated authentication & authorisation, VM Image Sharing (Virtual Image repository)
- Implementation based on third party, **open standards** and **open source implementations**:
 - Front-end interfaces: OCCI, CDMI-OVF, GLUE-LDAP
 - Back-end interfaces: UR+-StAR, Nagios, ActiveMQ
 - Providers: OpenNebula, OpenStack, Stratuslab

Integrated Sustainable Pan-European Infrastructure for Researchers in Europe

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)

