

European Grid Infrastructure

A pan-European Research Infrastructure
supporting the digital European Research
Area

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Panel: e-Infrastructures and Digital Libraries

To support the digital European Research Area through a pan-European research infrastructure based on an open federation of reliable services that provide uniform access to national computing, storage and data resources.

To connect researchers from all disciplines with the reliable and innovative ICT services they need to undertake their collaborative world-class and world-spanning research

Core Values	
Leadership	Openness
Reliability	Innovation

- **E**uropean
 - Over 35 countries
- **G**rid
 - Secure sharing
- **I**nfrastructure
 - Computers
 - Cloud
 - Data
 - Instruments
 - and others



- 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 (~25 people) in Amsterdam
 - Technical services from partners (~20 people)

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

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)



Operational Infrastructure

Registered Users: 22,197 VOs: 237
 LCPUs: 361,300 Disk: 235PB Tape: 176PB
 Jobs: 1.44 million/day

Resource Centres	EGI-InSPIRE & EGI Council members	319
	Including integrated RPs	347
Countries	EGI-InSPIRE & EGI Council members	42
	Including integrated RPs	53

Integrated EGI-InSPIRE Partners and EGI Council Members

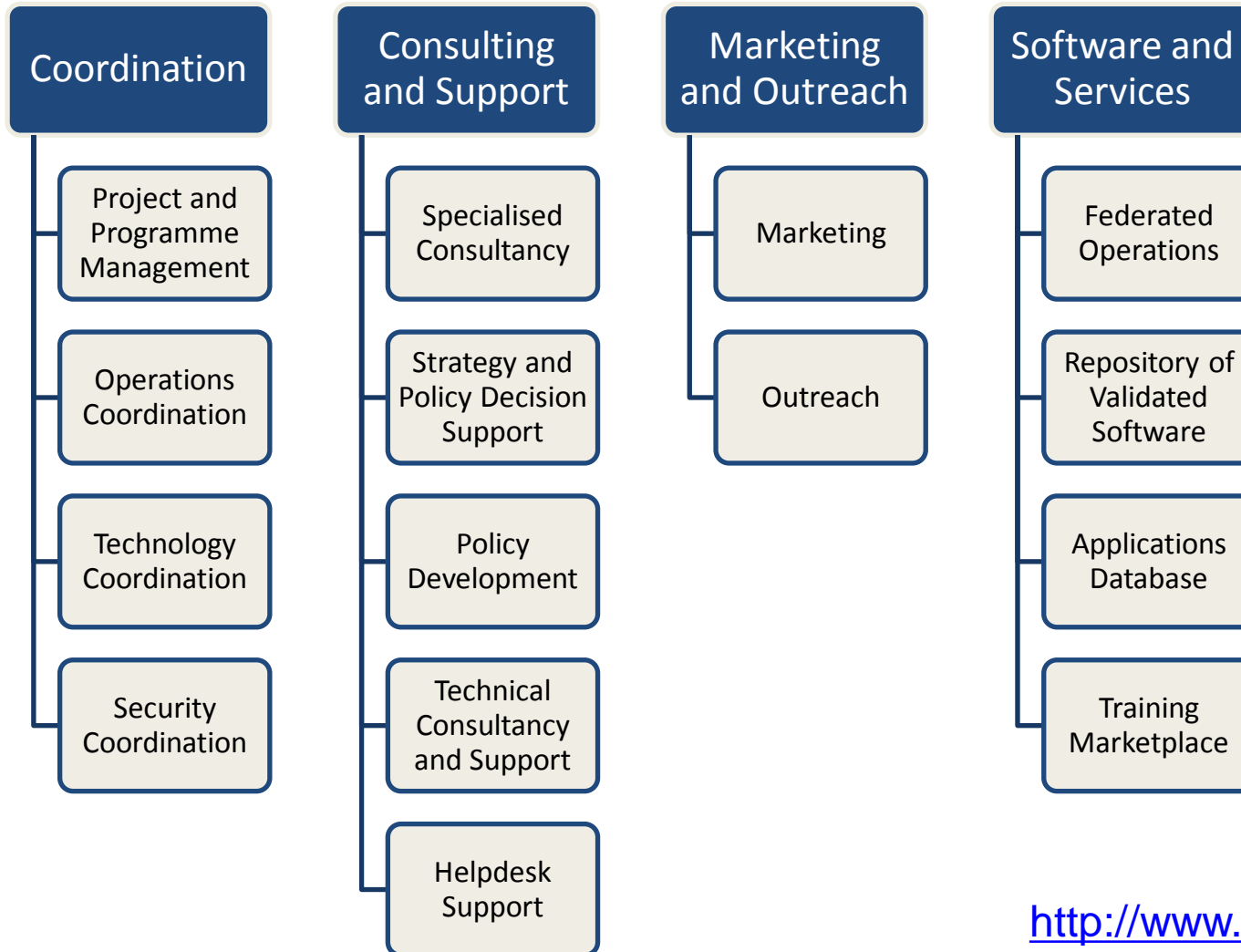
External Resource Providers (integrated)

Internal/External Resource Providers (being integrated)

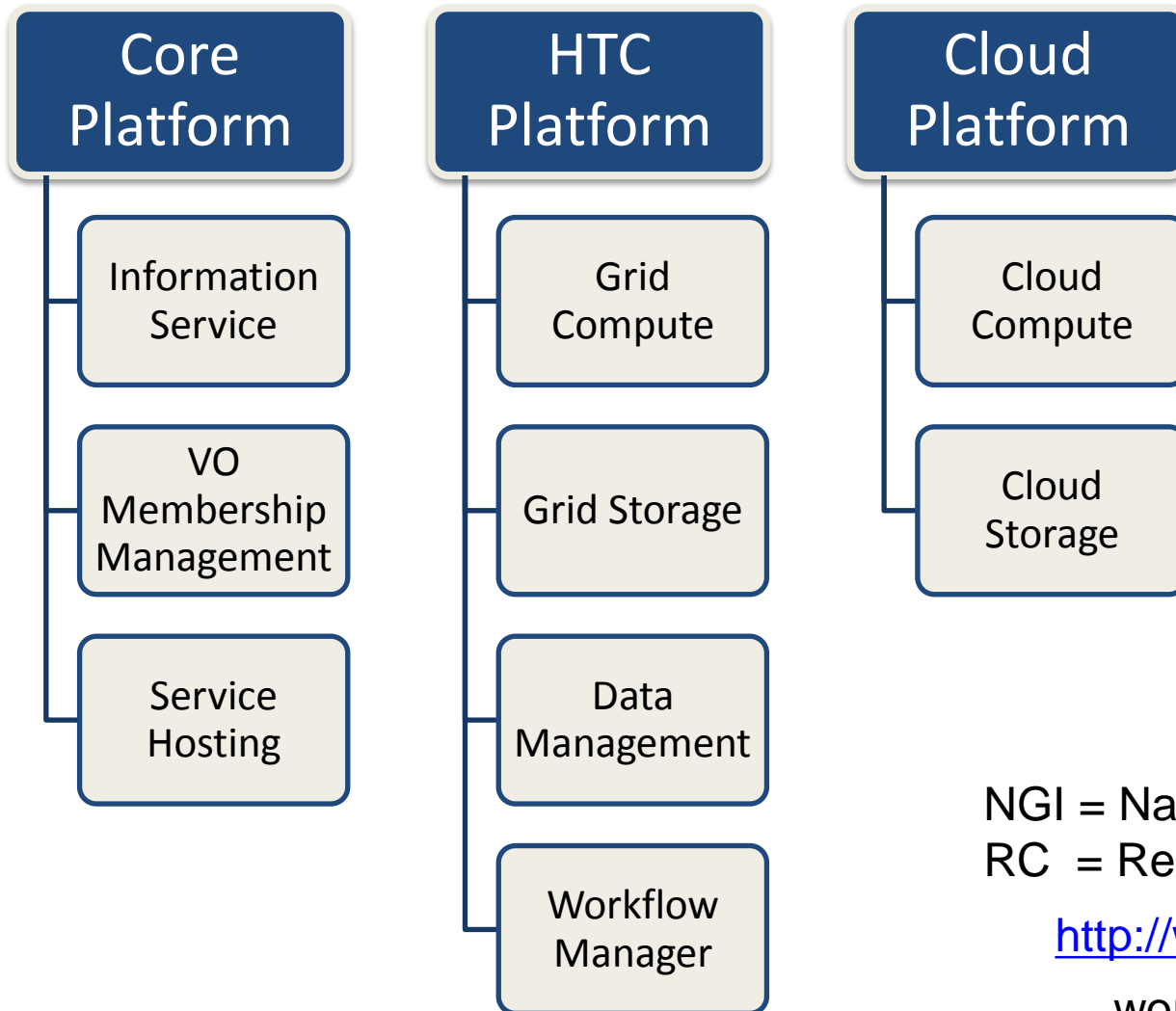
Peer Resource Providers

EGI Solutions Portfolio





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



NGI = National Grid Infrastructure
 RC = Resource Centre

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

work in progress

ERA needs an open ecosystem of VREs & services

EGI Collaboration Platform

"Tools & Services enabling cross-community collaboration"

**Virtualised
Community
Platform (VRE)**

**Hybrid
Community
Platform (VRE)**

**Integrated
Community
Platform
(VRE)**

**EGI Cloud Infrastructure
Platform**

"A federated IaaS Cloud infrastructure"

EGI Core Infrastructure Platform

"Operational services necessary for the management of federated DCDIs"

Thank you!



Questions?

BACKUP

Decade-long legacy

2001 – 2004

EDG



From 2010

EGI



2004 – 2010

EGEE I – III



From Homogeneity ...

- EDG & EGEE were homogenous projects
 - Resources, Software & Users
- EGEE served the “Heavy User Communities”
 - High-energy Physics / WLCG
 - Astrophysics
 - Earth Sciences
 - Life Sciences
- ... with one Grid middleware.





20k researchers

Few related use cases



2M researchers!



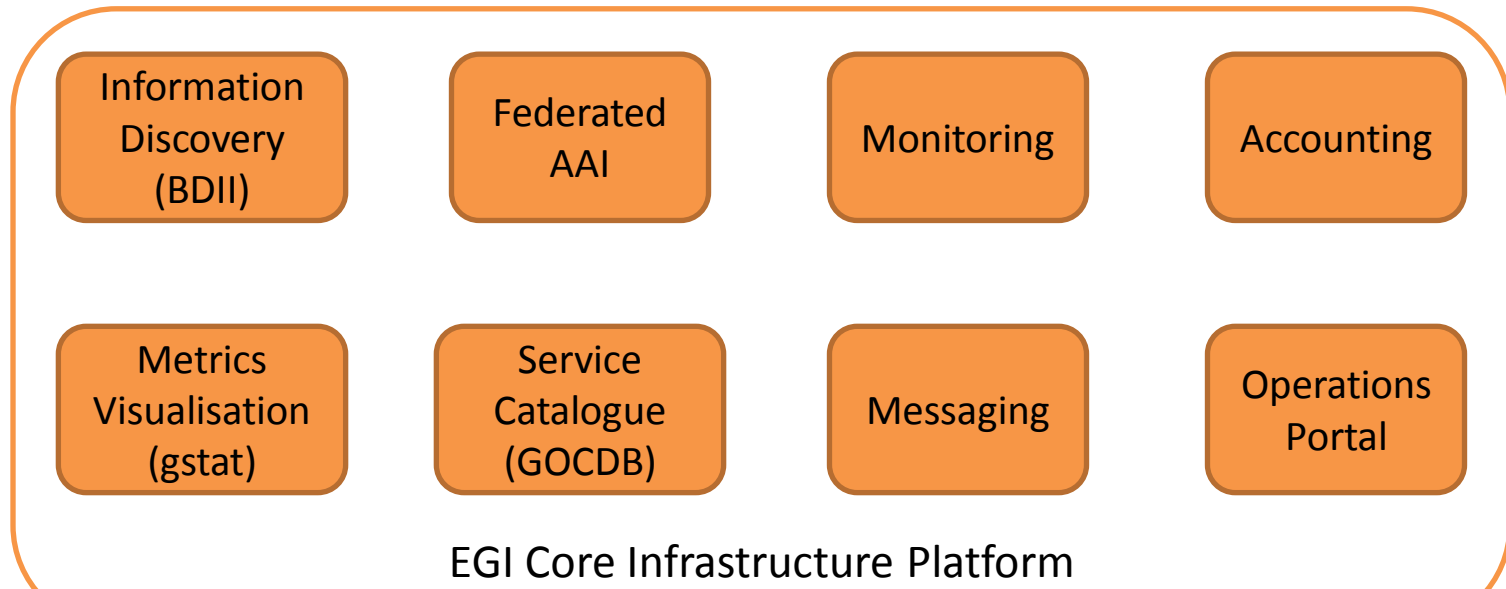
Many diverse use cases



OpenNebula.c
The Open Source Toolkit for Cloud C



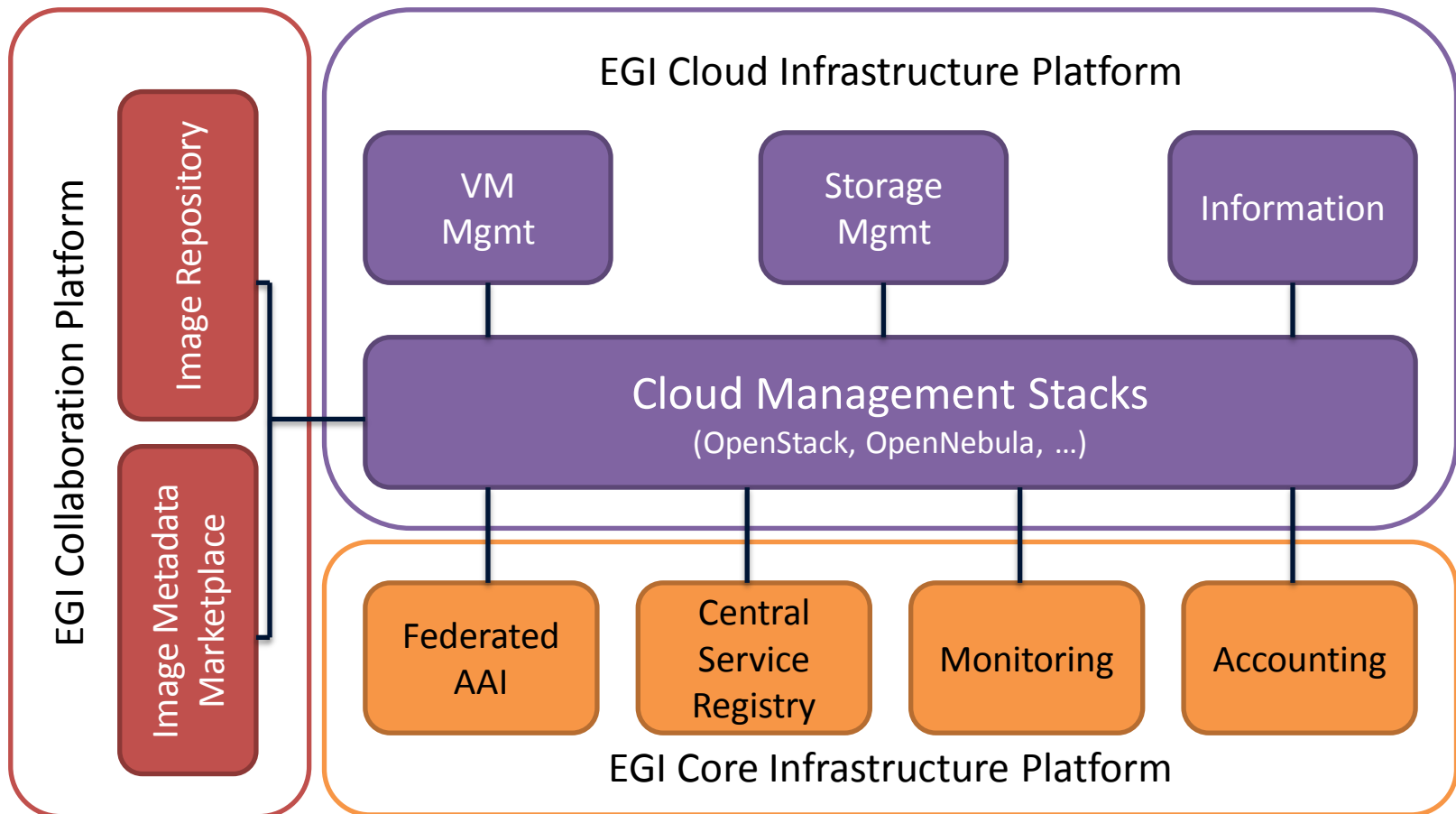
The services that federate and integrate the functional services deployed in the **production infrastructure**



EGI Core Infrastructure Platform

For e-Infrastructures, Research Infrastructures & Community Platforms

Enable an open ecosystem of services



EGI Core Infrastructure

Service Availability
SAM

Configuration DB
GOCDB

Accounting
APEL

External Services

Certification Authorities

ID Management Federations

AAI

VOMS Proxy

User Interfaces

OCCI Clients
rOCCI; WNoDeS-CLI
SlipStream, VMDIRAC,
CompatibleOne

CDMI Clients
Libcdmi-java

Resource Providers

VOMS proxy

OCCI server

CDMI server

OpenNebula
OpenStack
StratusLab
WNoDeS
Syneffo,
others

Marketplace client

SSM

Vmcatcher
Vmcaster

LDAP

Image Metadata
Marketplace

Appliance Repository

Information System
Top-DBII

Monitoring
Nagios +
community probes

VO
PERUN server