



Enabling Grids for E-scienceE

EGEE business opportunities

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www.eu-egee.org



- **EGEE**

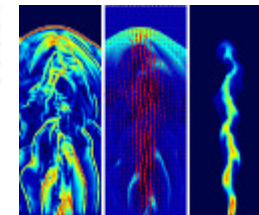
- 1 April 2004 – 31 March 2006
- 71 partners in 27 countries, federated in regional Grids

- **EGEE-II**

- 1 April 2006 – 31 March 2008
- 91 partners in 32 countries
- 13 Federations

- **Objectives**

- Large-scale, production-quality infrastructure for e-Science
- Attracting new resources and users from industry as well as science
- Improving and maintaining “gLite” Grid middleware



- **Infrastructure operation**

- Currently includes >200 sites across 39 countries
- Continuous monitoring of grid services & automated site configuration/management

http://gridportal.hep.ph.ic.ac.uk/rtm/launch_frame.html



- **Middleware**

- Production quality middleware distributed under business friendly open source licence



- **User Support - *Managed process from first contact through to production usage***

- Training
- Expertise in grid-enabling applications
- Online helpdesk
- Networking events (User Forum, Conferences etc.)

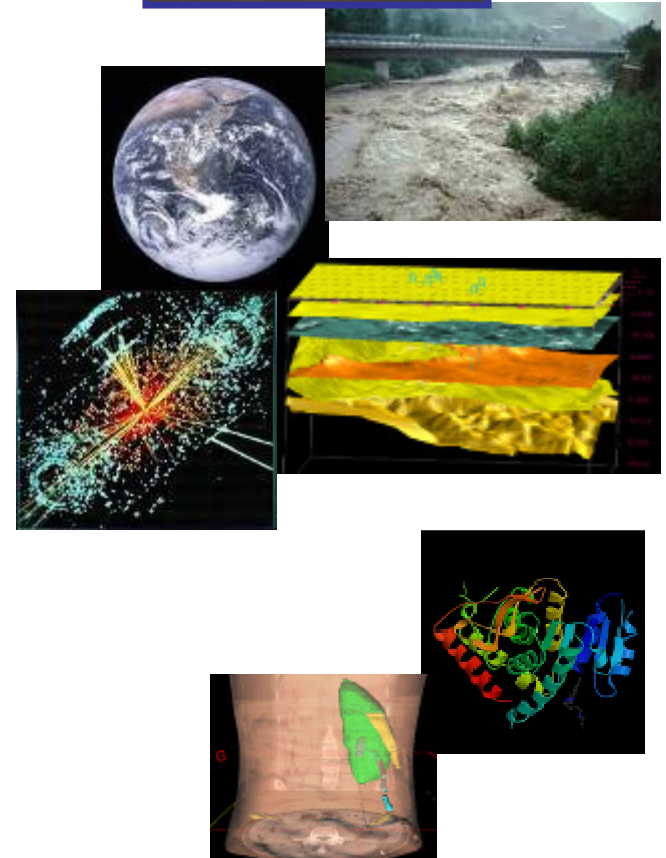


- **Interoperability**

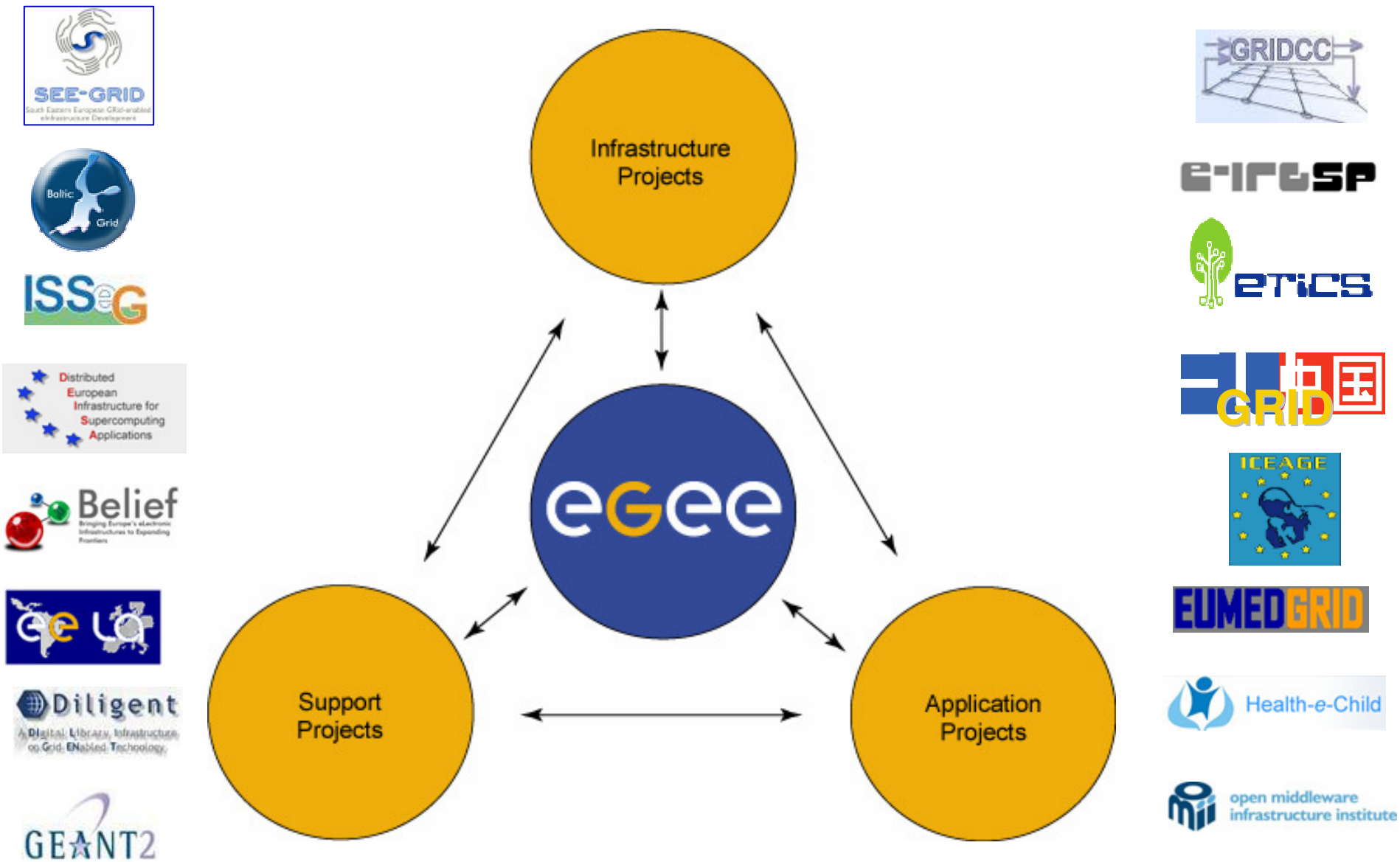
- Expanding geographical reach and interoperability with related infrastructures



- **More than 25 applications from 9 domains**
 - Astrophysics
 - Computational Chemistry
 - Earth Sciences
 - Financial Simulation
 - Fusion
 - Geophysics
 - High Energy Physics
 - Life Sciences
 - Multimedia
 - Material Sciences
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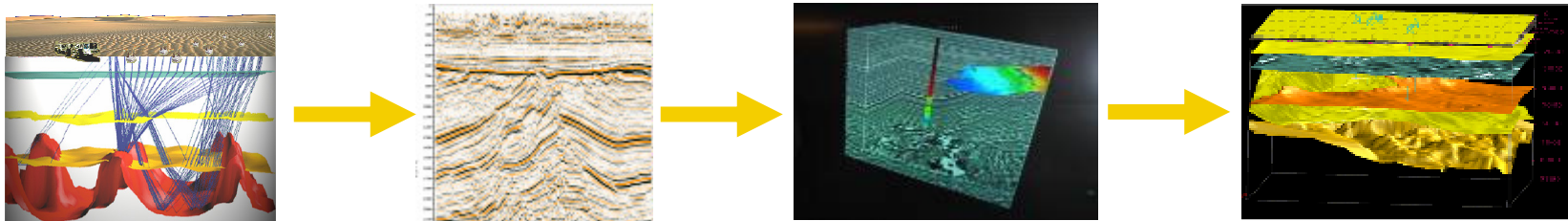


Book of abstracts: <http://doc.cern.ch//archive/electronic/egee/tr/egee-tr-2006-005.pdf>



- **EGEODE**

- Business application from Compagnie Generale de Geophysique running on EGEE infrastructure
 - Seismic processing platform
 - Based on industrial application Geocluster© used at CGG
 - Being ported to EGEE for Industry and Academia



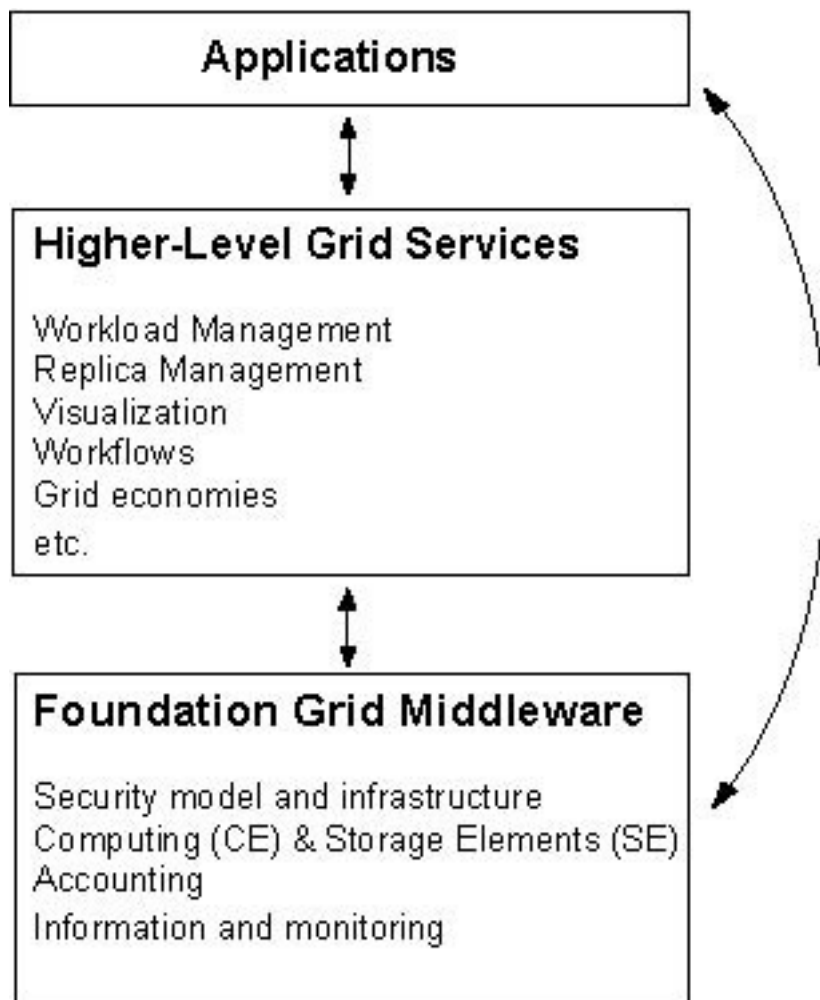
- **OpenPlast project**

- French R&D programme to develop and deploy Grid platform for plastic industry (SMEs)
- Based on experience from EGEE (supported by CS)
- Next: Interoperability with other Grids



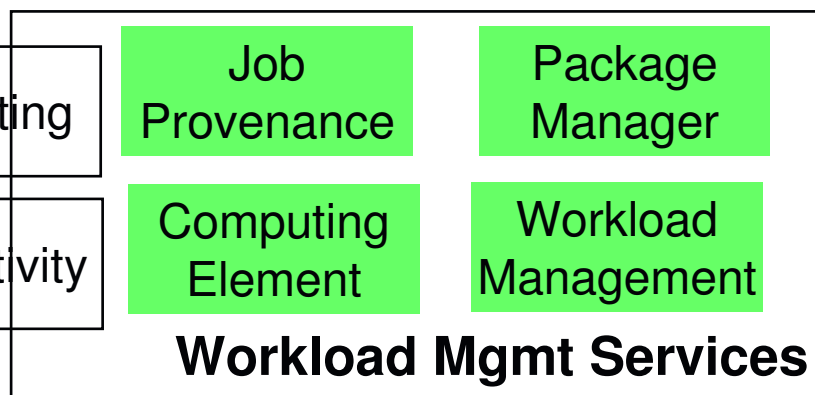
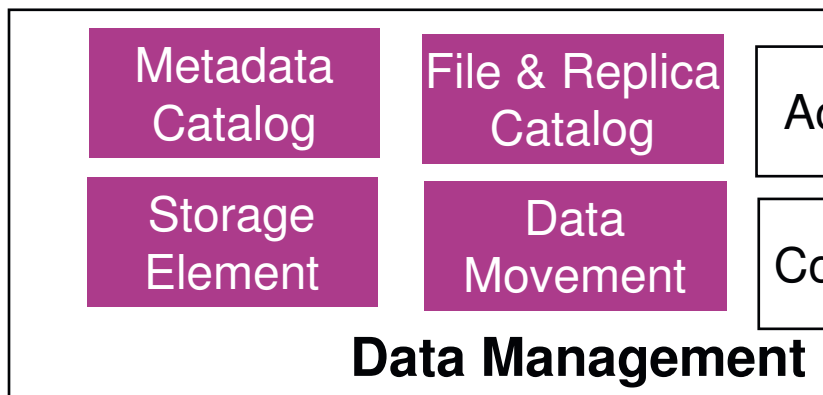
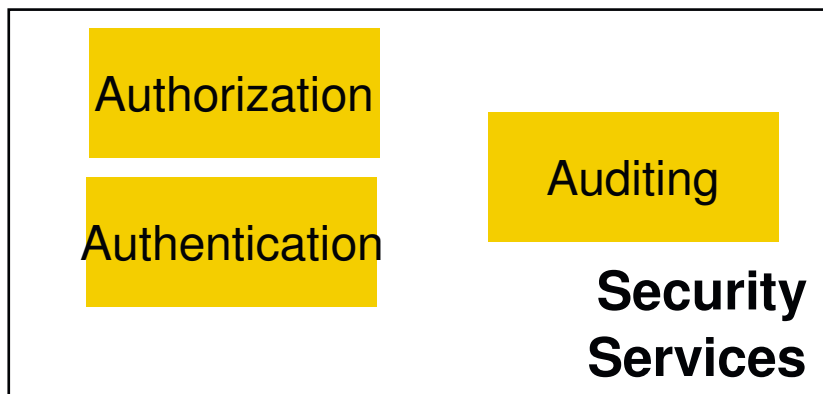
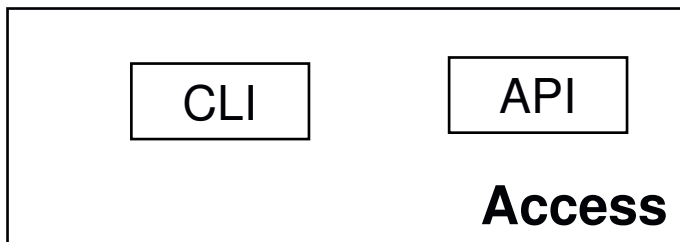
- gLite
 - Exploit **experience and existing components** from VDT (Condor, Globus), EDG/LCG, AliEn, and others
 - Develop a **lightweight stack of generic middleware** useful to EGEE applications (HEP and Biomedics are pilot applications).
 - Pluggable components – cater for different implementations
 - Follow SOA approach, WS-I compliant where possible
 - Focus is on **re-engineering and hardening**
 - Industry friendly **open source license**
 - Plan to switch to Apache-2





- **Higher-Level Grid Services may or may not be used by the applications**
 - should help them but not be mandatory

- **Foundation Grid Middleware is deployed on the infrastructure**
 - should not assume the use of Higher-Level Grid Services
 - must be complete and robust
 - should allow interoperation with other major grid infrastructures



Overview paper <http://doc.cern.ch/archive/electronic/egEE/tr/egEE-tr-2006-001.pdf>

- **In EGEE → Business participation in a variety of roles**
 - As a contracting **project partner** (such as **CS SI, Datamat**)
 - Shape development of cutting edge technology
 - Competitive advantage as technology commercialises
 - As a **user** (such as **CGG, CNES, openplast**)
 - Use EGEE Grid for R&D, learn how to deploy internal Grid with EGEE support and technology
 - As a **resource provider** (such as **HP**)
 - HP provide three Grid sites to EGEE Grid to gain experience as Grid Service Provider
 - As **affiliate** (through **Industry Forum, Business Associates**)
 - EGEE Industry Forum. More than 300 members from 150 organisations → stay up to date with Grid technology, give requirements
 - EGEE Business Associate. Framework for active research collaboration with EGEE
 - Relations via CERN Openlab project



→ Opportunities for involvement on many levels

Business Experiments in Grid (BEinGRID) <http://www.beingrid.com/>

- There are 3 experiments based on **gLite** middleware



– Financial Portfolio Management (Financial sector)

- INNOVA, FINNAT, MPSF, SPACI, UNICAL



– Insurance Risk management (Insurance sector)

- AXA, FININFO, CRSA, TID



– Seismic imaging & reservoir simulation (Industry sector focused in Oil & Gas)

- CGG, PETROSOFT, NICE, TNO

– Others under consideration (Earth Observation services) and migration of certain tools and components

- **Regular exchange between EGEE and BEinGRID**

– EGEE partners to support gLite use in BEinGRID (private infrastructure)

– BEinGRID to evaluate gLite for commercial contexts

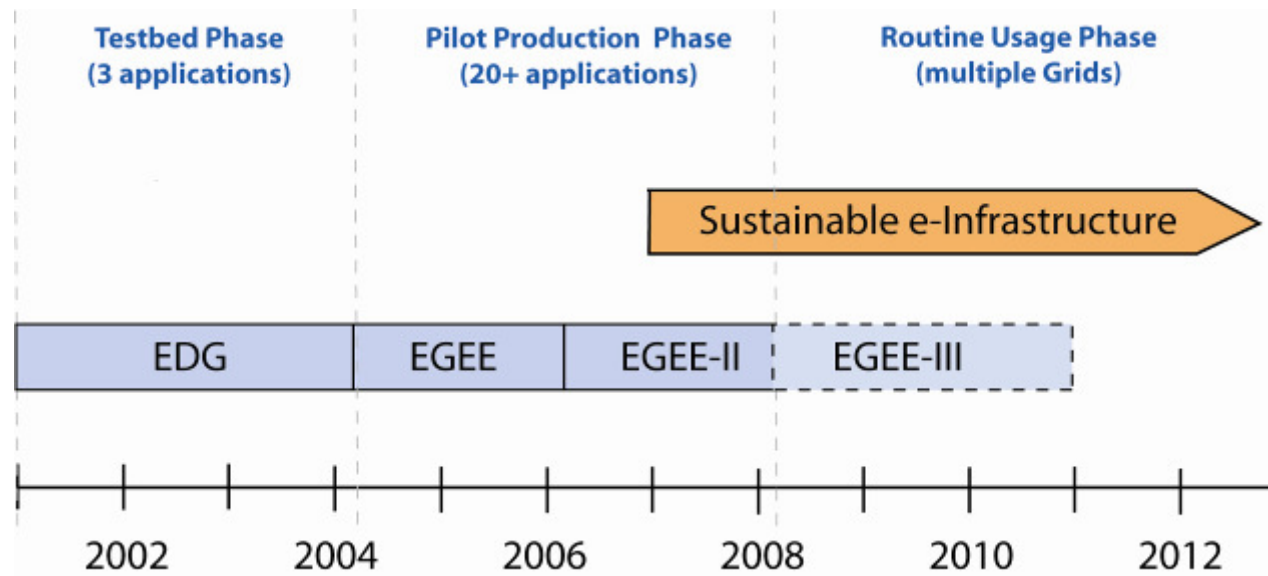
– Training courses focussed for industry users



Credit: Josep Martrat - ATOS ORIGIN

- **Trust** - Not use to sharing resources
- **Security & Privacy** - Sensitive data with sensitive applications
- **Business models** – what can be charged for as a service
- **Guaranteed QoS** – Service Level Agreements
- **Accounting** - tracking resources usage in multi-admin context
- **Standards** – to encourage long-term investment
- **Applications** – need to support legacy applications
- **Portability** – across multiple platforms and implementations
- **Open source support** – robust reference implementation
- **Software license management** – how to generate revenue in a grid context
- **Industrial training facilities** – similar to EGEE's training platform GILDA
- **Grid Service Providers** – to provide professional support
- **Long term availability** – EU funding cycles are very short

- **Need to prepare for permanent Grid infrastructure**
 - Maintain Europe’s leading position in global science Grids
 - Ensure a reliable and adaptive support for all sciences
 - Independent of short project funding cycles
 - Modelled on success of GÉANT
 - Infrastructure managed in collaboration with national grid initiatives



- **EGEE'06 – Capitalising on e-infrastructures**
 - Keynotes on state-of-the-art and real-world use
 - Dedicated business track
 - Demos and business/industry exhibition
 - Involvement of international community
- **25-29 September 2006**
- **Geneva, Switzerland**
- **<http://www.eu-egee.org/egee06>**

Welcome to the key European Grid event of 2006!