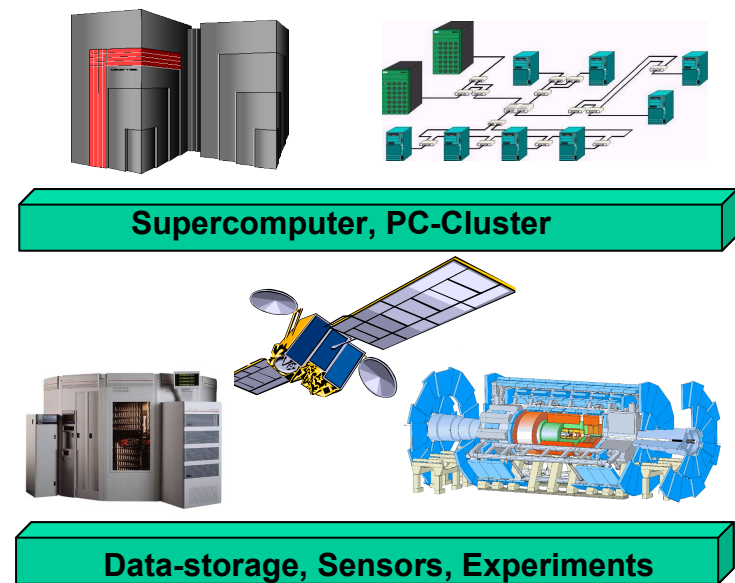
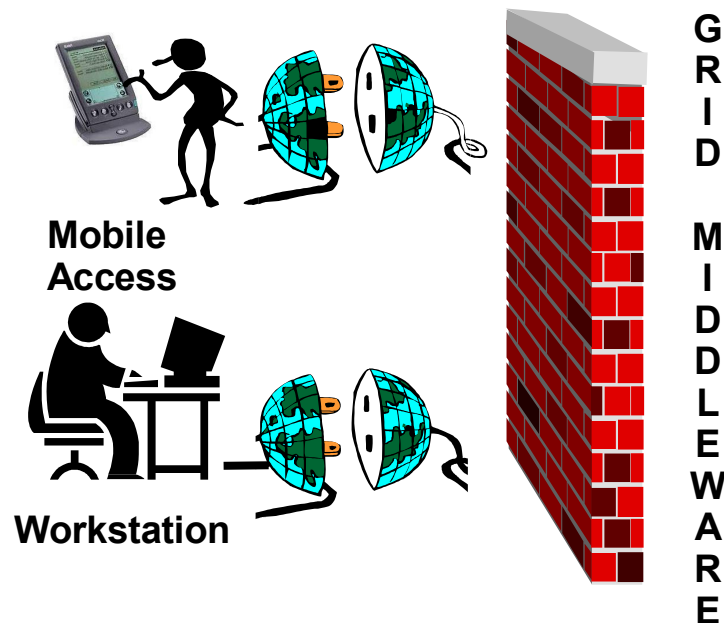


ENEA and the EGEE project gLite and interoperability

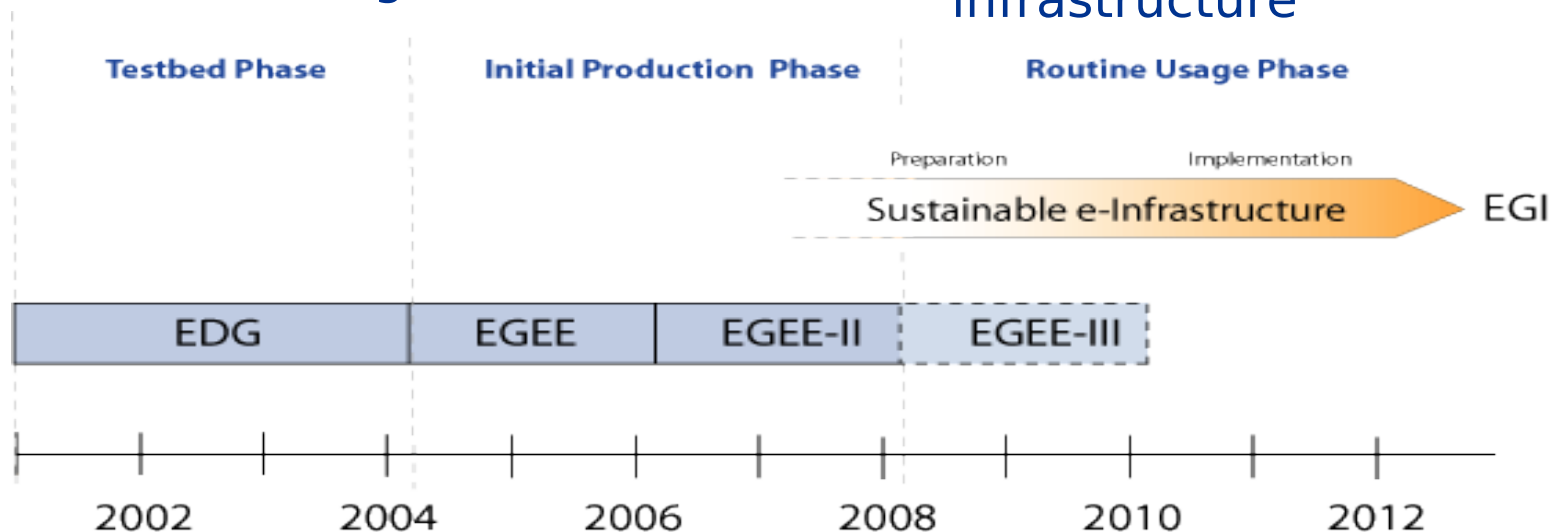
Andrea Santoro, Carlo Sciò
Enea

Frascati, 22 November 2007

- The **EGEE** project has a main goal of providing researchers with access to a geographically distributed computing Grid infrastructure, available 24 hours a day.
- It focuses on maintaining and developing the **gLite middleware** and on operating a large computing infrastructure.



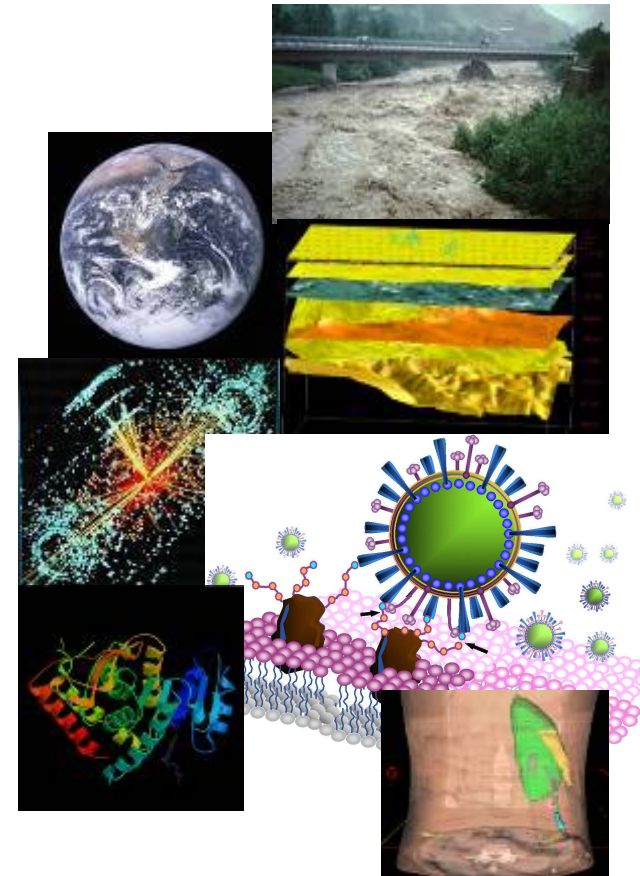
- **ENEA** has implemented an EGEE site as a funded partner in the project. ENEA-Grid project starts in 1999.
- **EGEE**
 - 1 April 2004 – 31 March 2006
 - 71 partners in 27 countries, federated in regional Grids
- **EGEE-II**
 - 1 April 2006 – 30 April 2008
 - 91 partners in 32 countries
- **EGEE-III**
 - From 1 May 2008
 - Need to prepare for permanent Grid infrastructure

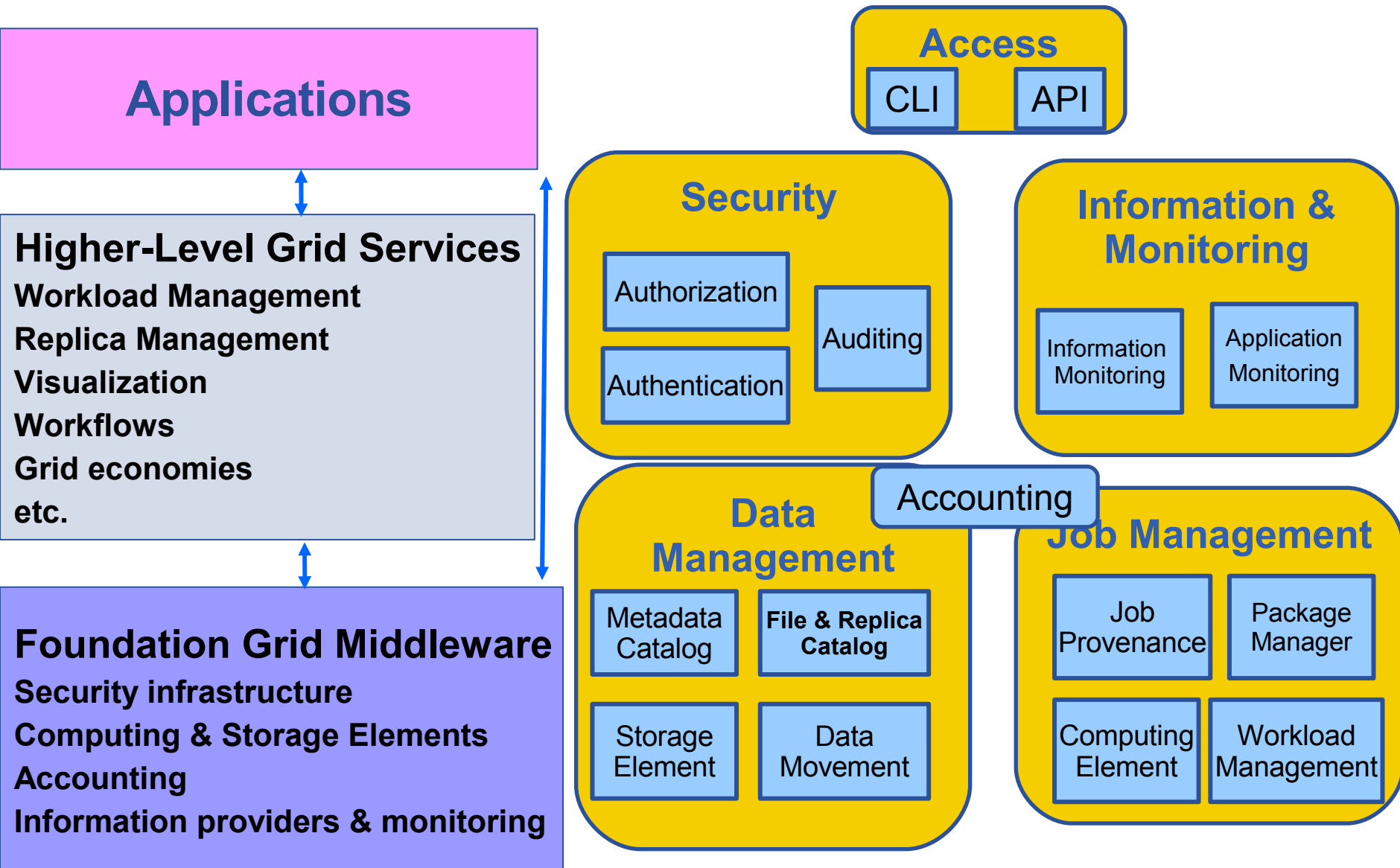


- Multitude of applications from a growing number of domains
 - Astrophysics
 - Computational Chemistry
 - Earth Sciences
 - Financial Simulation
 - Fusion
 - Geophysics
 - High Energy Physics
 - Life Sciences
 - Multimedia
 - Material Sciences

EGEE today: (ref: EGEE'07 conference)

- **240** sites **45** countries
- **41.000** processors **>10.000** users
- **5** PB storage **>150** VOs
- **>100K** jobs/day







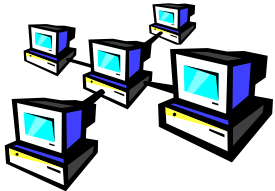
User Interface (UI): The place where users logon to the Grid



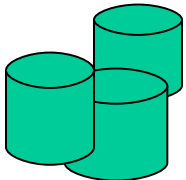
Resource Broker (RB): Matches the user requirements with the available resources on the Grid



Information System: Characteristics and status of CE and SE (Uses “GLUE schema”)



Computing Element (CE): A batch queue on a site's computers where the user's job is executed



Storage Element (SE): provides (large-scale) storage for files

User Interface

List resources suitable to execute a given job;
submit and cancel jobs for execution;
retrieve the output of jobs
copy, replicate and delete files from the Grid.

Storage Element

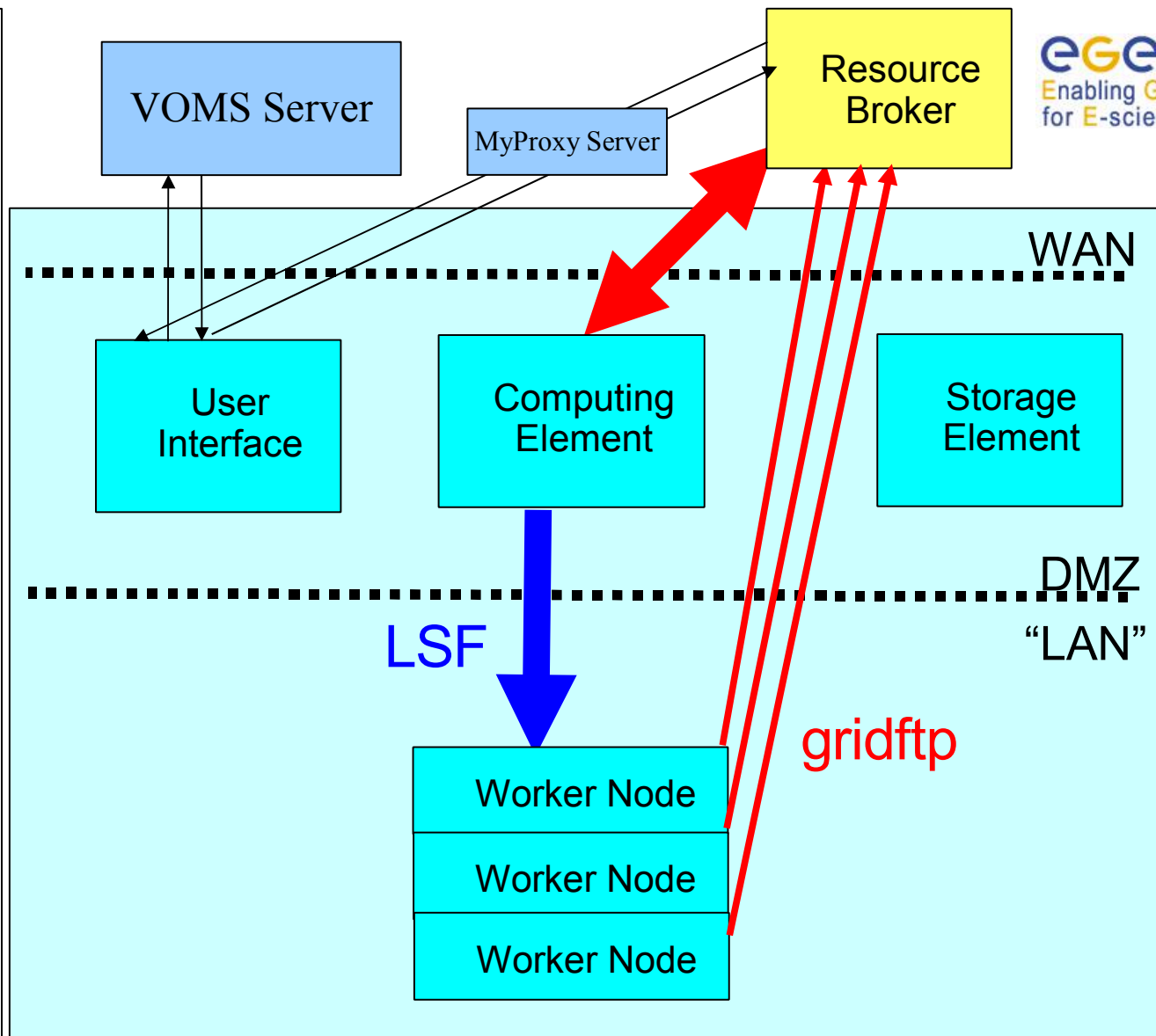
Provides uniform access to data storage resources;
can support different data access protocols and interfaces.

Computing Element:

includes a Grid Gate and a batch system.
Accepts jobs sent by the RB and submits them to the worker nodes (LSF)

Worker Nodes:

perform the computation and sends back job results to RB



Within the EGEE project, Enea has focused its effort in providing access to not standard platforms (as AIX), aiming to guarantee interoperability between EGEE infrastructure and ENEA-GRID.

Issues:

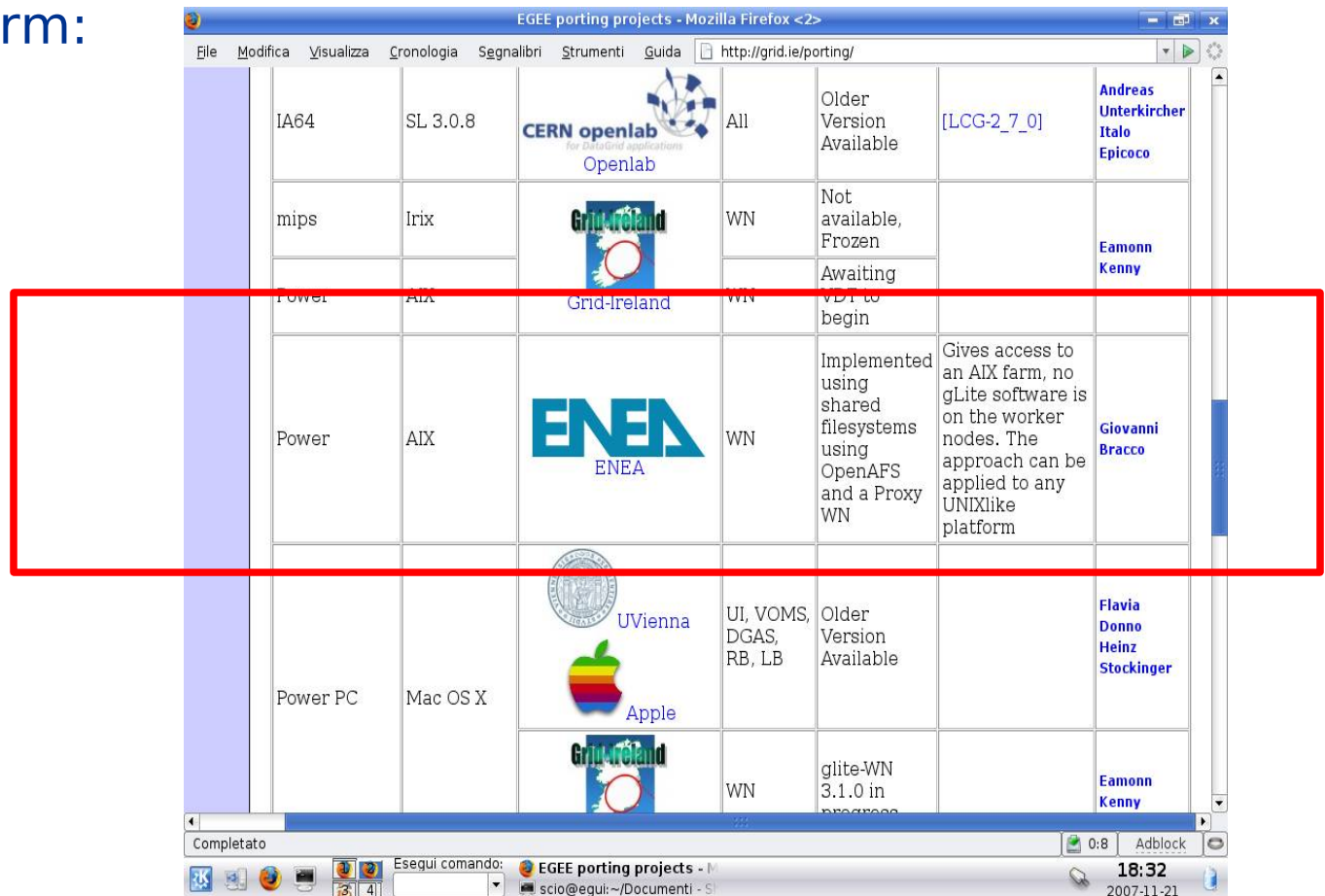
- non-existence of gLite middle-ware for platform different from linux (Scientific Linux only!)
- avoid the invasiveness of gLite middle-ware in WNs
- conversion of different authentication protocols (X.509 vs kerberos tickets/ AFS tokens)

Solution:

A new approach [SPAGO – Shared Proxy Approach for Grid Objects] has been developed by ENEA to solve the first two issues.

The authentication interoperability has been implemented with support of Ludovico Gianmarino (CASPUR) who has extended the gssklog service for compatibility with gLite middleware.

On the EGEE site dedicated to the porting of gLite middle-ware to non standard platforms [<http://grid.ie/porting>] the ENEA solution is indicated as the only working solution at this moment for AIX platform:



Platform	Architecture	Logo	Status	Notes	Contact
IA64	SL 3.0.8		All	Older Version Available	Andreas Unterkircher Italo Epicoco
mips	Irix		WN	Not available, Frozen	Eamonn Kenny
Power	AIX		WN	Awaiting VBT to begin	
Power	AIX		WN	Implemented using shared filesystems using OpenAFS and a Proxy WN	Giovanni Bracco
Power PC	Mac OS X	 	UI, VOMS, DGAS, RB, LB	Older Version Available	Flavia Donno Heinz Stockinger
			WN	glite-WN 3.1.0 in progress	Eamonn Kenny