

*EFDA Remote Participation Workshop*

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# GRID Activities in ENEA-INFO

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## Outline

- ENEA-GRID Infrastructure
- INFO-ENEA GRID Projects
  - EGEE Project
  - GRID activity in collaboration with Fusion

# ENEA - Ente per le Nuove Tecnologie l'Energia e L'Ambiente

Italian Agency for New Technologies, Energy and Environment.

11 research centers in Italy

A Central Computer and Network Service (INFO)

INFO Scientific Computing Service

- **5 Computer Centers:** Casaccia, Frascati, Bologna, Trisaia, Portici
- **Multiplatform resources** for serial & parallel computation and graphical post-processing.

Others computer resources in ENEA:

- Departments (e.g. Fusion)
- Individuals



# ENEA GRID

ENEA computational resources (AIX, Linux, Irix, Solaris) are distributed over WAN, connected by GARR, the Italian Academic & Research Network (GARR-ENEA 4-20 Mbps).

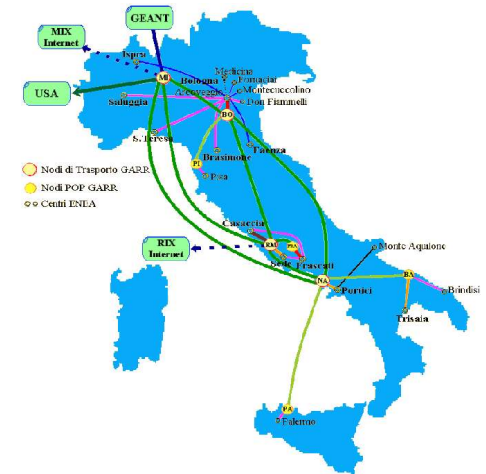
**ENEA-GRID** provides an integrated access to the computational resources

- **ENEA GRID architecture**

- A Distributed File System: AFS
- A job and resources manager: LSF Multicluster
- A unified GUI access: Citrix Technologies

- **Integration with departemental and individual resources**

- Distributed File System: AFS
- Licence management



# ENEA GRID Projects

Support activity to the porting of numerical codes to ENEA GRID infrastructure. An example is the MCNP neutron transport code which can be relevant to fusion application.

- **ENEA-INFO participation to other GRID projects**

- EGEE project (started april 2004)
- DATAGRID project (completed 2004)

- **GRID project in collaboration with Fusion Department**

- Data Replication on WAN
- Storage Technology Tracking

# EGEE Project

EGEE (Enabling GRID for e-science in Europe) is a project in the 6<sup>th</sup> EU framework program, with the mission to deliver **production level GRID services** [[www.eu-egee.org](http://www.eu-egee.org)].

ENEA is one of the funded partners in the project, inside the Italian participation which is coordinated by INFN (High Energy Physics)

**ENEA target in EGEE project: demonstration of the interoperability between different GRID architecture**

EGEE project is starting (April 2004); a kick-off Meeting has been hold in Cork, April 2004.

ENEA will contribute to EGEE infrastructure and the infrastructure will be available to applications: plasma physics simulations can be a candidate.

# DATAGRID Project

EGEE can be considered as the continuation of the DATAGRID project (ended in April 2004).

ENEA has participated (unfunded) in DATAGRID project through the collaboration with ESA, ESRIN Laboratory in Frascati.

A **gateway** between DATAGRID infrastructure and ENEA-GRID has been set-up at ESRIN:

the gateway enabled the submission of jobs from DATAGRID to ENEA-GRID

The gateway has been tested running the analysis of the data from the GOME satellite (Ozone level) with some IDL codes which can be easily run in a multiplatform environment.

The gateway provided a limited integration between the different GRID environment: **EGEE should attain a full integration**