



Enabling Grids for  
E-science in Europe

[www.eu-egee.org](http://www.eu-egee.org)

*Grid School, Vico Equense, 19.07.2004*

# GENIUS and GILDA

**Roberto Barbera**  
University of Catania and INFN



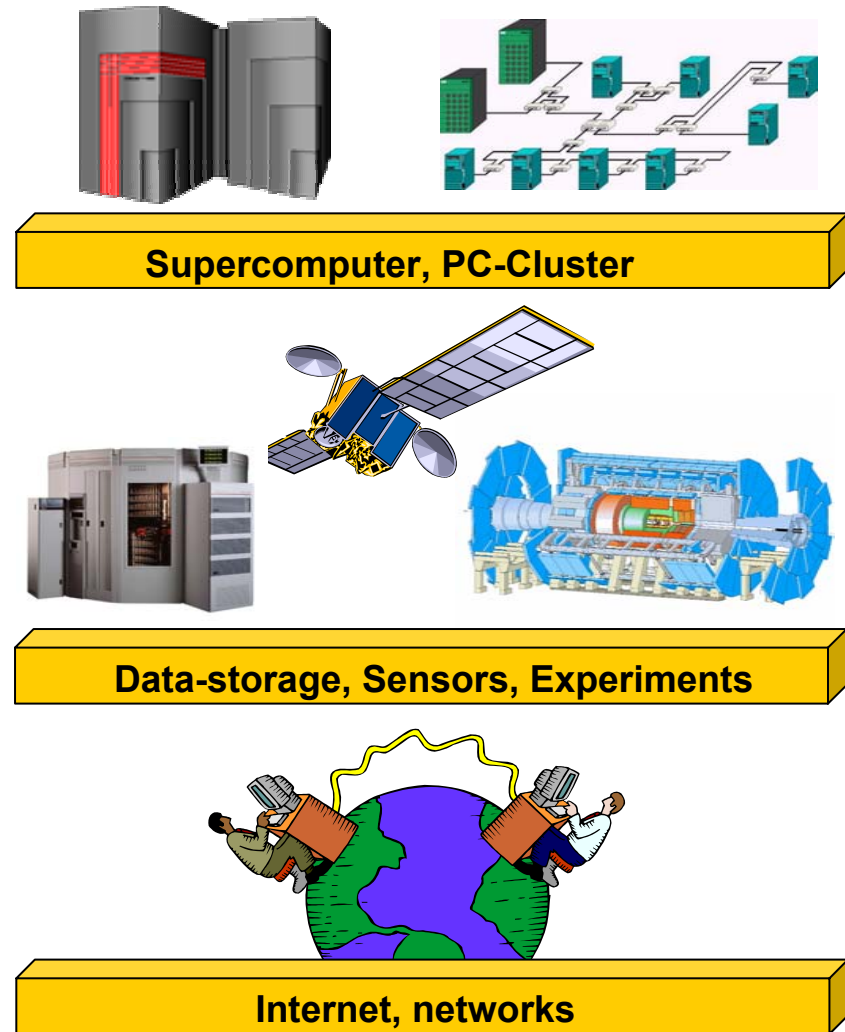
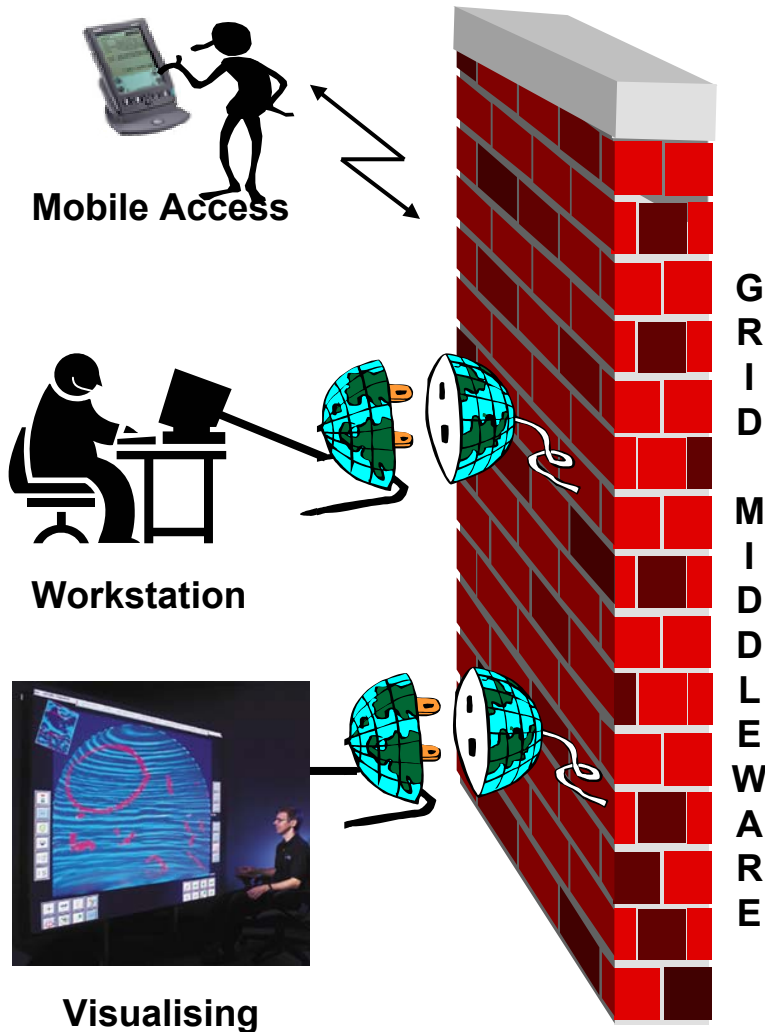
EGEE is a project funded by the European Union under contract IST-2003-508833

# Contents

- Introduction
- The GENIUS grid portal
- The GILDA Project



# The Grid metaphor

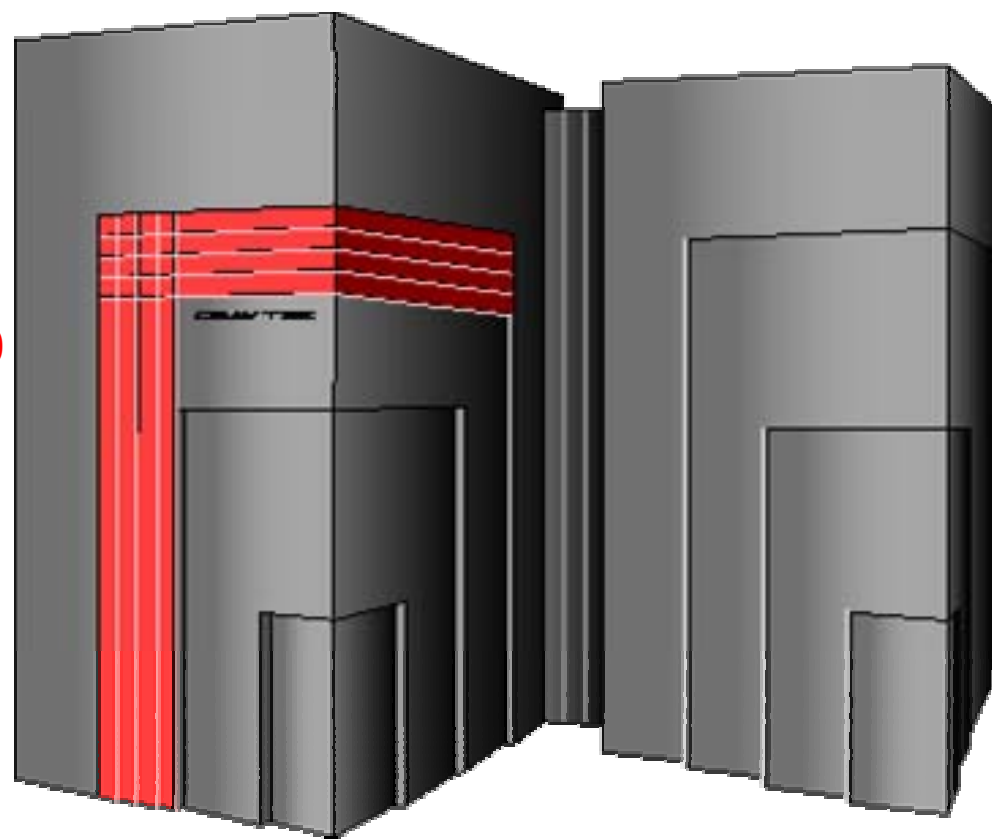


# The past , the present, ...

- CPU
- Memory
- Disk
- Input/Output

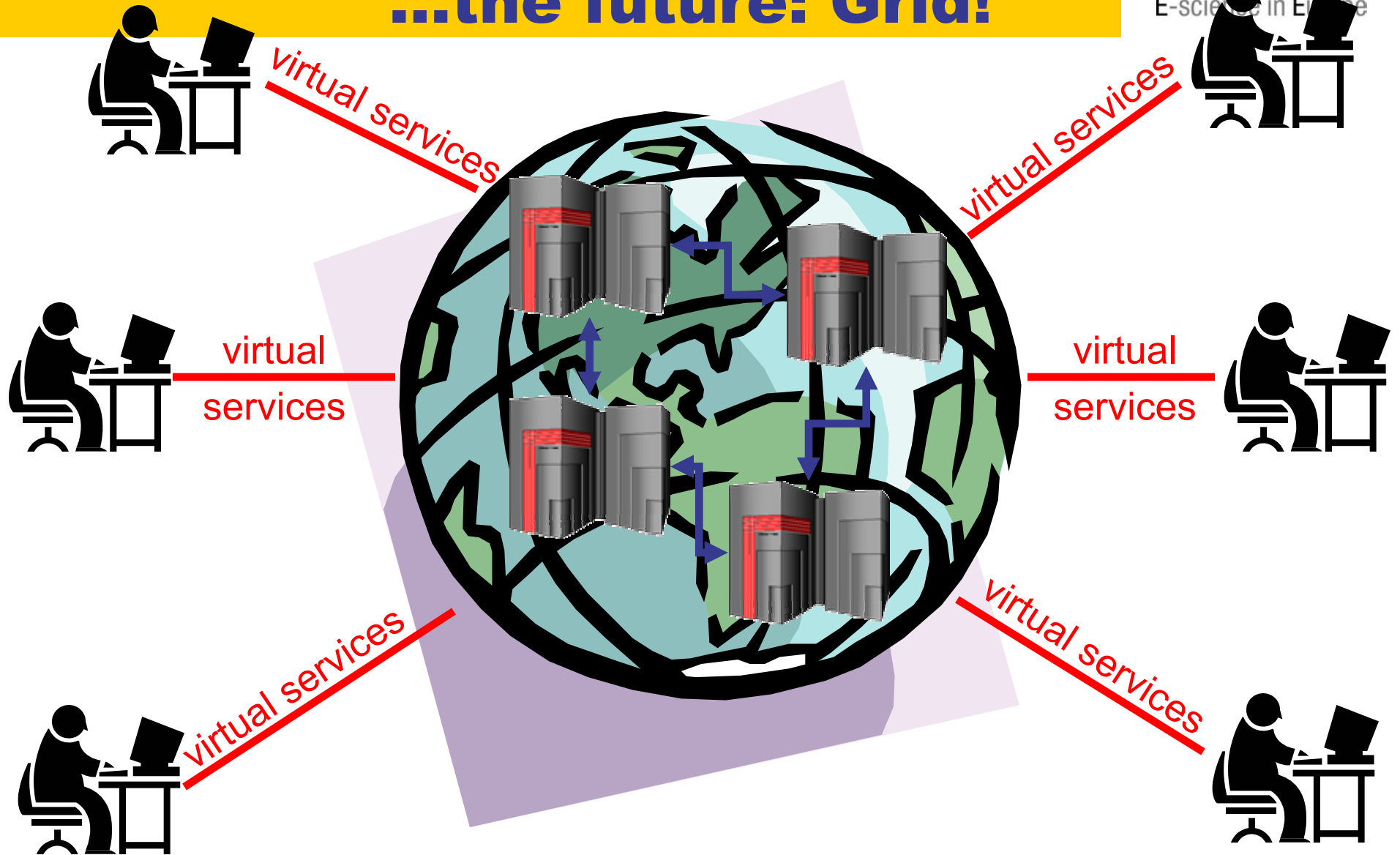


01011010110

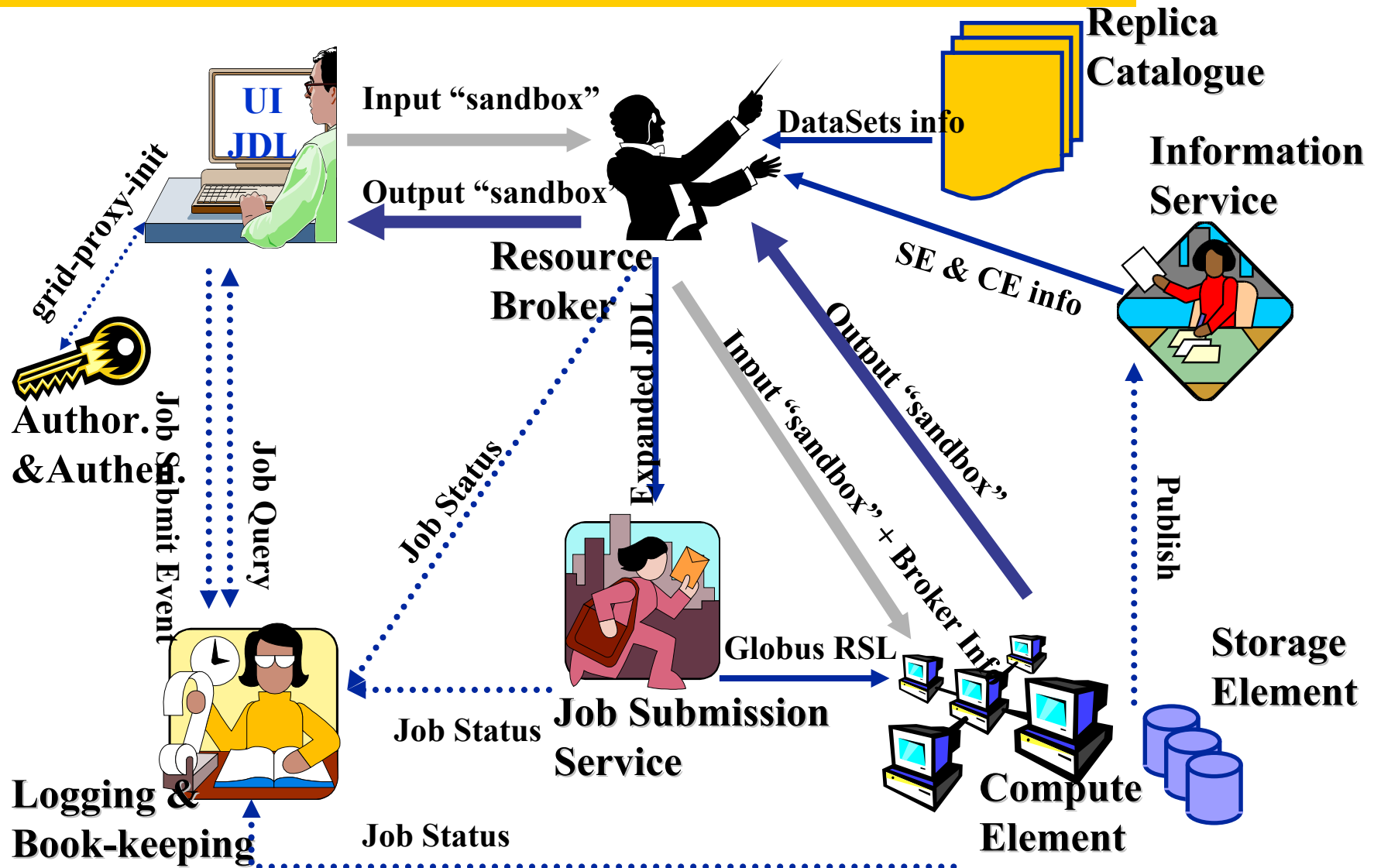




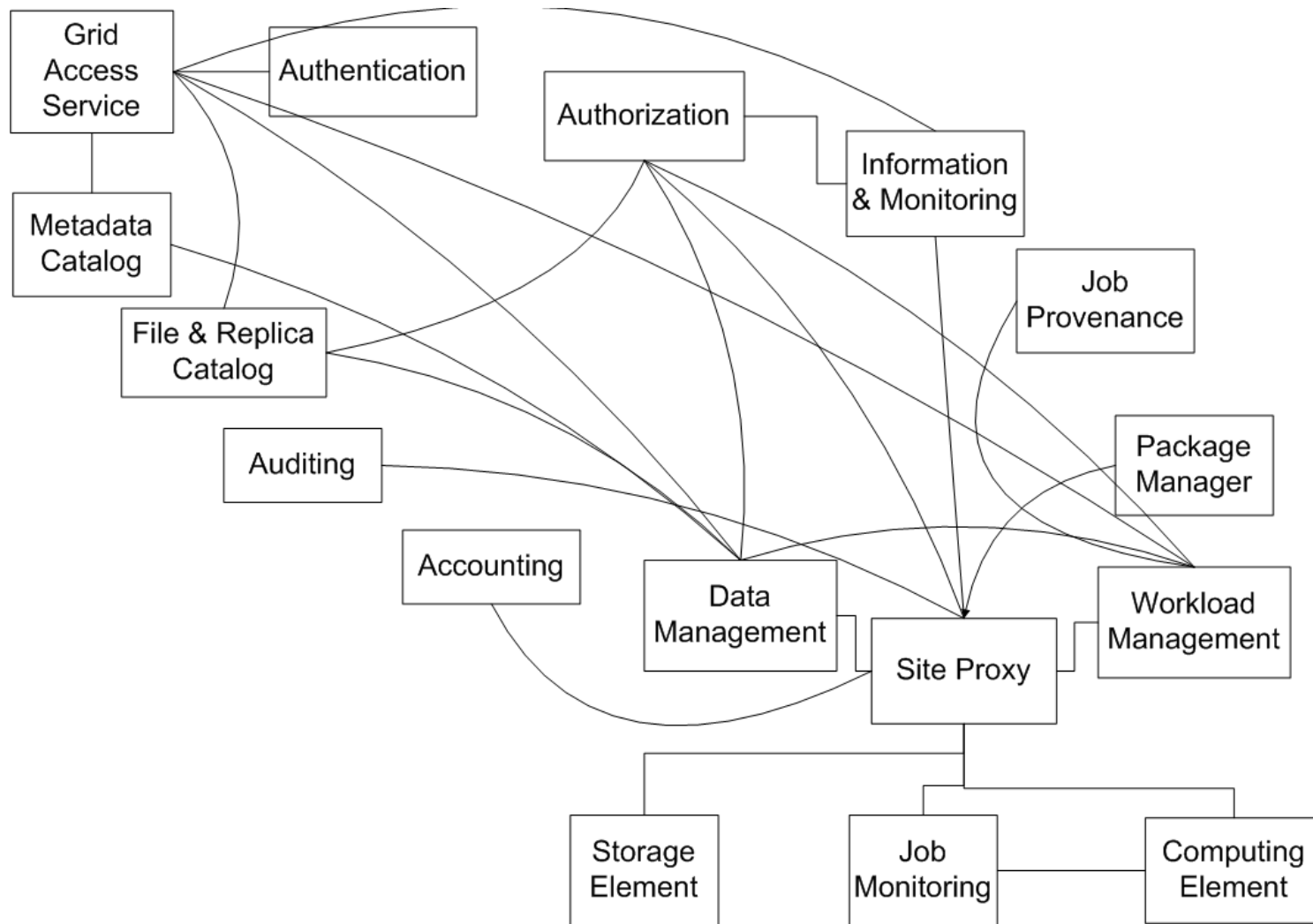
# ...the future: Grid!



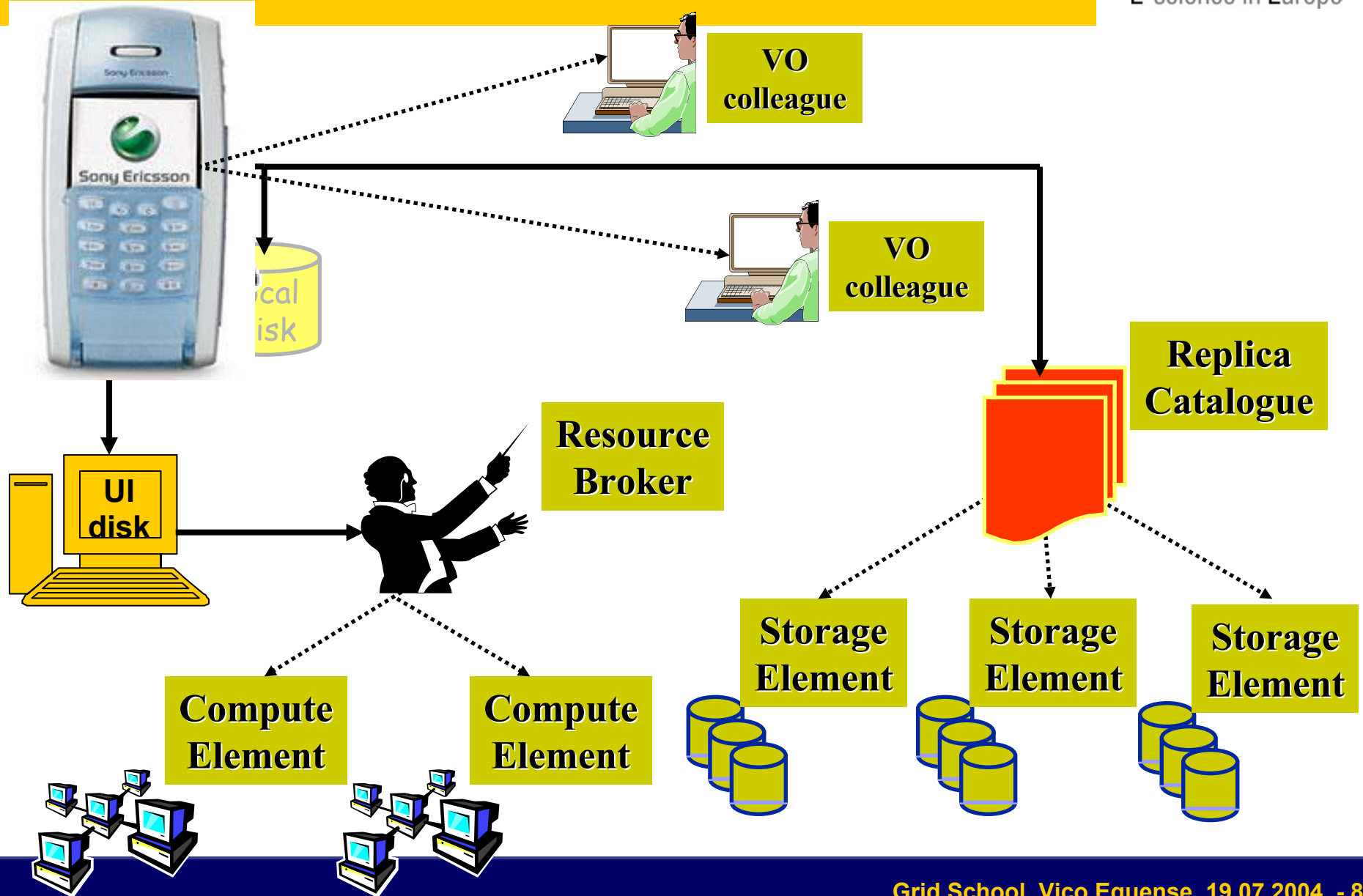
# A typical job workflow (DataGrid)



# Typical grid services (ARDA, gLite)



# The transparent grid access



## A grid portal: why and how

- It can be accessed from everywhere and by “everything” (desktop, laptop, PDA, cell phone).
- It can keep the same user interface to several back-ends.
- It must be redundantly “secure” at all levels: **1)** secure for web transactions, **2)** secure for user credentials, **3)** secure for user authentication, **4)** secure at VO level.
- All available grid services must be incorporated in a logic way, just “one mouse click away”.
- Its layout must be easily understandable and user friendly.

# The GENIUS hourglass model

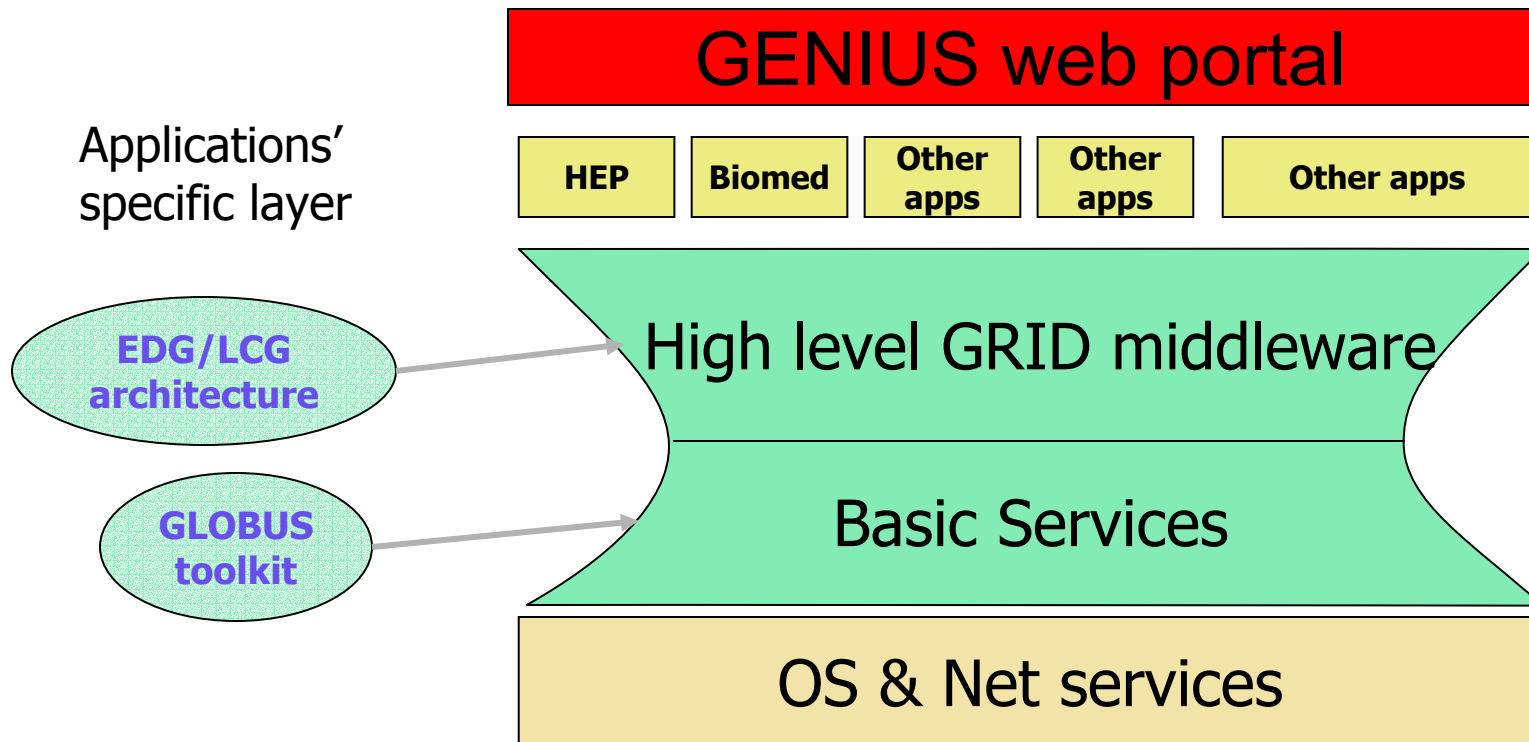


## GENIUS®

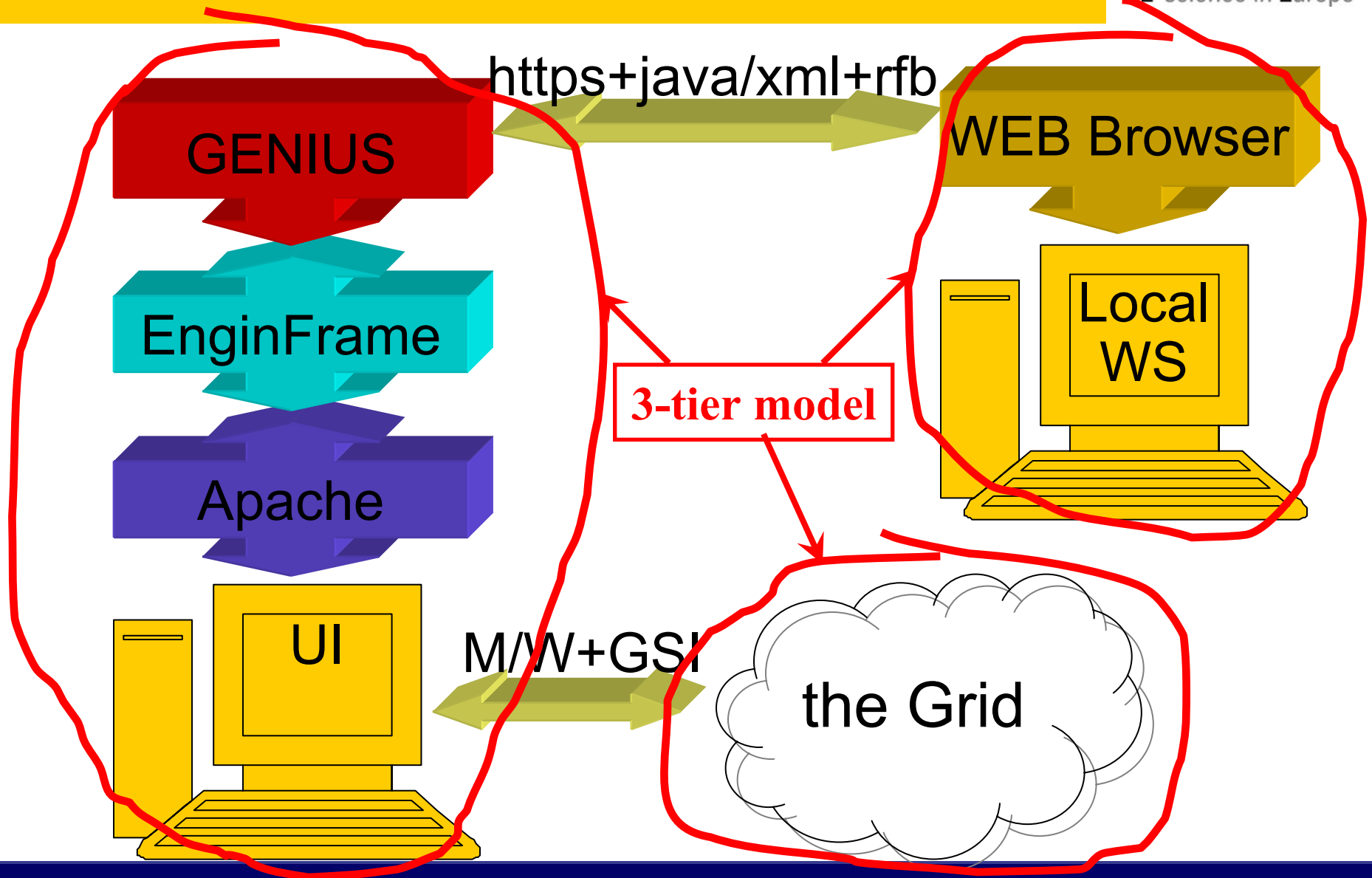
(Grid Enabled web eNvironment for  
site Independent User job Submission)

[<https://genius.ct.infn.it>]

## INFN/NICEsrl collaboration



# GENIUS: how it works





# GENIUS home page

(<https://genius.ct.infn.it> - <https://grid-tutor.ct.infn.it>)



Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://genius.ct.infn.it/ Search

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## Welcome to GENIUS 2.8.3

[Important Notice](#)  
[GENIUS User's Guide \(doc, pdf, ps, ps.gz\)](#)  
[New Grid Authentication with MyProxy](#)  
[GENIUS MyProxy Server Installation](#)  
[GENIUS CVS Available](#)  
[GENIUS Mailing List](#)  
[GENIUS Mailing Archive \(Help on Majordomo Commands\)](#)  
[GRID MOVIE](#)  
[Useful Links](#)  
[Credits](#)

This portal is best viewed with Mozilla 1.6.  
Netscape (4.79, 4.80, 6 and higher) and Internet  
Explorer (5 or higher) can also be used.  
The use of any other web browsers could induce some  
visualization mismatches and is not currently suggested.  
GENIUS is based on Apache 1.3.29 and OpenSSL 0.9.7c.  
Last update: **Fri 2 Apr 2004**

powered by  
[EnginFrame 3.2](#)  
compliant with  
[LCG-2](#)  
[GRID.IT](#)

# GENIUS file services

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Grid Enabled web eNvironment for site Independent User job Submission

RB: cnafr\_gridit VO: alice RLS: GRIDIT Your Data Logout

**View a File**

With this service you may view a file in your home directory.

Select File to View

**Remote File Browsing - Mozilla**

alice_rc_inf_nprodccom_mss.com	
alice_rc_mss.conf	414
alroot.jdl	1,644
alroot.jdl	1,136
authentication.log	294
csound.jdl	807
csound.orc	2,633
csound.sco	2,491
defcity.pov	1,951
dentools.jdl	1,158
dna.pov	4,731
edg_wl_ui_gui_log4j.log	0
edglog.log	1,050
file_09003.txt	14
golden_CO.dem	1,098,752
grand_canyon_AZ.dem	1,160,192
Path:/home/barbera	

Selected: alroot.jdl

powered by EnginFrame 3.2 compliant with LCG 2 GRID.IT

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Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

**View a File**

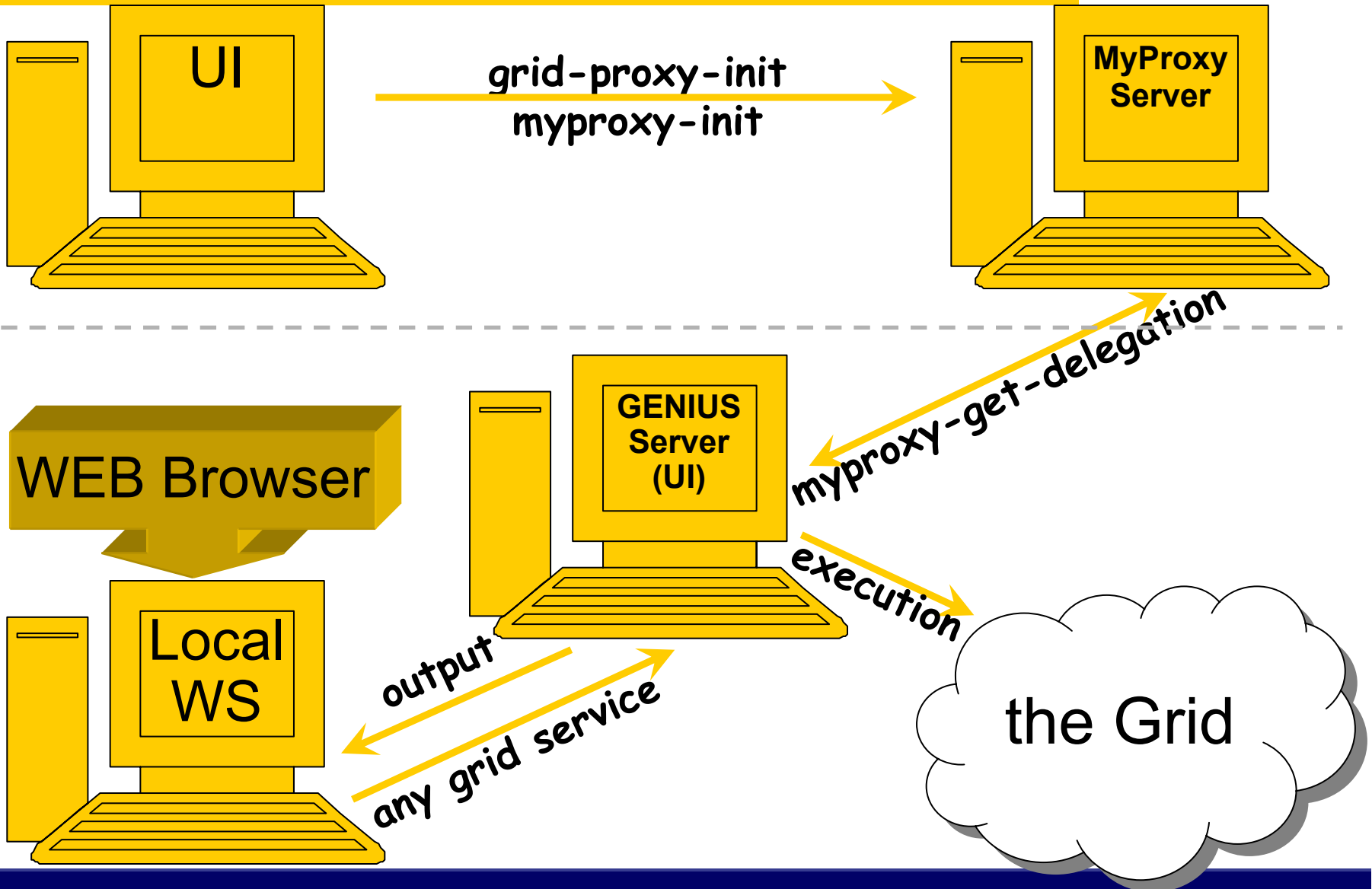
powered by EnginFrame 3.2 compliant with LCG 2 GRID.IT

```
#####
#####
## ----- Job Description for DENTTOOLS ----- ##
## author: roberto.barbera@ct.infn.it ##
## #####
#####
Type = "Job";
JobType = "Normal";
Executable = "/bin/sh";
MyProxyServer="ixshare0207.cern.ch";
StdOutput = "denttools.out";
StdError = "denttools.err";
InputSandbox = ("start_denttools.sh", "mount_sainte_helens_WA.dem", "grand_canyon_AZ.dem");
OutputSandbox = ("denttools.out", "denttools.err", "mount_sainte_helens_WA.ppm", "mount_sainte_helens_WA.w
RetryCount = 7;
Arguments = "start_denttools.sh";
Requirements = Member("DENTTOOLS-1.0", other.GlueHostApplicationSoftwareRunTimeEnvironment) || Member("E
```

# GENIUS authentication with MyProxy

The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://genius.ct.infn.it/". The page features logos for INFN (Istituto Nazionale di Fisica Nucleare), EnginFrame, and GENIUS. A navigation menu on the left lists services such as File Services, Security Services, Job Services, Data Services, Info Services, Monitoring Services, Interactive Services, Grid Settings, Set VO, Current VO Services, Statistics, and Logout. The main content area includes the text "Grid Enabled web eNvironment for site Independent User job Submission" and a "Login to the GRID" form with fields for Username (barbera), MyProxy Passphrase, and Validity (hours) (4), along with a Login button. The footer of the page mentions "powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT".

# Grid authentication with MyProxy



# GENIUS grid settings

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Grid Enabled web eNvironment for site Independent User job Submission

RB: cnaif\_gridit VO: alice RLS: GRIDIT Your Data Logout

### Grid Settings

With this service you can select the Resource Broker and the Replica Location Server you want to use.

It is possible also to set the MyProxy Server on which you stored your temporary proxy to get from GRID Authentication.

Resource Broker (RB):

Replica Location Server (RLS):

MyProxy Server:

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT

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RB: cnaif\_gridit VO: alice RLS: GRIDIT Your Data Logout

### Grid Settings

With this service you can select the Resource Broker and the Replica Location Server you want to use.

It is possible also to set the MyProxy Server on which you stored your temporary proxy to get from GRID Authentication.

Resource Broker (RB):

Replica Location Server (RLS):

MyProxy Server:

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT

BARCELONA LCG  
BUDAPEST LCG  
CERN-1 LCG  
CERN-2 LCG  
CNAIF LCG  
MOSCOW LCG  
RAL LCG  
TAIFEL LCG  
VALENCIA LCG  
FZK LCG

# GENIUS VO selection

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# GENIUS graphic job editor (work in collaboration with DATAMAT)

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### Job Editor

Job Name: /home/barbera/alroot.jdl

Job Type	Job Definition 1	Job Definition 2	Job Data	Requirements	Rank	Unknown
----------	------------------	------------------	----------	--------------	------	---------

Executable: /bin/sh  Remote  
Arguments: script-short.sh

**Standard Streams**

StdInput:   Remote  
StdOutput: alroot.out  Add to Output Sandbox  
StdError: alroot.err  Add to Output Sandbox

**Input Sandbox**

- grun\_3\_09\_06\_hbt.C
- Config\_HBT.C
- AllITSDigits2RecPoints.C
- AllITSTrackingV1.C
- AllITCEndClusterV2.C

**Output Sandbox**

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT

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### Job Editor

alroot.err  
alroot.out  
galice.root

Reset View

Apply Reset All View All Error

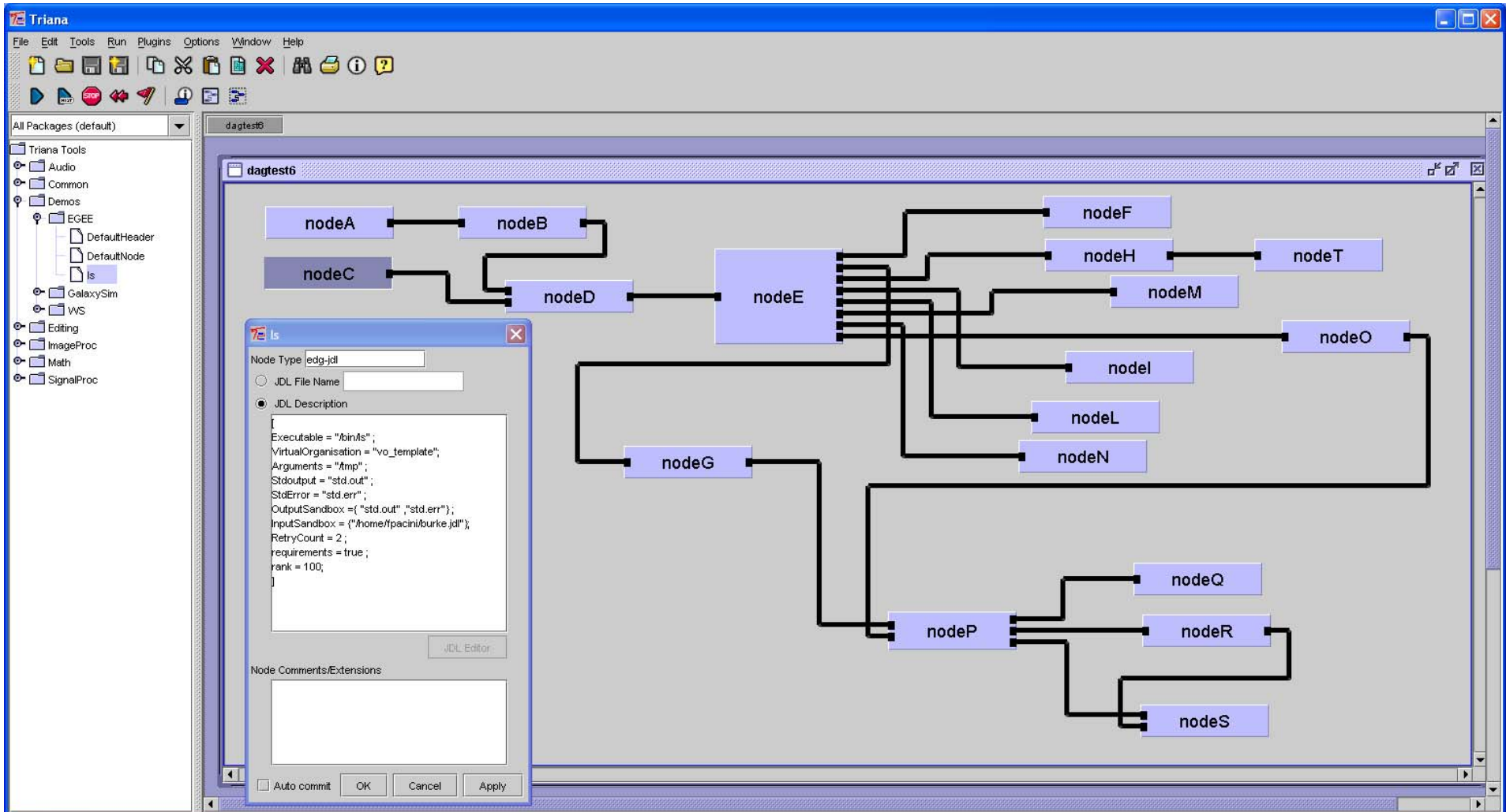
```
Type = "Job";  
JobType = "Normal";  
Executable = "/bin/sh";  
MyProxyServer="lxshare0207.cern.ch";  
StdOutput = "alroot.out";  
StdError = "alroot.err";  
InputSandbox =  
( "script-short.sh", "rootrc", "grun_3_09_06_hbt.C", "Config_HBT.C", "AllITSDigits2Rec
```

Choose Action: Save Job Description file, Submit Action, Save Job Description file, Save and Submit Job to RB

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT



# GENIUS graphic workflow editor (integration of TRIANA from GridLab)



# GENIUS single job submission

The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://genius.ct.infn.it/". The page features logos for INFN (Istituto Nazionale di Fisica Nucleare), enginframe, genius, and eGEE. A navigation bar includes "RB: catania\_gridit", "VO: alice", "RLS: GRIDIT", "Your Data", and "Logout". A sidebar on the left lists "Single Job" options: "up", "Job Submission", "Job Queue", "Job Data", "Clean Job Queues", and "Close Interactive Job Session". The main content area displays "Grid Enabled web eNvironment for site Independent User job Submission". Below this, a text prompt says "Now you may also choose a specific Computing Element for your job." A form shows "JDL File Selected" as "/home/barbera/hostname.jdl" and "Specify the CE Resource" as "Let the CATANIA\_GRIDIT Resource Broker choose". A "Submit Job" button is present. A dropdown menu lists various computing elements, with "grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite" selected. The browser's status bar at the bottom shows "Done".

# GENIUS single job queue

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RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

**Job Queue**

#	Job ID	JDL Name	Last Update	Destination	Status
1	<a href="#">G0ECFDFOnNTBK2gOPAsrDg/home/barbera/hostname.jdl</a>		Thu Apr 15 19:28:04 2004	gridba2.ba.infn.it:2119/jobmanager-lcgpbs-long	Scheduled

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[LCG-2](#)  
[GRID.IT](#)

# GENIUS multi job submission

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RB: cnaf\_gridit VO: alice RLS: GRIDIT Your Data Logout

### Job Submission

Please, select the name of the group containing the jobs that you want to submit.  
If it is a new group, choose the JDL(s) files relative to the jobs.  
Then select the number of cycles of multi-job submissions that you want to submit.

Job Group Name:

JDL File(s):

Multi-Job Type:

Submission Cycles:

#### Remote File Browsing - Mozilla

<input type="checkbox"/>	alice_rc_def.conf	413
<input type="checkbox"/>	alice_rc_hbt_production.conf	422
<input type="checkbox"/>	alice_rc_hbt_production_mss.conf	423
<input type="checkbox"/>	alice_rc_mss.conf	414
<input checked="" type="checkbox"/>	aliroot.jdl	1,644
<input type="checkbox"/>	aliroot.test.jdl	1,136
<input type="checkbox"/>	authentication.log	294
<input checked="" type="checkbox"/>	csound.jdl	807
<input type="checkbox"/>	csound.orc	2,633
<input type="checkbox"/>	csound.sco	2,491
<input type="checkbox"/>	defcity.pov	1,951
<input checked="" type="checkbox"/>	dertools.jdl	1,158
<input type="checkbox"/>	dna.pov	4,731
<input type="checkbox"/>	edg_wl_u...log	0
<input type="checkbox"/>	edglog.log	1,050

Path: /home/barbera

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT

# GENIUS multi job queue

The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://genius.ct.infn.it/". The page features logos for INFN (Istituto Nazionale di Fisica Nucleare), EnginFrame, and eGEE. A navigation menu on the left includes "Multi Job" with sub-items: "up", "Job Submission", "Job Queue", "Job Data", and "Clean Job Queues". Below the menu, it states "powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT". The main content area displays "Grid Enabled web eNvironment for site Independent User job Submission" and a table of job queue information.

RB: catania\_gridit      VO: alice      RLS: GRIDIT      Your Data      Logout

**Job Queue**

#	Job ID	Last Update	Destination	Status	Exit Code	Action
6	<a href="#">-O11R41j0z0rQ9yk-h9WdQ</a>	Thu Apr 15 19:29:11 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Running		<a href="#">Cancel</a>
5	<a href="#">SPSM_X9bG1QIjday7ew8hA</a>	Thu Apr 15 19:26:36 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Scheduled		<a href="#">Cancel</a>
4	<a href="#">gEDcoARDsYJ3Afp9pFMizw</a>	Thu Apr 15 19:29:10 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Running		<a href="#">Cancel</a>
3	<a href="#">tRr2Va5JOtbqQ1AzvJApNw</a>	Thu Apr 15 19:29:10 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-short	Running		<a href="#">Cancel</a>
2	<a href="#">CCFFfOjj-44rMu63qS0Mjw</a>	Thu Apr 15 19:29:11 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Running		<a href="#">Cancel</a>
1	<a href="#">CCFFfOjj-44rMu63qS0Mjw</a>	Thu Apr 15 19:29:11 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Running		<a href="#">Cancel</a>

# GENIUS data spooler (1/2)

The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://genius.ct.infn.it/". The page features logos for INFN (Istituto Nazionale di Fisica Nucleare), EnginFrame, genius, and eGEE. A navigation menu on the left includes "Multi Job", "up", "Job Submission", "Job Queue", "Job Data", and "Clean Job Queues". The main content area displays a table with headers: "RB: catania\_gridit", "VO: alice", "RLS: GRIDIT", "Your Data", and "Logout". A "Destroy" button is visible next to the "Directory contents" header. Below the header, there are links for "Home" and "Back". A table lists files: "csound.aiff" (11,379,286 bytes) and "csound.out.txt" (12,691 bytes), with "csound.err.txt" (175 bytes) listed below. A "RealOne Player" window is overlaid on the bottom right, showing "csound.aiff" with a progress bar at 0:09 / 1:04. The browser's status bar at the bottom shows the URL: "https://genius.ct.infn.it/ef/download/csound.aiff?spooler=spooler://opt/gen...olers/tmp1082057707024.ef8file=,barbera\_qEDcoARDsYJ3Afp9pFMizw/csound.aiff".

RB: catania_gridit	VO: alice	RLS: GRIDIT	Your Data	Logout
<a href="#">Destroy</a>	Directory contents - 20040415_212509_test-job-2/barbera_qEDcoARDsYJ3Afp9pFMizw			
<a href="#">Home</a>				
<a href="#">Back</a>				
<a href="#">csound.aiff</a>		11,379,286	<a href="#">csound.out.txt</a>	12,691
<a href="#">csound.err.txt</a>		175		



# GENIUS data spooler (2/2)

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RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

Destroy Directory contents - 20040415\_212509\_test-job-2/barbera\_gEDcoARDsYJ3Afp9pFMizw

[csound.err](#)  
[csound.out](#)

Job Services

- up
- Single Job
- Multi Job
- List Available Resources
- Job Editor
- Job GUI
- Close Job GUI Session

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compliant with  
[LCG-2](#)  
[GRID.IT](#)

Save As

Salva in: Desktop

- Documenti recenti
- Desktop
- Documenti
- Risorse del computer
- Risorse di rete

Nome file: csound.out

Salva come: Text File

Salva Annulla



# GENIUS RLS browsing

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Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

**Current directory is /**

- [alroot.test.jdl](#)
- [fig1.pdf](#)
- [mr-10737-AHITScustersV2\\_3.09.06\\_05020.root](#)
- [mr-10737-AHITStracksV2\\_3.09.06\\_05020.root](#)
- [mr-10737-AHTPCusters\\_3.09.06\\_05020.root](#)
- [mr-10737-AHTPCracksSorted\\_3.09.06\\_05020.root](#)
- [mr-10737-AHTPCracks\\_3.09.06\\_05020.root](#)
- [mr-10737-galice\\_3.09.06\\_05020.root](#)
- [mr-10737-itstracks\\_3.09.06\\_05020.root](#)
- [mr-10737-run\\_3.09.06\\_05020.log](#)
- [mr-11594-AHITScustersV2\\_3.09.06\\_05020.root](#)
- [mr-11594-AHITStracksV2\\_3.09.06\\_05020.root](#)
- [mr-11594-AHTPCusters\\_3.09.06\\_05020.root](#)
- [mr-11594-AHTPCracksSorted\\_3.09.06\\_05020.root](#)
- [mr-11594-AHTPCracks\\_3.09.06\\_05020.root](#)
- [mr-11594-galice\\_3.09.06\\_05020.root](#)
- [mr-11594-itstracks\\_3.09.06\\_05020.root](#)

Data Services  
up  
Publish a File  
Navigate RLS

powered by  
EnginFrame 3.2  
compliant with  
LCG-2  
GRID.IT

Welcome to the GENIUS INFN GRID Portal - Mozilla  
File Edit View Go Bookmarks Tools Window Help  
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RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

You have selected the file **alroot.test.jdl**  
This logical file corresponds to the following SRM(s).  
Click on the SRM(s) to view its properties.

- [sfn://grid005.ct.infn.it/flatfiles/alice/generated/2004-04-15/file/abc6df8ef3-11d8-9c65-b4d90db37641](#)

⊙ = The Best Replica

Data Services  
up  
Publish a File  
Navigate RLS

powered by  
EnginFrame 3.2  
compliant with  
LCG-2  
GRID.IT

# GENIUS data publication

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https://genius.ct.infn.it/

Home Bookmarks Instant Message WebMail

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Data Services  
up  
Publish a File  
Navigate RLS

powered by  
[EnginFrame 3.2](#)  
compliant with  
[LCG-2](#)  
[GRID.IT](#)

RB: catania\_gridit

With this service

Choose SE  
Choose File/D  
Choose Remo

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Data Services  
up  
Publish a File  
Navigate RLS

powered by  
[EnginFrame 3.2](#)  
compliant with  
[LCG-2](#)  
[GRID.IT](#)

**enginframe**

**genius**

eGEE  
Enabling Grids for  
E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

RB: catania_gridit	VO: alice	RLS: GRIDIT	Your Data	Logout
--------------------	-----------	-------------	-----------	--------

```
edg-replica-manager starting..
Issuing command : copyAndRegisterFile
Parameters:
file:///home/barbera/.genius/filestopublish/filetopublish
-1
lfn:na4-wbs.gif
-d
gridba6.ba.infn.it
Destination is a host : //gridba6.ba.infn.it
Call replica manager copyAndRegister function
Filesize to copy (MB) = 0.013323784
copy : From      : /home/barbera/.genius/filestopublish/filetopublish
copy : To        : gsiftp://gridba6.ba.infn.it/flatfiles/SE00/alice/generated/2004-04-15/file9588a666-e
copy : Protocol  : gsiftp
copy : # streams: 1
Transfer took: 3818 ms.
Copy successful to : File name      = gsiftp://gridba6.ba.infn.it/flatfiles/SE00/alice/generated/2004
File size         = 13971
File Owner       = -
Associated SE:
Created new entry for surl with logical name lfn:na4-wbs.gif
guid:9c991f27-8f17-11d8-b7be-a63a3c237fce
Copy and Registration successful.
```

# GENIUS data replication

Welcome to the GENIUS INFN GRID Portal - Mozilla

https://genius.ct.infn.it

Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

You have selected the file **almost.test.jdl**  
Click on the SRM(s) to replicate it

[srm005.ct.infn.it/files/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641](https://srm005.ct.infn.it/files/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641)

Welcome to the GENIUS INFN GRID Portal - Mozilla

https://genius.ct.infn.it

Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

You now can choose the source Storage Element (FROM SE) and the destination Storage Element (TO SE)

FROM SE:

TO SE:

LFN:

Replicate

- localice1.bo.infn.it with Mb of freespace on mount point /Raffles/SE00
- gnd003.ca.infn.it with Mb of freespace on mount point /Raffles/SE00
- gnd02.infn.it with 147383508 Mb of freespace on mount point /Raffles/SE00
- C-se-02.infn.it with 147383508 Mb of freespace on mount point /data1
- gndse01.ra.infn.it with 147383508 Mb of freespace on mount point /Raffles/SE00
- gnd002.pd.infn.it with 2085822320 Mb of freespace on mount point /Raffles/SE00
- with: 2085822320 Mb of freespace on mount point Mb
- cmsgridse.pg.infn.it with 2085822320 Mb of freespace on mount point /Raffles/SE00
- gnd001.pl.infn.it with 24330836 Mb of freespace on mount point /Raffles/SE00
- C-se-01.roma1.infn.it with 24330836 Mb of freespace on mount point
- gnd009.to.infn.it with 24330836 Mb of freespace on mount point /Raffles/SE00
- gnd01.bo.infn.it with Mb of freespace on mount point /Raffles/SE00

Welcome to the GENIUS INFN GRID Portal - Mozilla

https://genius.ct.infn.it

Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

edg-replica-manager starting...

Issuing command : replicateFile

Parameters:

```

ifnalroot.test.jdl
-d
gsid066.ba.infn.it
Destination is a host :
Call replica manager replicateFile function
Finding best replica of : ifnalroot.test.jdl
'best' with respect to : gsid066.ba.infn.it
Filesize to copy (KB) = 0.001000374
copy : From : gsiftp://gsid005.ct.infn.it/files/alice/generated/2004-04-15/file4be6df-8ef3-1
copy : To : gsiftp://gsid066.ba.infn.it/files/SE00/alice/generated/2004-04-15/file4be6df-8ef3-1
copy : Protocol : gsiftp
copy : # streams : 1
Transfer took: 1857 ms.
Copy successful to : File name = gsiftp://gsid066.ba.infn.it/files/SE00/alice/generated/2004-04-15/file4be6df-8ef3-1
File size = 1136
File Owner = -
Associated BE:
sfn://gsid066.ba.infn.it/files/SE00/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641
Replication successful.
    
```

Welcome to the GENIUS INFN GRID Portal - Mozilla

https://genius.ct.infn.it

Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

You have selected the file **almost.test.jdl**  
This logical file corresponds to the following SRM(s)  
Click on the SRM(s) to view its properties.

[srm005.ct.infn.it/files/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641](https://srm005.ct.infn.it/files/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641)

[sfn://gsid066.ba.infn.it/files/SE00/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641](https://sfn://gsid066.ba.infn.it/files/SE00/alice/generated/2004-04-15/file4be6df-8ef3-1185-9c65-b480db37641)

**Best Replica**

# GENIUS information services

Welcome to the GENIUS INFN GRID Portal - Mozilla

Address: <https://genius.ct.infn.it/>

Home | Bookmarks | Instant Message | WebMail | Calendar | Radio | People | Yellow Pages | Download | Customize...

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**engInFrame**

**genius**

**eGEE**  
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Grid Enabled web eNvironment for site Independent User job Submission

Info Services

- up
- Check Testbed
- Explore Testbed

powered by  
EngInFrame 3.2  
compliant with  
LCG-2  
GRID IT

- ibm140.cnaf.infn.it : 2170
  - mdu-vo-name=local,o=grid
    - Mds-Vo-name=infn
      - Mds-Vo-name=infn-bari
        - GlueCESEBindGroupCEUniqueID=grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite
        - GlueCESEBindGroupCEUniqueID=grid012.ct.infn.it:2119/jobmanager-lcgpbs-long
        - GlueCESEBindGroupCEUniqueID=grid012.ct.infn.it:2119/jobmanager-lcgpbs-short
        - GlueCEUniqueID=grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite
        - GlueCEUniqueID=grid012.ct.infn.it:2119/jobmanager-lcgpbs-long
        - GlueCEUniqueID=grid012.ct.infn.it:2119/jobmanager-lcgpbs-short
        - GlueClusterUniqueID=grid012.ct.infn.it
        - GlueSEUniqueID=grid005.ct.infn.it
        - GlueSLUniqueID=grid005.ct.infn.it
        - GlueServiceURI=ldap://grid005.ct.infn.it:2136
        - in=grid012.ct.infn.it/siteinfo
      - Mds-Vo-name=infn-ferrara
        - Mds-Vo-name=infn-Inf
        - Mds-Vo-name=infn-napoli

LDAP Explorer - Mozilla

Address: <https://genius.ct.infn.it/LDAPexplorer/index.php?host=ibm140.cnaf.infn.it&port=2170&dn=GlueCEUniqueID%3Dgrid012>

Home | Bookmarks | Instant Message | WebMail | Calendar | Radio | People | Yellow Pages | Download | Customize...

GlueCEUniqueID = grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite

GlueCEInfoGatekeeperPort = 2119

GlueCEInfoHostName = grid012.ct.infn.it

GlueCEInfoLRMSType = pbs

GlueCEInfoLRMSVersion = OpenPBS\_2.4

GlueCEInfoTotalCPUs = 112

GlueCEStateEstimatedResponseTime = 0

GlueCEStateFreeCPUs = 100

GlueCEStateRunningJobs = 0

GlueCEStateStatus = Production

GlueCEStateTotalJobs = 0

GlueCEStateWaitingJobs = 0

GlueCEStateWorstResponseTime = 0

GlueCEPolicyMaxCPUTime = 172800

GlueCEPolicyMaxRunningJobs = 4

GlueCEPolicyMaxTotalJobs = 999999

GlueCEPolicyMaxWallClockTime = 259200

GlueCEPolicyPriority = 1

GlueCEAccessControlBaseRule = VO:alice

GlueCEAccessControlBaseRule = VO:at140

New/Add    Modify    Delete    Rename    Reset

# GENIUS monitoring services

INFN - GridICE - Grid Monitoring Service - Mozilla

http://edk002.cnaf.infn.it:50...

Grid the eyes of the

Site view VO view Geo view Grid

Site	Slot#	SlotFree	SlotLoad
ba.infn.it	189	186	1%
bo.infn.it	30	30	0%
bo.ingv.it	24	24	0%
ca.infn.it	15	12	20%
cnaf.infn.it	-	-	-
cr.cnaf.infn.it	3162	2137	32%
ct.astro.it	0	0	-
ct.infn.it	336	300	10%
fe.infn.it	48	18	62%
le.infn.it	0	0	-
lnl.infn.it	144	115	20%
mi.infn.it	126	126	0%
na.infn.it	72	72	0%
oat.ts.astro.it	6	6	0%
pd.infn.it	198	198	0%
pg.infn.it	12	6	5%
pi.infn.it	21	15	28%
pv.infn.it	18	18	0%
roma1.infn.it	90	87	3%
to.infn.it	104	24	76%
ts.infn.it	6	6	0%
<b>TOTAL</b>	<b>4601</b>	<b>3380</b>	<b>17%</b>

Network Topology (trace.txt.datagrid.pcp)

Network topology diagram showing connections between various sites and IP addresses. Key nodes include:

- 128.40.20.189
- 139.124.126.54
- 139.124.126.54
- abilene-gw.de2.de.geant.net
- 8 nycr62.40.103.254
- 198.32.6.64
- \*12 194.214.68.42
- m160-2-0-0-OC12.tw.ascc.net
- GE-159 StarLight.ascc.net
- 140.109.251.150
- marseille-pos1-0.cssi.renater.fr
- 193.51.179.222
- cernh2-vlan2.cern.ch
- 192.65.192.2
- NAC SO1-0-0.EB-IRIS2.red.redis.es
- 130.206.240.1
- inipd-mi-g.garr.net
- 193.206.134.46
- red008.cnaf.infn.it
- 154.100.108
- marseille-mon.dat
- 139.124.70.101

Applet NetBird started



# GENIUS interactive services

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://genius.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

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**genius**

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Grid Enabled web eNvironment for site Independent User job Submission

Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

barbera@genius:~

```
csound.orc
csound.sco
defcity.pov
demptools.jdl
dna.pov
edg-1.4
edg_wl_ui_gui_log4j.log
edglog.log
file_09003.txt
generated
golden_C0.dem
grand_canyon_A2.dem
grun_3_09_06_hbt.C
grun_4_01_00.C
hadrontherapy.jdl
genius:> ned hadrontherapy.jdl
bash: ned: command not found
genius:> nedit hadrontherapy.jdl
bash: nedit: command not found
genius:> nedit
bash: nedit: command not found
genius:> emacs hadrontherapy.jdl
genius:> emacs hadrontherapy.jdl
```

test-ist2003-1\_02102003\_095622  
test.jdl  
test.sh  
test1.txt  
test10tris\_23012004\_172110  
test2.txt

emacs@genius.ct.infn.it

```
File Edit Options Buffers Tools Help
Type = "Job";
JobType = "Normal";
Executable = "/bin/sh";
MyProxyServer="lxshare0207.cern.ch";
StdOutput = "hadrontherapy.out";
StdError = "hadrontherapy.err";
InputSandbox = ("hadrontherapy.sh", "macro.mac");
OutputSandbox = ("hadrontherapy.err", "hadrontherapy.out", "picco.dat", "disA
", "disEn.dat");
RetryCount = 7;
Arguments = "hadrontherapy.sh";
Requirements =
Member("GEANT4-6", other.GlueHostApplicationSoftwareRunTimeEnvironment) && c
GlueCEPolicyMaxCPUTime>100 && other.GlueCEStateStatus == "Production" && ot
lueHostNetworkAdapterOutboundIP ;
#CEId = other.GlueCEUniqueID == "grid012.ct.infn.it:2119/jobmanager-pbs-inf
";
```

Applet VncViewer started

# GENIUS P2P services

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://genius.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

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Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: alice RLS: GRIDIT Your Data Logout

## GENIUS Chat Room for ALICE VO

Options Clear Font: monospaced 12 Users: 1

```
**
** Welcome on Chat Everywhere
** If you have any problem with this server, send a mail
** to roberto.barbera@ct.infn.it.
** You may type /help to see the available commands
**
<barbera> hello everyone !
```

barbera <--Type here

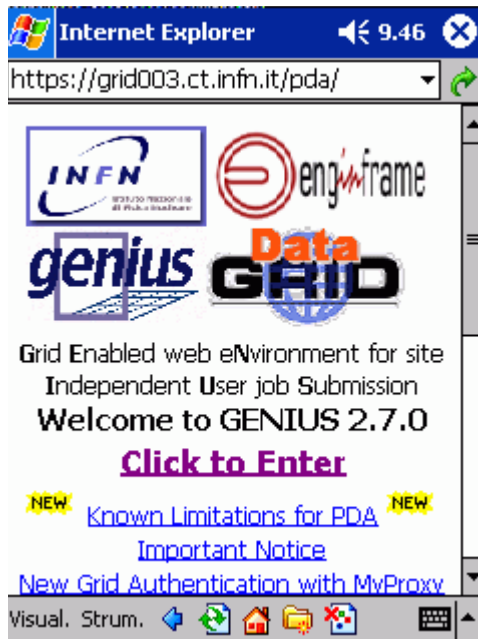
Powered by [Chat Everywhere](#)

Applet Chat started



# GENIUS for PDA (1/2)

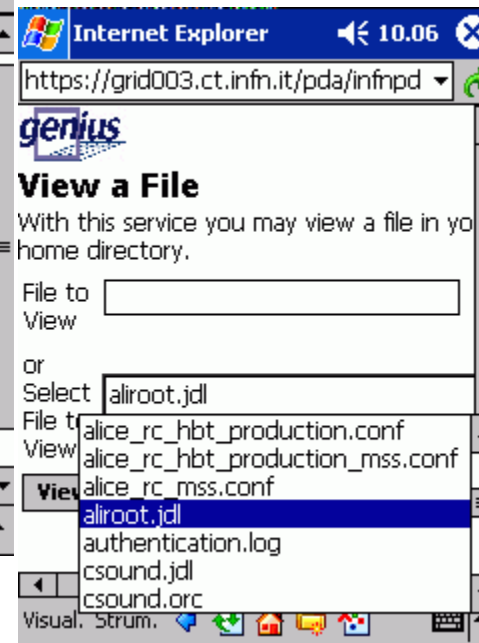
## Home Page



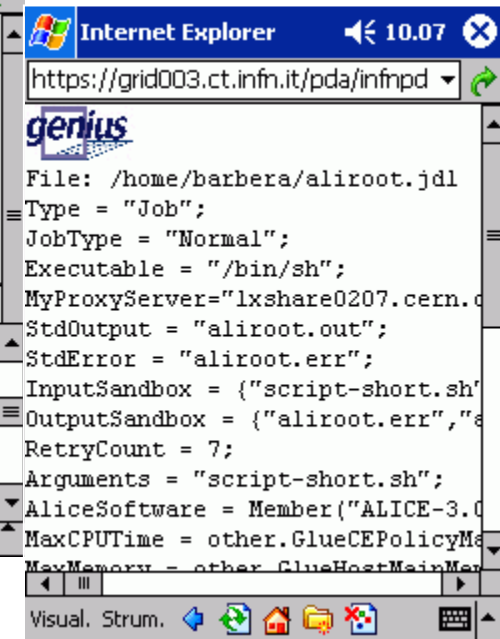
## Services



## Remote file browsing



## Remote file inspection



# GENIUS for PDA (2/2)

## Job submission

Internet Explorer 11.32  
https://grid003.ct.infn.it/pda/infnpd

**genius**

### Job Submission

Please, select a JDL file to submit.

JDL File

- /home/barbera/csound.jdl
- /home/barbera/alroot.jdl
- /home/barbera/csound.jdl
- /home/barbera/demtools.jdl
- /home/barbera/hostname.jdl
- /home/barbera/hostname1.jdl
- /home/barbera/interactive.jdl
- /home/barbera/povray\_defcity.jdl

## Job monitoring

Internet Explorer 13.19  
https://grid003.ct.infn.it/pda/infnpd

**genius**

### Job Queue

#	4
Job ID	bYqRSTNJoW6xOuwzVkJRG
JDL Name	/home/barbera/hostname.jdl
Last Update	Thu Oct 9 07:52:14 2003
Destination	testbed001.cnaf.infn.it:211 pbs-medium
Status	Done
Exit Code	0
Action	Get Output

## RC browsing

Internet Explorer 11.24  
https://grid003.ct.infn.it/pda/infnpd

**genius**

### Current directory is /

- [daniprova](#)
- [data.out](#)
- [data.out1](#)
- [data.out2](#)
- [data.out3](#)
- [datatest](#)
- [datatest1](#)
- [edglog.log](#)
- [hostname.out](#)

## GridICE integration

Internet Explorer 17.09  
http://edt002.cnaf.infn.it:8081/grid

Site	Computing power	JOB Load
ba.infn.it	3064	0%
bo.ingv.it	4797	0%
ct.infn.it	2798	0%
fe.infn.it	21942	0%
inl.infn.it	2903	0%
mi.infn.it	3972	0%
na.infn.it	n/a	n/a
pd.infn.it	60166	0%
to.infn.it	n/a	n/a
ts.infn.it	n/a	n/a

# GENIUS for cell phone



# GENIUS Applications: ALICE

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid019.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

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Interactive Services  
up  
P2P Services  
Open Desktop  
Close Desktop  
Set Desktop Password

powered by  
EnginFrame 3.2  
compliant with  
LCG-2  
GRID.IT

enginframe

genius

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E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

Previous  
Top View  
Side View  
Front View  
All Views  
OpenGL  
X3D  
ROOT ALICE  
Pick

Alice event 0, Run0  
Nparticles = 1334 Nhits = 299362

Front

Top

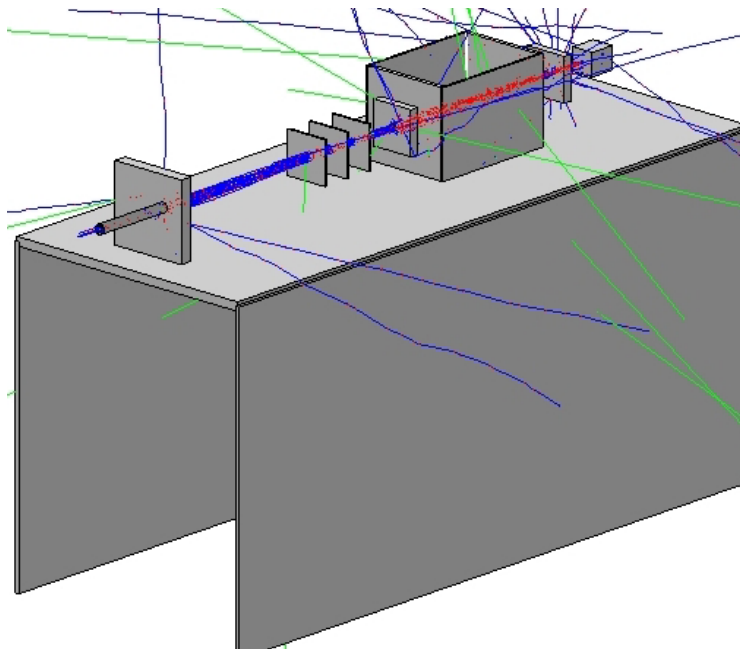
Side

VZERO is on  
EMCAL is on  
START is on  
PMD is on  
PHOS is on  
MUON is on  
FMD is on  
TRD is on  
ZDC is on  
RICH is on  
TOF is on  
TPC is on  
ITS is on

https://grid019.ct.infn.it/infn.grid.xml? uri=/infn.grid/open-desktop

# GENIUS applications: hadronTherapy

CATANA beam  
line in reality



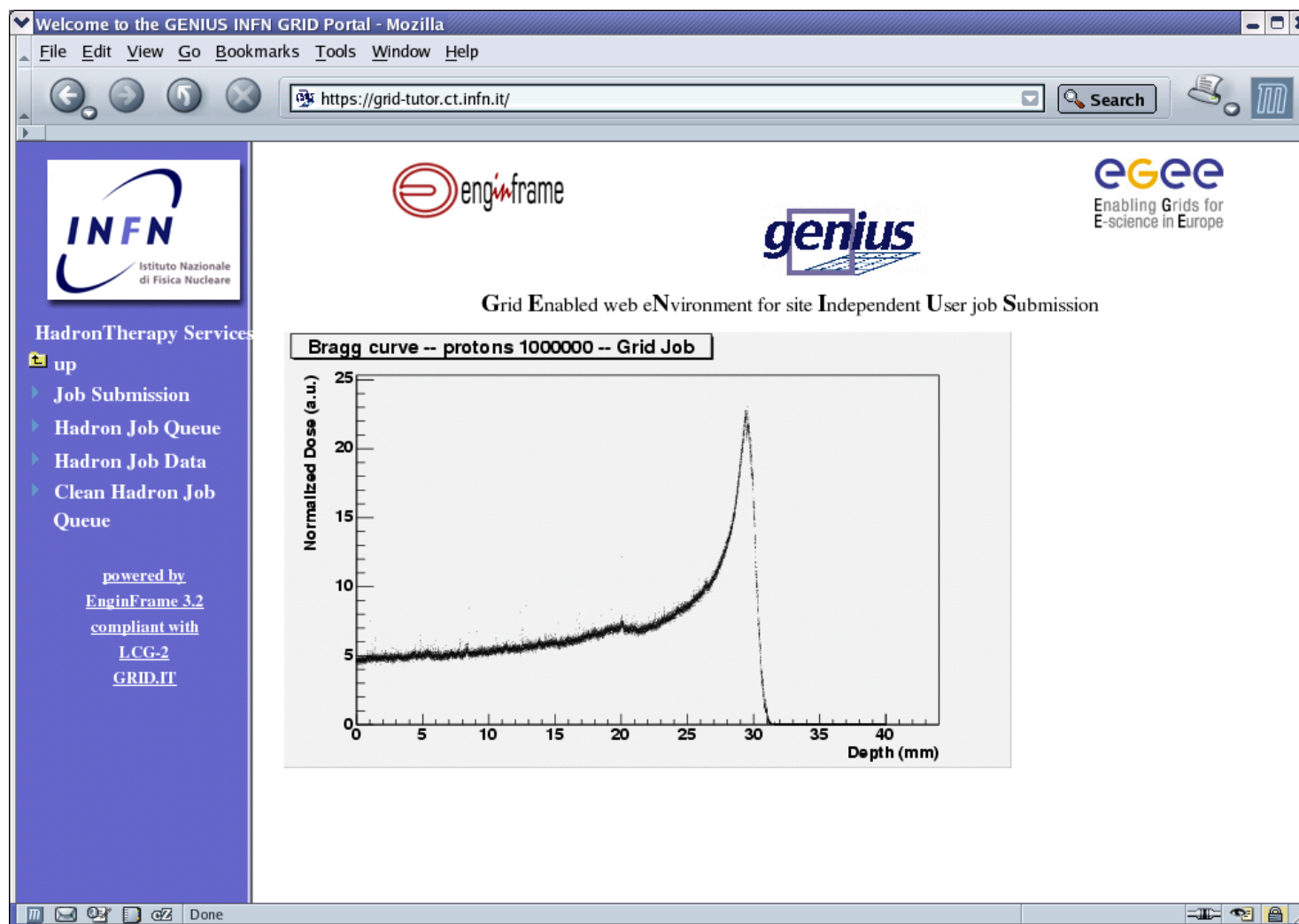
CATANA beam line  
simulated by  
*hadronTherapy*  
with *GEANT4*

# hadronTherapy cycle submission

The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla" with the address bar set to "https://grid-tutor.ct.infn.it/". The page features logos for INFN (Istituto Nazionale di Fisica Nucleare), EnginFrame, and GENIUS. A navigation bar includes links for "RB: gilda", "VO: gilda", "RLS: GILDA", "Your Data", and "Logout". The main content area prompts the user to "Please, select a job to submit." and provides a form with the following fields: "Production Name" (testFull), "Job Type" (hadrontherapy.jdl), "Number of cycles" (10), and "Event number for cycle" (100000). A "Submit" button is located below the form. A left sidebar contains a "HadronTherapy Services" menu with options like "Job Submission" and "Hadron Job Queue". At the bottom, it notes the system is "powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT".



# hadronTherapy Bragg peak in GENIUS





# GENIUS Applications: GATE (1/3)

Welcome to the GENIUS INFN GRID Portal - Microsoft Internet Explorer

Eichier Edition Affichage Favoris Outils ?

← Précédente → Recherche Favoris Média

Adresse <https://grid011.ct.infn.it> OK Liens »

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**Welcome to BIO Services**

GATE

- up
- Jobs Services
- Data Services

powered by  
EnginFrame 3.2  
compliant with  
LCG-2  
GRID.IT

Terminé Internet

# GENIUS Applications: GATE (2/3)

Welcome to the GENIUS INFN GRID Portal - Microsoft Internet Explorer

Eichier Edition Affichage Favoris Outils ?

← Précédente → Recherche Favoris Média

Adresse <https://grid011.ct.infn.it> OK Liens »

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Grid Enabled web eNvironment for site Independent User job Submission

RB: catania\_gridit VO: bio RLS: GRIDIT Your Data Logout

### Create GATE files

With this service it will be created/checked your GATE Repository and Settings

Repository Name

InputSandbox Files (3 files)

InputData lfn:

macro (.mac)

Number of Partitions

Status Files (=Number of Partitions)

powered by  
EnginFrame 3.2  
compliant with  
LCG-2  
GRID.IT

Terminé Internet

# GENIUS Applications: GATE (3/3)

Job ID	Last update	Destination	Status
<a href="https://grid014.ct.infn.it:9000/gKL5BHkh3nllT26wiCnnKg">https://grid014.ct.infn.it:9000/gKL5BHkh3nllT26wiCnnKg</a>	Fri Apr 16 08:07:32 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Scheduled
<a href="https://grid014.ct.infn.it:9000/EoY3T3MxJEFOuUAB8MVQDQ">https://grid014.ct.infn.it:9000/EoY3T3MxJEFOuUAB8MVQDQ</a>	Fri Apr 16 08:06:37 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Scheduled
<a href="https://grid014.ct.infn.it:9000/hbtma7zWlXMTKpOTdg65tQ">https://grid014.ct.infn.it:9000/hbtma7zWlXMTKpOTdg65tQ</a>	Fri Apr 16 08:05:53 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Scheduled
<a href="https://grid014.ct.infn.it:9000/ApwHH5r19KLHecxhjoXeTQ">https://grid014.ct.infn.it:9000/ApwHH5r19KLHecxhjoXeTQ</a>	Fri Apr 16 08:05:19 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Scheduled
<a href="https://grid014.ct.infn.it:9000/gKN99_RfaThA5stPsxkYUQ">https://grid014.ct.infn.it:9000/gKN99_RfaThA5stPsxkYUQ</a>	Fri Apr 16 08:07:54 2004	grid012.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Running

# GENIUS Applications: GPCALMA

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid019.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

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**Enginframe**

**genius**

**eGEE**  
Enabling Grids for  
E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

GPCALMA Graph Interface

Patient Image CAD

CC

powered by  
[EnginFrame 3.2](#)  
compliant with  
[LCG-2](#)  
[GRID.IT](#)

Applet VncViewer started

# GENIUS present status

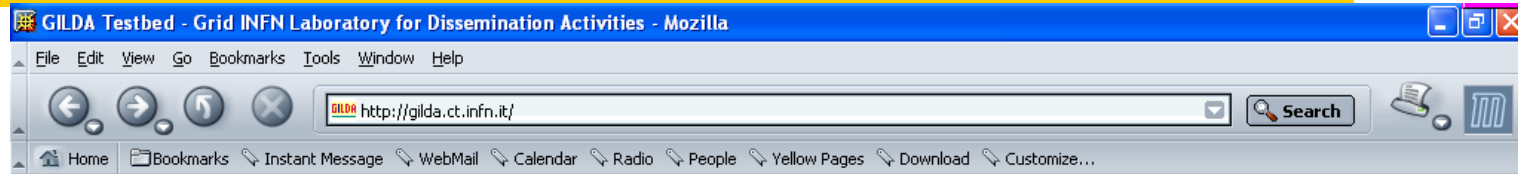
- Current implementation of **GENIUS** includes more than 100 services. Among them:
  - grid authentication with MyProxy !
  - several Resource Brokers, VO's and RLS available;
  - full support for “interactive” and “parallel” multi-jobs
  - web guided job description, submission and monitoring (in collaboration with DATAMAT)
  - Web guided workflow description (in collaboration with GridLab)
  - P2P services available
  - PDA and cell phone versions available
  - Transparently compliant with EDG2.1, LCG2 and Grid.it middlewares/VO's
  - Interfaced to many High Energy Physics, Biomed and Generic Applications

## Conclusions and outlook for GENIUS

- GENIUS is “well on track” and seems to have a recognized present and a promising future
- It tries to merge the concepts of “user portal” and “science portal” and can easily evolve into a graphic “problem solving environment”
- It is the most advanced suite “on the market” for transparent access to several grid middlewares
- GENIUS is not only intended for a scientist day-by-day use. It has expressly been included in the EU EGEE Proposal and Technical Annex as a dissemination and tutoring tool for non expert users and as the grid portal for generic applications



# The GILDA home page (<http://gilda.ct.infn.it>)



## GILDA ( G rid I nfn L aboratory for D issemination A ctivities )

- 
- Instructions for users
- Instructions for sites
- Useful links
  
- Usage Statistics

is a virtual laboratory to demonstrate/disseminate the strong capabilities of grid computing.

GILDA consists of the following elements:

- [the GILDA Testbed](#): a series of sites and services (Resource Broker, Information Index, Replica Location Server, Monitoring tool, Computing Elements, and Storage Elements) spread all over Italy on which the last version of the [INFN Grid](#) middle-ware is installed;
- [the Grid Demonstrator](#): a customized version of the full [GENIUS web portal](#), jointly developed by INFN and [NICE](#), from where **everybody** can submit a pre-defined set of applications to the GILDA Testbed;
- [the GILDA Certification Authority](#): a fully functional Certification Authority which issues 14-days X.509 certificates to everybody wanting to experience grid computing on the GILDA Testbed;
- [the GILDA Virtual Organization](#): a Virtual Organization gathering all people wanting to experience grid computing on the GILDA Testbed;
- [the Grid Tutor](#): based on a full version of the [GENIUS web portal](#), to be used only during [grid tutorials](#);
- [the monitoring system](#): a versatile monitoring system completely based on [GridICE](#), the grid monitoring tool developed by INFN;
- [the GILDA mailing list](#): [gilda@infn.it](mailto:gilda@infn.it), also archived on the web [here](#).

GILDA is an activity of the Italian [Istituto Nazionale di Fisica Nucleare \(INFN\)](#) carried on in the context of both the Italian [INFN Grid](#) and European [EGEE](#) Projects.



# The GILDA Testbed

**Grid services**

This is a table of the general Grid Services nodes running.

SERVICE	HOST
Resource Broker (RB)	<a href="http://grid004.ct.infn.it">grid004.ct.infn.it</a>

**Grid services**

This is a table of the general Grid Services nodes running.

SERVICE	HOST
Resource Broker (RB)	<a href="http://grid004.ct.infn.it">grid004.ct.infn.it</a>
Information Index (BDII)	<a href="http://grid017.ct.infn.it">grid017.ct.infn.it</a>
Top MDS	<a href="http://grid018.ct.infn.it">grid018.ct.infn.it</a>
LDAP (for GILDA VOs)	<a href="http://grid-vo.cnaf.infn.it:10369">grid-vo.cnaf.infn.it:10369</a>
GridCE	<a href="http://alifam7.ct.infn.it:50080">alifam7.ct.infn.it:50080</a>
Replica Location Service (RLS)	<a href="http://grid008.ct.infn.it">grid008.ct.infn.it</a>

# The GILDA Certification Authority (1/2)

**GILDA**  
GRID INFN LABORATORY for  
DISSEMINATION ACTIVITIES

## The GILDA Certification Authority

- General information
- GILDA CA certificate
- Request a personal certificate
- Request an account
- Request a host certificate
- Check a personal certificate
- Certificate Revocation List

The **GILDA Certification Authority** (GILDA CA) issues temporary (two weeks) personal public key certificates (compliant with the X.509 standard) in order to access the GILDA Testbed.

**Absolutely no identity check** is going to be performed on the requester, so the personal certificates issued by the GILDA CA have absolutely no value on any real production Grid Infrastructure.

The **GILDA Certification Authority** is managed by:

Giuseppe Platania  
INFN Catania  
Via S. Sofia, 64  
I-95123 Catania  
ITALY

e-mail: [gilda-ca@ct.infn.it](mailto:gilda-ca@ct.infn.it)  
Tel: +39 095 378 5469  
Fax: +39 095 378 5231

In order to inspect the GILDA CA certificate and/or save it in your web browser (necessary to validate your personal certificate) click on **GILDA CA certificate** in the left part of this page.

In order to request a certificate, click on **Request a personal certificate** in the left part of this page.

If you already have a trusted personal certificate, click on **Request an account**, in the left part of this page, to request an account. Your personal certificate must be included in your browser before doing this.

In order to request a host certificate, click on **Request a host certificate** in the left part of this page.

# The GILDA Certification Authority (2/2)

**Request a GILDA CA personal certificate - Mozilla**  
https://gilda.ct.infn.it/CA/mgt/restricted/ucert.php

**Request an account**  
In order to correctly generate a request it is mandatory to fill all fields in the form below. Please, double check the correctness of the e-mail address that you are going to provide since **no verification** will be performed by the server.

**Request a host certificate**  
The password you are prompted about in the form below is the password of your personal account on the **GENIUS Portal** from where you will access the GILDA Testbed and it is **NOT** the passphrase of your personal certificate.

**Check a personal certificate**

**Certificate Revocation List**  
When the certificate will be signed by the GILDA CA manager you will be notified by e-mail with the instructions to download your GILDA CA personal certificate and access the GILDA Testbed.

Institute/University/Company:	INFN Catania
First name and last name:	Roberto Barbera
Account username (max 8 characters, only not-accented letters and digits are allowed, both lowercase and uppercase):	barbera
Account password (only not-accented letters and digits are allowed, both lowercase and uppercase):	*****
Confirm account password (only not-accented letters and digits are allowed, both lowercase and uppercase):	*****
E-mail:	roberto.barbera@ct.infn.it
KeySize:	2048 (High Grade)

Submit the request Clear form

**Mozilla**  
https://gilda.ct.infn.it/CA/mgt/restricted/srvreq.php

**The GILDA Certification Authority**  
GILDA  
GRID INFN LABORATORY FOR  
DISSEMINATION ACTIVITIES

- General information
- GILDA CA certificate
- Request a personal certificate
- Request an account
- Request a host certificate
- Check a personal certificate
- Certificate Revocation List

**Request a GILDA host certificate**

When the certificate will be signed by the GILDA CA manager you will be notified by e-mail with the instructions to download your GILDA host certificate.

Institute/University/Company:	INFN Catania
Full server hostname (do not use generic names from Internet Providers):	grid-ce.ct.infn.it
E-mail address of server administrator (do not use generic addresses but only personal ones):	roberto.barbera@ct.infn.it

Submit the request Clear form

# The GILDA Virtual Organization

GILDA Testbed - Grid INFN Laboratory for Dissemination Activities - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://gilda.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

**INFN GRID** **GILDA** **eGEE**  
Enabling Grids for E-science in Europe

HOME TESTBED 1) CERTIFICATION AUTHORITY 2) REGISTER to the GILDA VO 3) Go to the GRID DEMONSTRATOR GENIUS PORTAL MONITORING CONTACTS

➤ Grid tutorials  
➤ Instructions for users  
➤ Instructions for sites  
➤ Useful links

➤ Usage Statistics

**Registration Form**

Nome e cognome / First name and family name: Roberto Barbera

Istituto/Institute: GILDA-INFN Catania

Telefono/Phone number: +390951234567

E-mail: roberto.barbera@ct.infn.it

Selezione VO / VO choice:

La sottomissione della domanda implica l'obbligo ad un corretto uso delle risorse messe a disposizione dell'utente.

Clear Form Register

# The GILDA monitoring system (1/3)

**Grid tutorials**

- Video tutorials **NEW**
- Instructions for users
- Instructions for sites
- Useful links

**Sponsors**

- Usage Statistics

Site	Slot#	SlotFree	SlotLoad	Computing Resources		Power	CPU#	CPULoad	Storage Resources	
				RunJob	WaitJob				Available	Total
cnaf.infn.it	12	12	0%	0	0	2792	2	0%	13.7 Gb	15.3
ct.infn.it	48	45	6%	1	0	14418	18	0%	1.8 Tb	2.0
datagrid.cnr.it	6	3	5%	1	2	1730	1	0%	15.8 Gb	17.4
gl2006europe.com	3	3	0%	0	0	-	-	-	67.4 Gb	69.7
pd.infn.it	12	12	0%	0	0	3984	4	100%	499.0 Gb	499.3
tilab.com	6	6	0%	0	0	3186	2	0%	32.7 Gb	34.3
<b>TOTAL</b>	<b>87</b>	<b>81</b>	<b>9%</b>	<b>2</b>	<b>2</b>	<b>26110</b>	<b>27</b>	<b>20%</b>	<b>2.4 Tb</b>	<b>2.6</b>

Generated: Mon, 19 Jul 2004 12:42:20 +0200



# The GILDA monitoring system (2/3)

**Instructions for users**

**Instructions for sites**

**Useful links**

**Usage Statistics**

Node	Role	UpTime	Reg.OpenFiles.	Socket: TCP(4)	UDP(9)	FS		
grid017.ct.infn.it	BD	38-7:30	223	TCP(4)	UDP(9)	FS		
grid004.ct.infn.it	RB	22-4:33	3499	TCP(17)	UDP(13)	FS		
broker	Process Name	Status	Inst#	Instances First	Last	CPU 1Max All	Memory 1Max Avg	1M
	condorg-scheduler	S	1	6-11:55	6-11:55	0 0	0 0	0-
	condor-master	S	1	6-11:55	6-11:55	0 0	0 0	0-
	fmon-agent	S	1	22-6:18	22-6:18	0 0	0 0	0-
	ftp-server	S	1	6-12:35	6-12:35	0 0	0 0	0-
	job-controller	S	1	6-12:35	6-12:35	0 0	0 0	0-
	local-logger	S	1	6-11:35	6-11:35	0 0	0 0	0-
	local-logger-interlog	S	5	6-11:55	6-11:54	0 0	0 0	0-
	logging-and-bookkeeping	S	11	6-11:15	0-0:6	0 0	0 0	0-
	log-monitor	S	1	6-11:55	6-11:55	0 0	1 1	0-
	network-server	S	21	6-11:55	6-11:55	0 0	1 1	0-
	proxy-renewal	S	2	6-11:54	6-11:54	0 0	0 0	0-
	rdxprof	S	1	22-5:40	22-5:40	0 0	0 0	0-
	workload-manager	S	4	6-11:55	6-11:55	0 0	1 1	0-
grid010.ct.infn.it	CE	6-11:1	623	TCP(15)	UDP(20)	FS		
grid009.ct.infn.it	SE	38-3:10	1416	TCP(15)	UDP(16)	FS		
grid019.ct.infn.it	WN	3-18:1	172	TCP(5)	UDP(14)	FS		
grid020.ct.infn.it	WN	6-10:1	172	TCP(5)	UDP(14)	FS		
grid021.ct.infn.it	WN	6-7:31	169	TCP(5)	UDP(14)	FS		
grid022.ct.infn.it	WN	6-5:1	172	TCP(5)	UDP(14)	FS		
grid023.ct.infn.it	WN	6-7:31	169	TCP(5)	UDP(14)	FS		

# The GILDA monitoring system (3/3)

**VO gilda jobs graph - Mozilla**

Virtual Organization: gilda

browseable jobs graph | history jobs graphs    switch to advanced mode

offset: [-2 hours]  
zoom: [2 hours] [1 day] [1 week] [1 month]

Start: Thu, 15 Apr 2004 18:00:00 +0200 -- Range: 2 Hours

Time	Run	Wait
18:10	~7	~4
18:30	~6	~5
18:50	~4	~3
19:10	~2	~1
19:30	~1	~0
19:50	~0	~0

Number of jobs in the queues where the **gilda** VO can run.

Site	Computing Element ID	run jobs	wait jobs	free slots	total slots	max
Site: <b>ct.infn.it</b>	grid010.ct.infn.it:2119/jobmanager-lcgpbs-short	0	0	16	16	99
	grid010.ct.infn.it:2119/jobmanager-lcgpbs-long	0	0	16	16	99
	grid010.ct.infn.it:2119/jobmanager-lcgpbs-infinite	0	0	16	16	99
	Storage Element ID - Storage Space ID		avail space		used space	
grid009.ct.infn.it - gilda:gilda		1.81 Tb		60.87 Gb		
Site: <b>pd.infn.it</b>	grid011.pd.infn.it:2119/jobmanager-lcgpbs-long	0	0	4	4	99
	grid011.pd.infn.it:2119/jobmanager-lcgpbs-infinite	0	0	4	4	99
	grid011.pd.infn.it:2119/jobmanager-lcgpbs-short	0	0	4	4	99
	Storage Element ID - Storage Space ID		avail space		used space	
grid015.pd.infn.it - gilda:gilda		499.27 Gb		32.11 Mb		

Navigation sidebar:

- Grid tutorials
- Instructions for users
- Instructions for sites
- Useful links
- Usage Statistics



# The GILDA Grid Demonstrator (1/3) (<https://grid-demo.ct.infn.it>)

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid-demo.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

**INFN**  
Istituto Nazionale  
di Fisica Nucleare

File Services  
Security Services  
Info Services  
Monitoring Services  
VO Services  
Logout

powered by  
[EnginFrame 3.2](#)  
compliant with  
[LCG-2](#)  
[GRID.IT](#)

Grid Enabled web eNvironment for site Independent User job Submission

## Welcome to the **GILDA** Grid Demonstrator powered by **GENIUS 2.8.4**

GILDA Grid Demonstrator User's Guide ([pdf](#))  
[Credits](#)

This portal is best viewed with Mozilla 1.6.  
Netscape (4.79, 4.80, 6 and higher) and Internet  
Explorer (5 or higher) can also be used.  
The use of any other web browsers could induce some  
visualization mismatches and is not currently suggested.  
GENIUS is based on Apache 1.3.29 and OpenSSL 0.9.7c.  
Last update: **Fri 16 Apr 2004**

Done

# The GILDA Grid Demonstrator (2/3)

(<https://grid-demo.ct.infn.it>)

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid-demo.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

**INFN**  
Istituto Nazionale  
di Fisica Nucleare

enginframe

**genius**

eGEE  
Enabling Grids for  
E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

**Login to the GRID**

Username: demo07

MyProxy Passphrase: [masked]

Validity (hours): 4

Login

powered by  
[EnginFrame 3.2](#)  
compliant with  
[LCG-2](#)  
[GRID.IT](#)

- File Services
- Security Services
- Info Services
- Monitoring Services
- VO Services
- Logout

# The GILDA Grid Demonstrator (3/3) (https://grid-demo.ct.infn.it)

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid-demo.ct.infn.it/

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

**INFN** Istituto Nazionale di Fisica Nucleare

**engwframe**

**genius**

**eGEE** Enabling Grids for E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda RLS: GILDA Your Data Logout

Please, select a Group Type to submit.

Group Type: [01. Sound Creation] [v]

Next

- 01. Sound Creation.
- 02. Virtual Reality.
- 03. 3D-Rendering of static images.
- 04. Cyclic Animation.
- 05. Simple examples.
- 06. ENVISAT Satellite MERIS applications.
- 07. ENVISAT Satellite ASAR applications.

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT

Job Services

- up
- Job Submission
- Job Queue
- Job Data
- Clean Job Queue

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid-demo.ct.infn.it/

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

**INFN** Istituto Nazionale di Fisica Nucleare

**engwframe**

**genius**

**eGEE** Enabling Grids for E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda RLS: GILDA Your Data Logout

Please, select a Job Type to submit.

Job Type: [04. Virtual Reality of 2 Digital Elevation Models (demtools.jdl - exec. time: 5 min.)] [v]

Next

- 04. Virtual Reality of 2 Digital Elevation Models (demtools.jdl - exec. time: 5 min.)
- 05. Virtual Reality of Etna and Stromboli volcano's eruptions (demtools2.jdl - exec. time: 5 min.)
- 06. Virtual Reality of two American mountains (demtools3.jdl - exec. time: 6 min.)

powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT

Job Services

- up
- Job Submission
- Job Queue
- Job Data
- Clean Job Queue

# The GILDA Applications: Biomedicine

The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains the URL "https://grid-demo.ct.infn.it/". The browser's menu bar includes "File", "Edit", "View", "Go", "Bookmarks", "Tools", "Window", and "Help". The toolbar features navigation buttons (back, forward, home, stop), a search box, and icons for Home, Bookmarks, Instant Message, WebMail, Calendar, Radio, People, Yellow Pages, Download, and Customize... The main content area of the browser displays the GENIUS INFN GRID Portal. On the left is a blue sidebar with the INFN logo (Istituto Nazionale di Fisica Nucleare) and a "Job Services" menu with items: "up", "Job Submission", "Job Queue", "Job Data", and "Clean Job Queue". Below the menu, it states "powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT". The main content area features logos for "enginframe", "genius", and "egee". Below the logos is the text "Grid Enabled web eNvironment for site Independent User job Submission". The central image is a 3D rendering of multiple DNA double helix structures, with one prominent helix in the foreground showing a multi-colored (red, green, blue, yellow) backbone. The browser's status bar at the bottom shows "Done".

# The GILDA Applications: Earth Observations

Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://grid019.ct.infn.it/ Search

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

INFN enginframe genius eGEE Enabling Grids for E-science in Europe

ident User job Submission

Your Data	Logout
9_2pWUxVIg-e5Ej9ZBup4QtQ	
<a href="#">sainte_helens_WA.ppm</a>	1,404,771
<a href="#">sainte_helens_WA.wrl</a>	837,421
<a href="#">ols.out.txt</a>	2,394

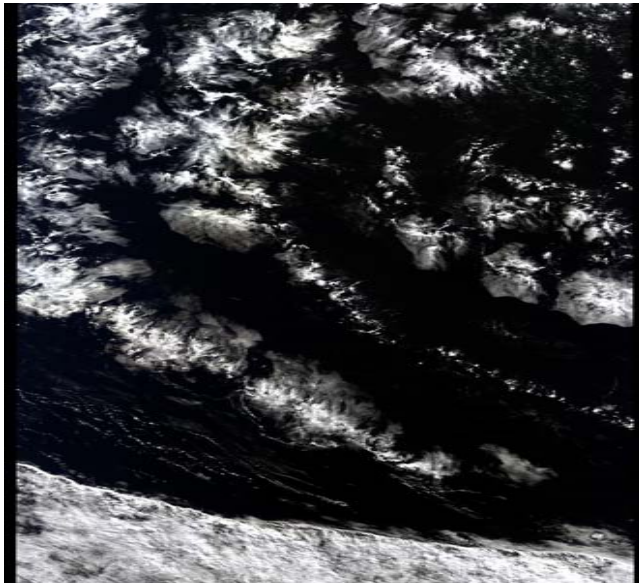
Operazione completata Risorse del computer



# ENVISAT (MERIS)

**MERIS** (*Medium Resolution Imaging Spectrometer Instrument*) is one of the 10 instruments flying on board of **ENVISAT** Earth Observation satellite. Its goal is to measure the solar radiation reflected by the Earth.

**C.1 MERIS-DEMO.jdl**



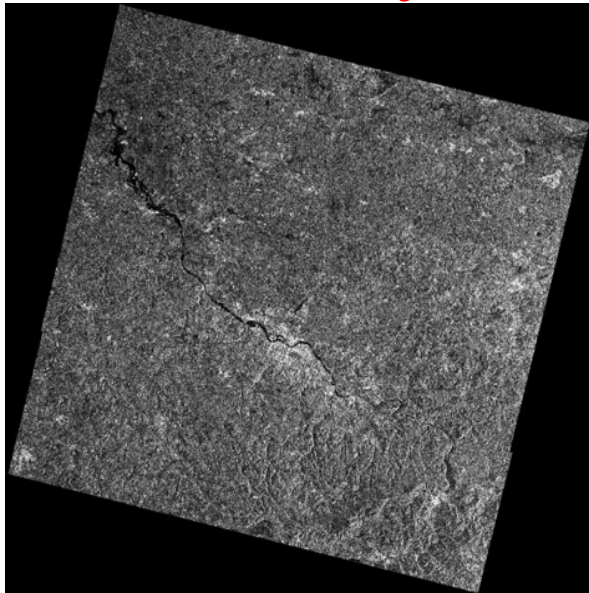
**C.2 MERIS-ETNA.jdl**



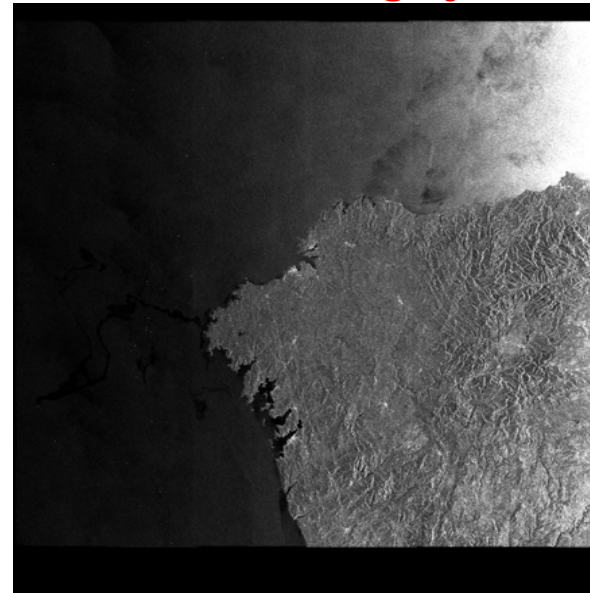
# ENVISAT (ASAR)

**ASAR** (*Advanced Synthetic Aperture Radar*) is an all-weather, day-and-night high-resolution radar-imaging instrument on board of **ENVISAT** Earth Observation satellite.

**D.1 ASAR-DEMO.jdl**



**D.2 ASAR-Prestige.jdl**



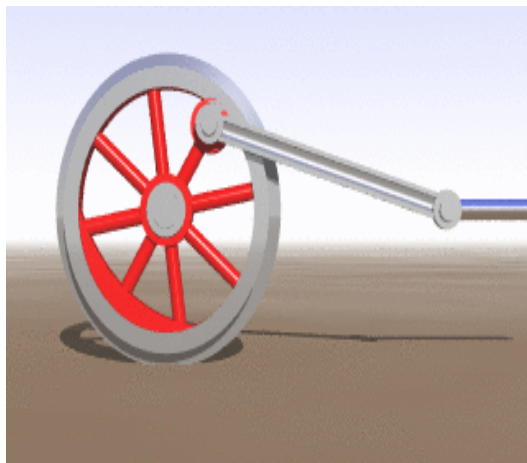


# The GILDA Applications: Engineering

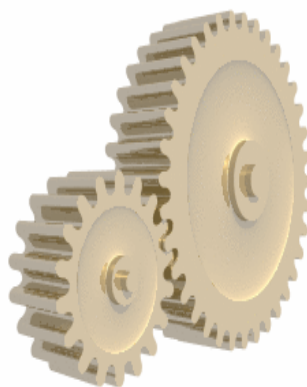
The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://grid019.ct.infn.it/". The browser's menu bar includes File, Edit, View, Go, Bookmarks, Tools, Window, and Help. The toolbar features navigation buttons, a search box, and icons for Home, Bookmarks, Instant Message, WebMail, Calendar, Radio, People, Yellow Pages, Download, and Customize... The main content area displays the INFN logo (Istituto Nazionale di Fisica Nucleare) on the left, and the EnginFrame, genius, and eGEE logos at the top. Below the logos, the text reads "Grid Enabled web eNvironment for site Independent User job Submission". A large 3D CAD model of a mechanical component is centered on the page. On the left side, a vertical navigation menu lists "Single Job" and "up" with sub-items: Job Submission, Job Queue, Job Data, Clean Job Queues, and Close Interactive Job Session. At the bottom of the menu, it states "powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT". The browser's status bar at the bottom shows "Done" and various system icons.

# GILDA applications: 4-D rendering

**B.10 con\_rod.jdl**



**B.11 gear.jdl**



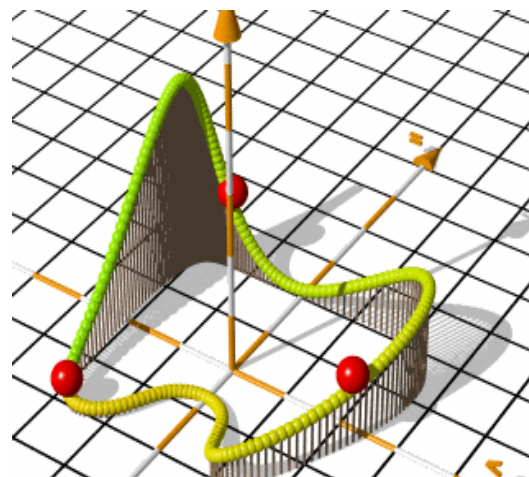
**B.12 sphere.jdl**



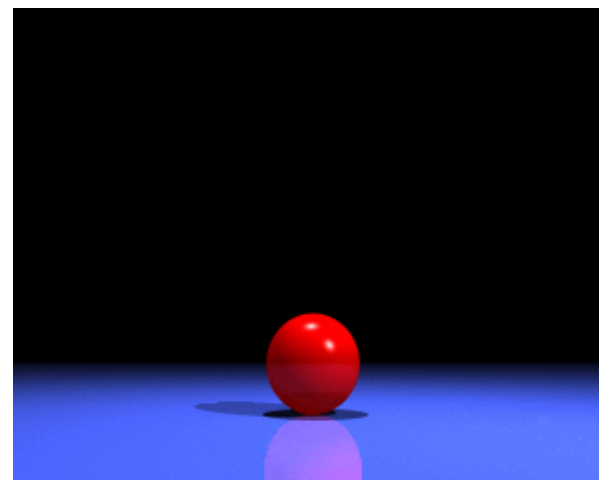
**B.13 spiral.jdl**



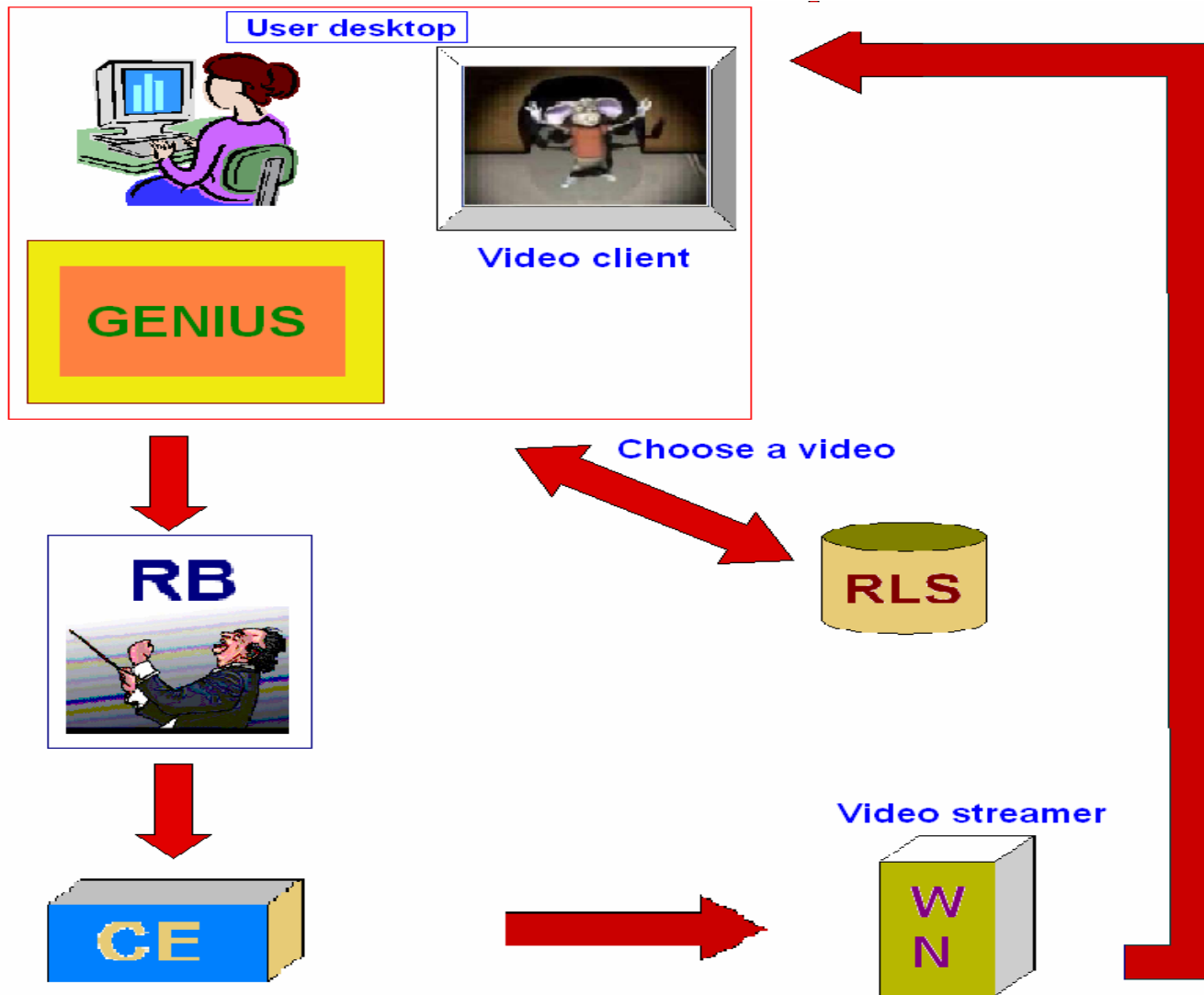
**B.14 spline.jdl**



**B.15 ball.jdl**



# The Video on demand application



# Video on demand at work

Welcome to the eGEE GENIE Portal - genie (Build ID: 2004031414)  
 Grid Enabled web +Navonave User for Independent User Job Submission

Job ID	JDL Name	Last Update	Destination	Status	Exit Code	Action
1 14415262510151744537	Amor@navo20040314	Wed Jun 23 17:45:57 2004	g4010.ct.infn.it:1190/genie-vgite-1-6-0	Running		Cancel

WLC media player  
File Windows Repertoire Audio Video Help Help+ About  
Alien Song  
©1999 vico navone

INFN  
 Video on Demand  
 Request a Video  
 Video Queue  
 Clean Video Queue  
 powered by  
 RealPlayer 3.2  
 mozilla/verba  
 LCV 2  
 CRD.IT

Welcome to the eGEE GENIE Portal - genie (Build ID: 2004031414)  
 Grid Enabled web +Navonave User for Independent User Job Submission

Job ID	JDL Name	Last Update	Destination	Status	Exit Code	Action
1 14415262510151744537	Amor@navo20040314	Wed Jun 23 17:55:2 2004	g4010.ct.infn.it:1190/genie-vgite-1-6-0	Running		Cancel

WLC media player  
File Windows Repertoire Audio Video Help Help+ About  
Mickey Mouse  
©1999 vico navone

INFN  
 Video on Demand  
 Request a Video  
 Video Queue  
 Clean Video Queue  
 powered by  
 RealPlayer 3.2  
 mozilla/verba  
 LCV 2  
 CRD.IT

# The GILDA Tutorials (1/2)

(<http://gilda.ct.infn.it/tutorials.html>)

- Edinburgh, 7 April 2004
- Tunis, 22-23 April 2004
- Edinburgh, 26-28 April 2004
- CERN, 17-19 May 2004
- Catania, 24-25 May 2004
- Dubna, 29 June - 2 July 2004
- Edinburgh, 6 July 2004
- Karlsruhe, 6 July 2004
- Catania, 14-16 July 2004
- Vico Equense, 19 July 2004
- Istanbul, 9-10 December 2004





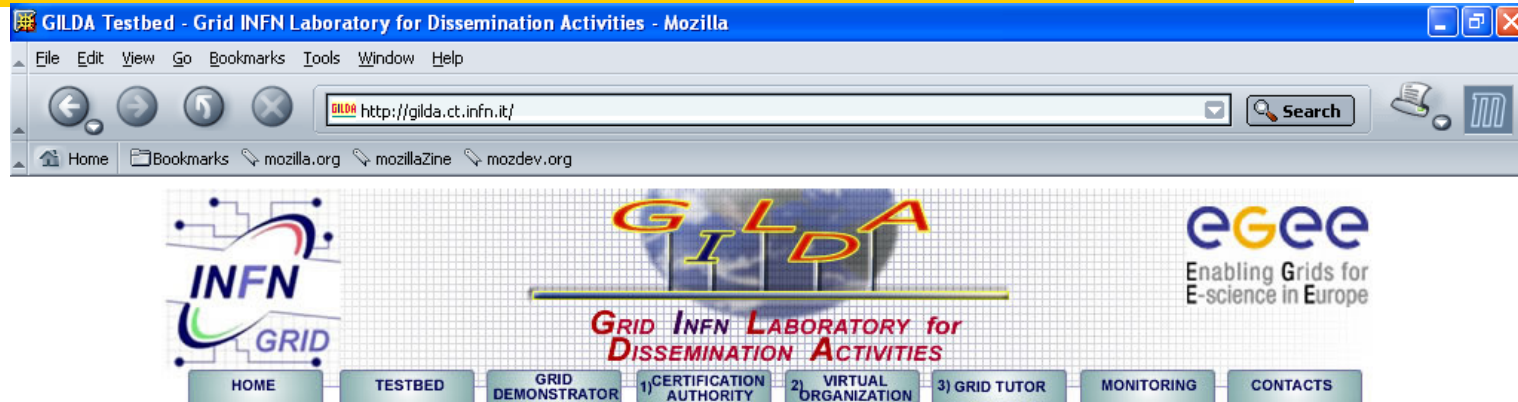
# The GILDA Tutorials (2/2)

(<http://gilda.ct.infn.it/tutorials.html>)





# The GILDA Video Tutorials (<http://gilda.ct.infn.it/video.html>)



- Grid tutorials
- Video tutorials **NEW**
- Instructions for users
- Instructions for sites
- Useful links
  
- Sponsors
- Usage Statistics

## GILDA Video Tutorials

### How to join GILDA

- Real stream (faster but lower quality - 800 x 600)
- Flash movie (slower but higher quality - 800 x 600)

### Certificate: conversion and manipulation

- Real stream (faster but lower quality)
- Flash movie (slower but higher quality)

### The GILDA Grid Demonstrator

- Real stream (faster but lower quality)
- Flash movie (slower but higher quality)

# Conclusions and outlook for GILDA

- GILDA is a complete suite of grid elements (RB, BDII, RLS, CA, VO, monitoring system, web portal) and applications fully dedicated to dissemination purposes.
- GILDA runs and will run the last production (stable) version of the grid middleware (currently Grid.it 2.0.0 based on LCG 2.0.0).
- GILDA is the dissemination tool which will be used during EGEE induction courses and tutorials.
- **GILDA is also the ideal grid testbed where to start the (pre-)porting of new generic applications (e.g., GRACE Project)**