



Enabling Grids for E-science

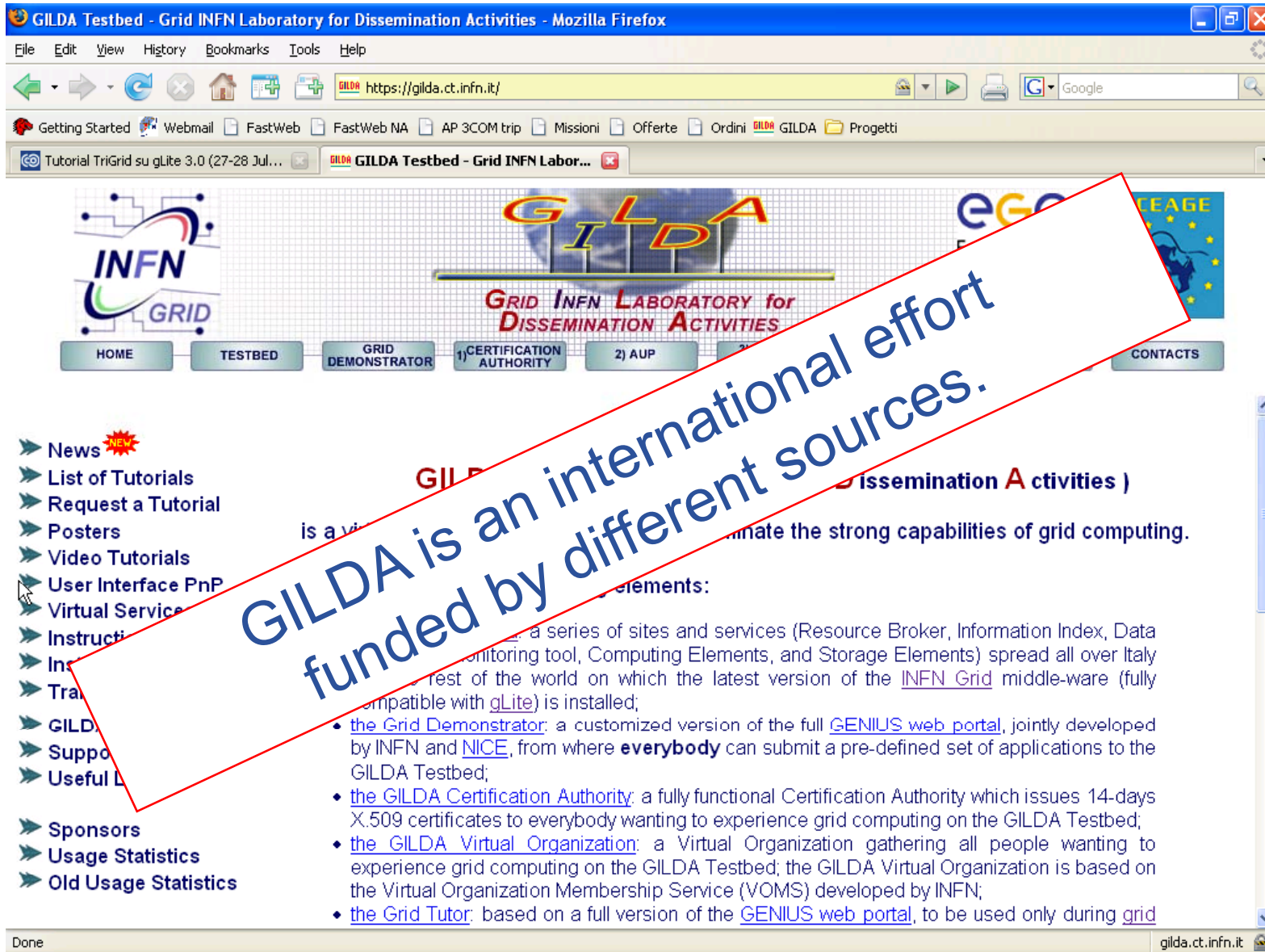
The GLDA training infrastructure

www.eu-egee.org



- **We are using the GILDA testbed this week**
 - The production EGEE / SEE-GRID grid looks like this!
 - Current EGEE production middleware: gLite 3.0.x
 - GILDA is one VO on EGEE → resources for training and application prototyping
- **The practical exercises are to illustrate “how”**
 - Not using typical jobs for running on a grid!
 - But to show how grid services are used, jobs are submitted, output retrieved,...
- **Today we will use the Command-Line Interfaces on the “User Interface” (UI) machine**
 - “UI” will be your interface to the GILDA Grid
 - Where your digital credentials are held
 - Where client tools are installed

- **Why t-infrastructure?**
 - Training is necessary!
 - e-Infrastructure for production
 - t-Infrastructure for training
- **Need guaranteed response for tutorials; limit the vulnerability of production systems**
 - use training grid
 - have a training CA – lightweight authentication
 - able to change middleware to prepare participants for future releases on production system
 - need safe resources for installation training
 - easy entry point for new communities



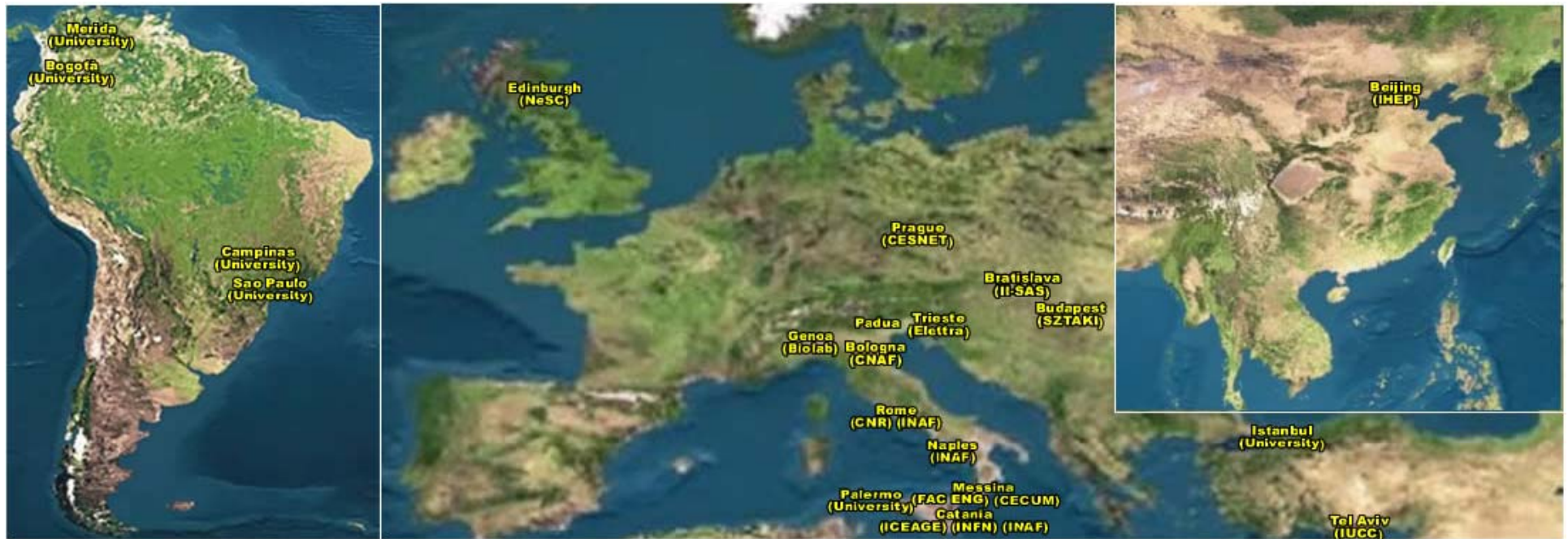
GILDA is an international effort funded by different sources.

GILDA (Grid INFN Laboratory for Dissemination Activities)

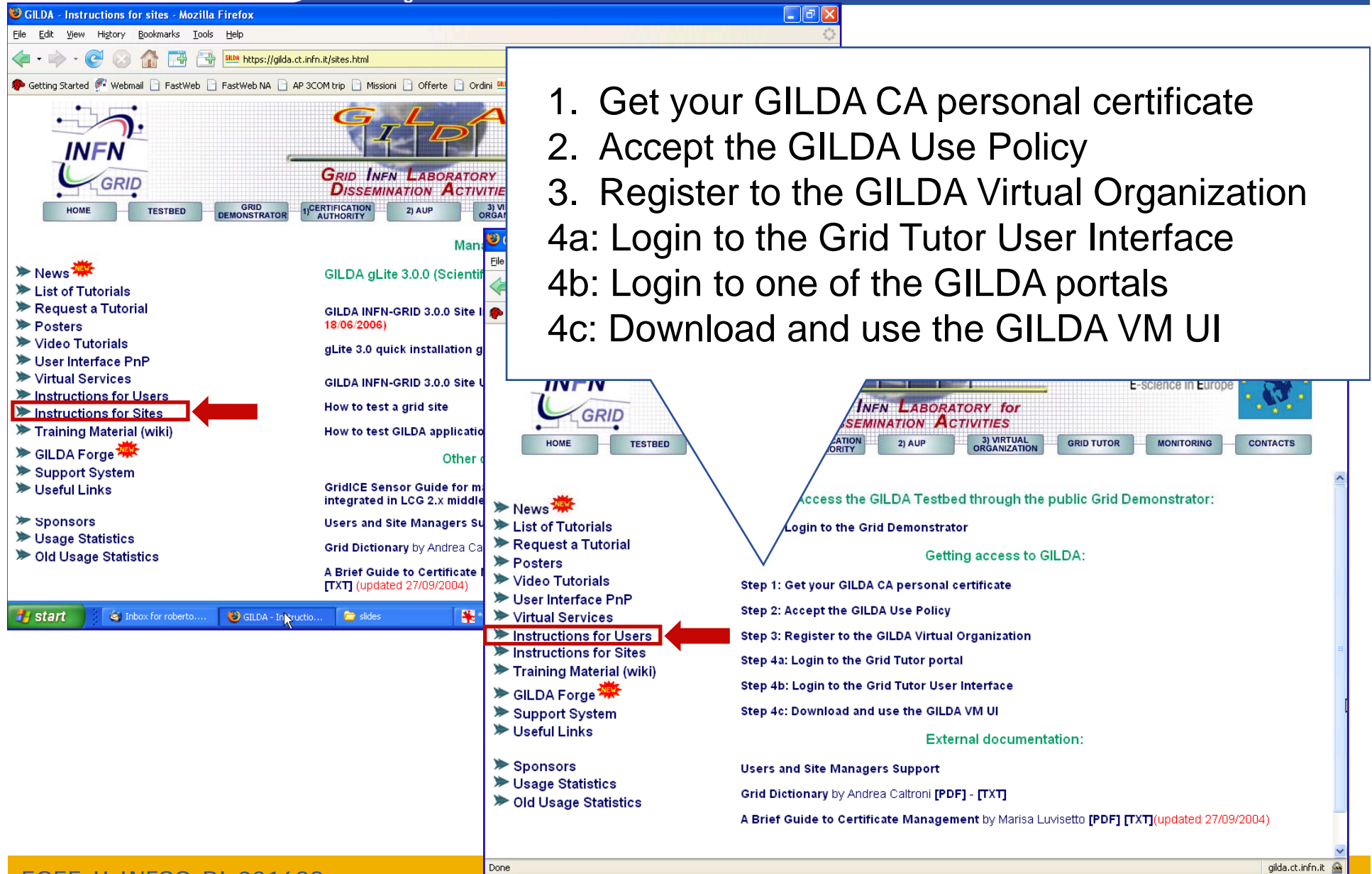
is a virtual infrastructure that demonstrates the strong capabilities of grid computing.

It consists of the following elements:

- [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 GILDA Virtual Organization is based on the Virtual Organization Membership Service (VOMS) developed by INFN;
- [the Grid Tutor](#): based on a full version of the [GENIUS web portal](#), to be used only during grid



~20 sites in 3 continents



1. Get your GILDA CA personal certificate
2. Accept the GILDA Use Policy
3. Register to the GILDA Virtual Organization
- 4a: Login to the Grid Tutor User Interface
- 4b: Login to one of the GILDA portals
- 4c: Download and use the GILDA VM UI

Access the GILDA Testbed through the public Grid Demonstrator:
Login to the Grid Demonstrator

Getting access to GILDA:

Step 1: Get your GILDA CA personal certificate

Step 2: Accept the GILDA Use Policy

Step 3: Register to the GILDA Virtual Organization

Step 4a: Login to the Grid Tutor portal

Step 4b: Login to the Grid Tutor User Interface

Step 4c: Download and use the GILDA VM UI

External documentation:

Users and Site Managers Support

Grid Dictionary by Andrea Caltroni [PDF] - [TXT]

A Brief Guide to Certificate Management by Marisa Luvisetto [PDF] [TXT] (updated 27/09/2004)

Request a GILDA personal certificate - Windows Internet Explorer

https://gilda.ct.infn.it/CA/mgt/restricted/ucert.php

Certificate Error

Google

This website wants to run the following add-on: 'Microsoft Certificate Enrollment Control' from 'Microsoft Corporation'. If you trust the website and the add-on and want to allow it to run, click here...

The GILDA Certification Authority

Request a GILDA personal certificate

WARNING: the procedure requires the application of the security patch you can find at <http://www.microsoft.com/technet/security/bulletin/MS02-048.asp>

- GILDA certificates are valid for two weeks
 - not for a year as normal certificates
- GILDA certificates are renewable
 - like normal certificates

First name and last name:

Account username
(max 8 characters; only not-accented letters and digits are allowed, both lowercase and uppercase):

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:

Submit the request Clear form

Fill out the
No face-to-face



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The GILDA Virtual Organization (<https://voms.ct.infn.it:8443/voms/gilda/>)


VOMS - Welcome to the gilda VO - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://voms.ct.infn.it:8443/voms/gilda/

Getting Started Webmail FastWeb FastWeb NA AP 3COM trip Missioni Offerte Ordini GILDA Progetti

UserTutorials < GILDA < Grid CT WIKI VOMS - Welcome to the gilda VO



Welcome to the gilda VO

VOMS - Virtual Organization Membership Service - Mozilla Firefox

File Edit View History Bookmarks Tools Help

FOR VO USERS

- My membership
- New user registration
- My requests

FOR VO MANAGERS

- Administer the VO
- Handle requests
- Check audit data

CONFIGURATION

- Configuration information
- List all VOs on the grid

VOMS Admin 1.0 Release 1
Copyright © 2005 EGEE on behalf of the EU ES

Done

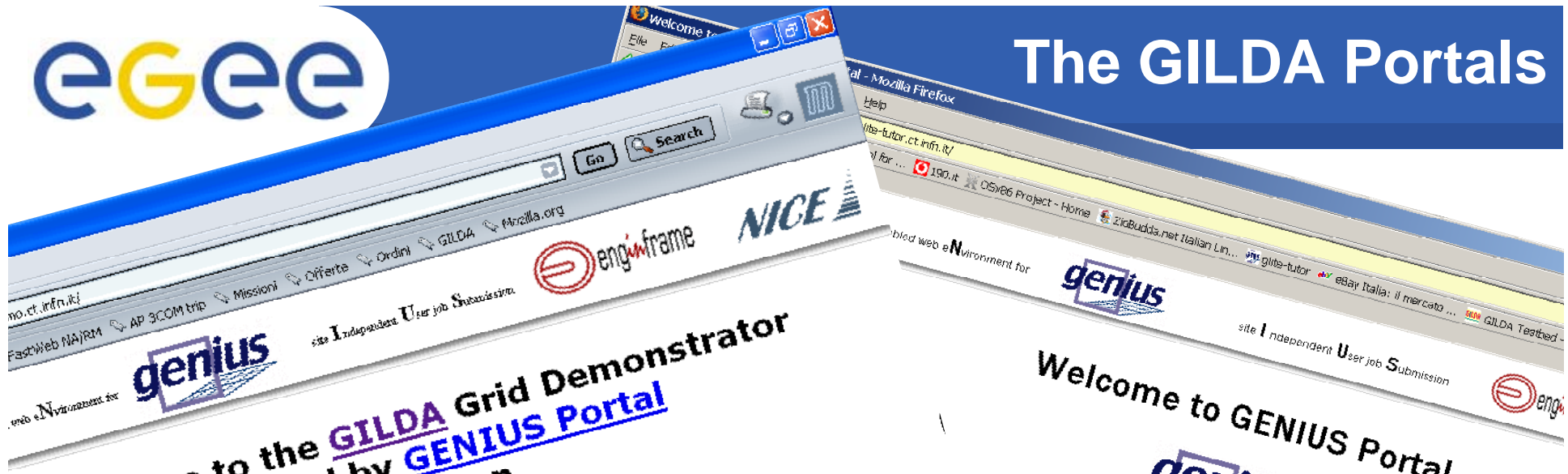
644 people registered in the GILDA VO!
349 “real” users + 285 “generic” users
~30 “trainers”

Join GILDA VO with your one year certificate:
contact the VO manager via the ticketing system

/C=A/OU=AustralianGrid/OU=JKU/OU=GPU/CN=Peter Praxmarer	edit	remove	manage attributes
/C=CH/OU=CERN/OU=GRID/CN=Marc Ozonne 2721	edit	remove	manage attributes
/C=IT/OU=INFN/OU=Personal Certificate/L=Padova/CN=Cristina Aiftimiei	edit	remove	manage attributes
/C=IT/OU=GILDA/OU=Personal Certificate/L=INFN Catania/CN=Gilda Demonstrator 01/Email=gilda-ca@ct.infn.it	edit	remove	manage attributes
/C=IT/OU=GILDA/OU=Personal Certificate/L=INFN Catania/CN=Gilda Demonstrator 02/Email=gilda-ca@ct.infn.it	edit	remove	manage attributes

Done

voms.ct.infn.it:8443



Easy to use. Hide the complexities of the middleware. Extremely useful also for self-pace learning.

Demonstration Application

GridSphere Home

portal

News

06/Mar/2007: The GILDA P-GRADE Portal was upgraded to v2.5. Among other new features, P-GRADE Portal 2.5 gives support for the development and execution of workflow based grid parameter studies. For more information on the 2.5 release please visit portal.p-grade.hu

09/Jan/2006: Portal was upgraded to P-GRADE Portal v.2.4.1. The new version contains several new features and bug fixes. For further information on P-GRADE Portal v.2.4.1 please visit portal.p-grade.hu.

11/Nov/2006: GILDA P-GRADE Portal tutorial is available on-line [here](#). The tutorial demonstrates the capabilities of the Portal and provides exercises that can be easily followed by self-guided learners and participants of P-GRADE Portal training events.

17/Oct/2006: From now on participants of organized grid tutorials have precedence on the GILDA infrastructure with respect to other GILDA users. During organized tutorials GILDA resources are unaccessible for those who are not participants of the events. The list of GILDA training events can be found [here](#). The GILDA P-GRADE Portal is accessible during these trainings too, however, for those who are not participants of the events workflows can only be edited but not executed.

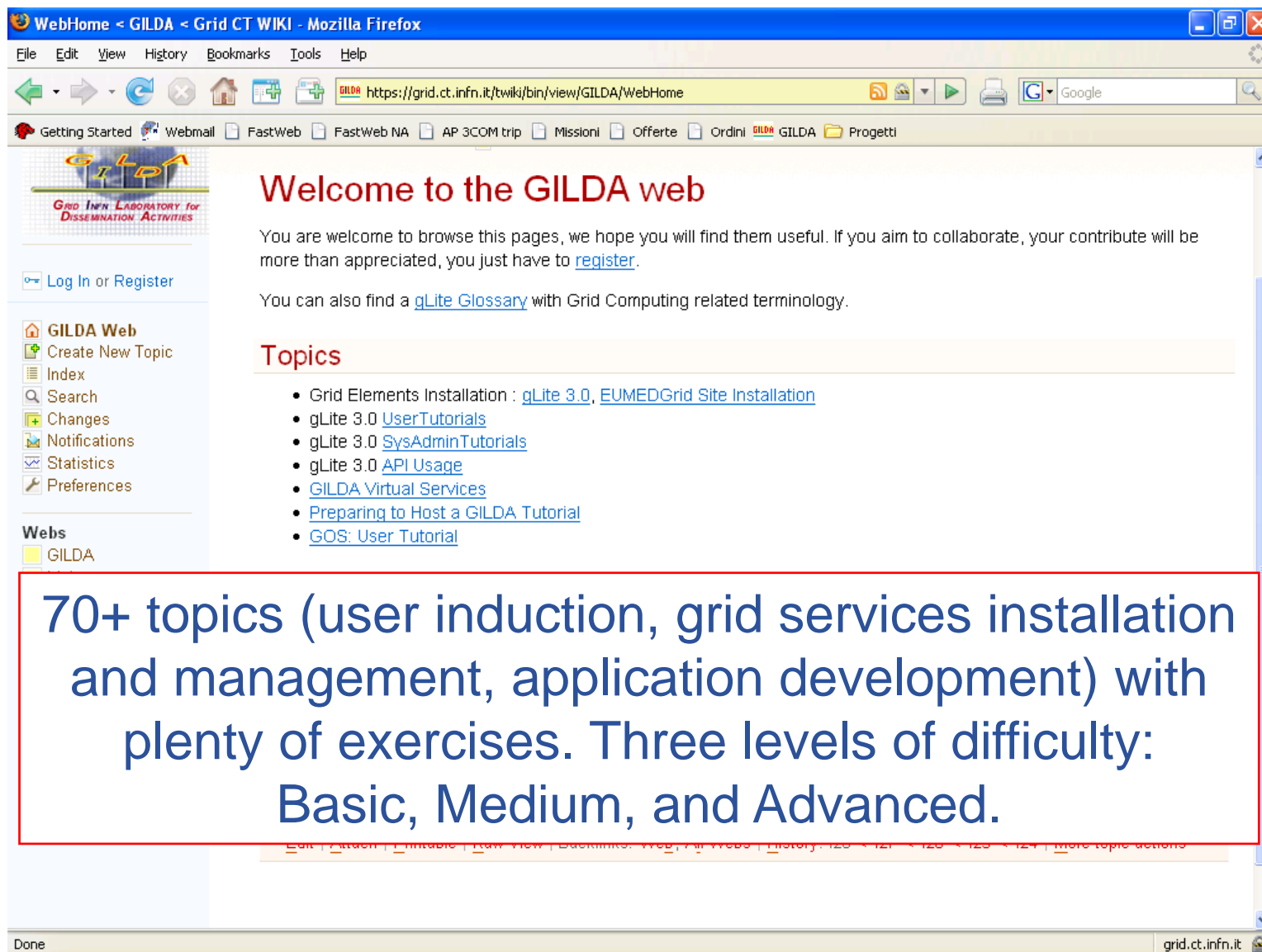
Login

User Name

Password

Remember my login

[Forget your password?](#)



WebHome - GILDA - Grid CT WIKI - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://grid.ct.infn.it/twiki/bin/view/GILDA/WebHome

Getting Started Webmail FastWeb FastWeb NA AP 3COM trip Missioni Offerte Ordini GILDA GILDA Progetti

Welcome to the GILDA web

You are welcome to browse this pages, we hope you will find them useful. If you aim to collaborate, your contribute will be more than appreciated, you just have to [register](#).

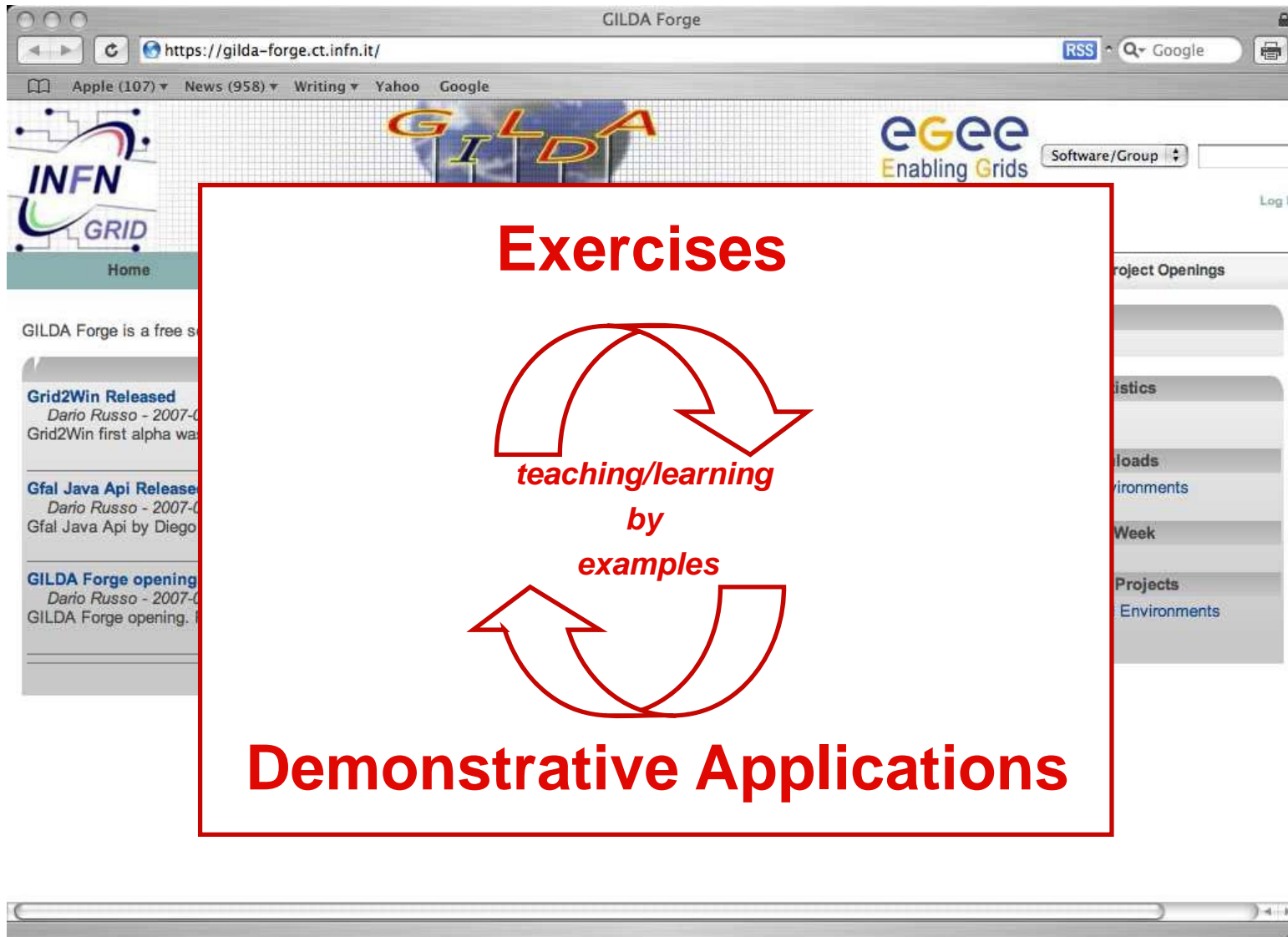
You can also find a [gLite Glossary](#) with Grid Computing related terminology.

Topics

- Grid Elements Installation : [gLite 3.0](#), [EUMEDGrid Site Installation](#)
- gLite 3.0 [UserTutorials](#)
- gLite 3.0 [SysAdminTutorials](#)
- gLite 3.0 [API Usage](#)
- [GILDA Virtual Services](#)
- [Preparing to Host a GILDA Tutorial](#)
- [GOS: User Tutorial](#)

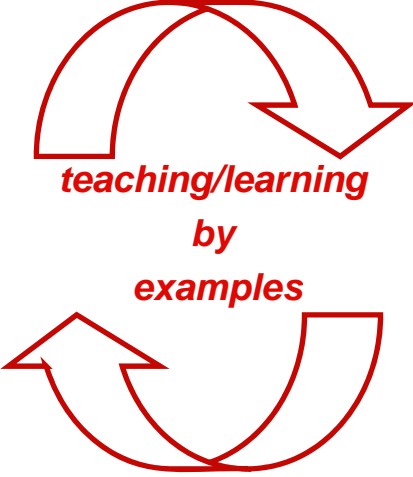
70+ topics (user induction, grid services installation and management, application development) with plenty of exercises. Three levels of difficulty: Basic, Medium, and Advanced.

Done grid.ct.infn.it



The screenshot shows the GILDA Forge website interface. A red-bordered box is overlaid on the page, containing the following text and diagram:

Exercises



*teaching/learning
by
examples*

Demonstrative Applications

The background website shows the GILDA Forge logo, the EGEE logo, and a navigation menu with items like 'Home', 'Grid2Win Released', 'Gfal Java Api Release', and 'GILDA Forge opening'.



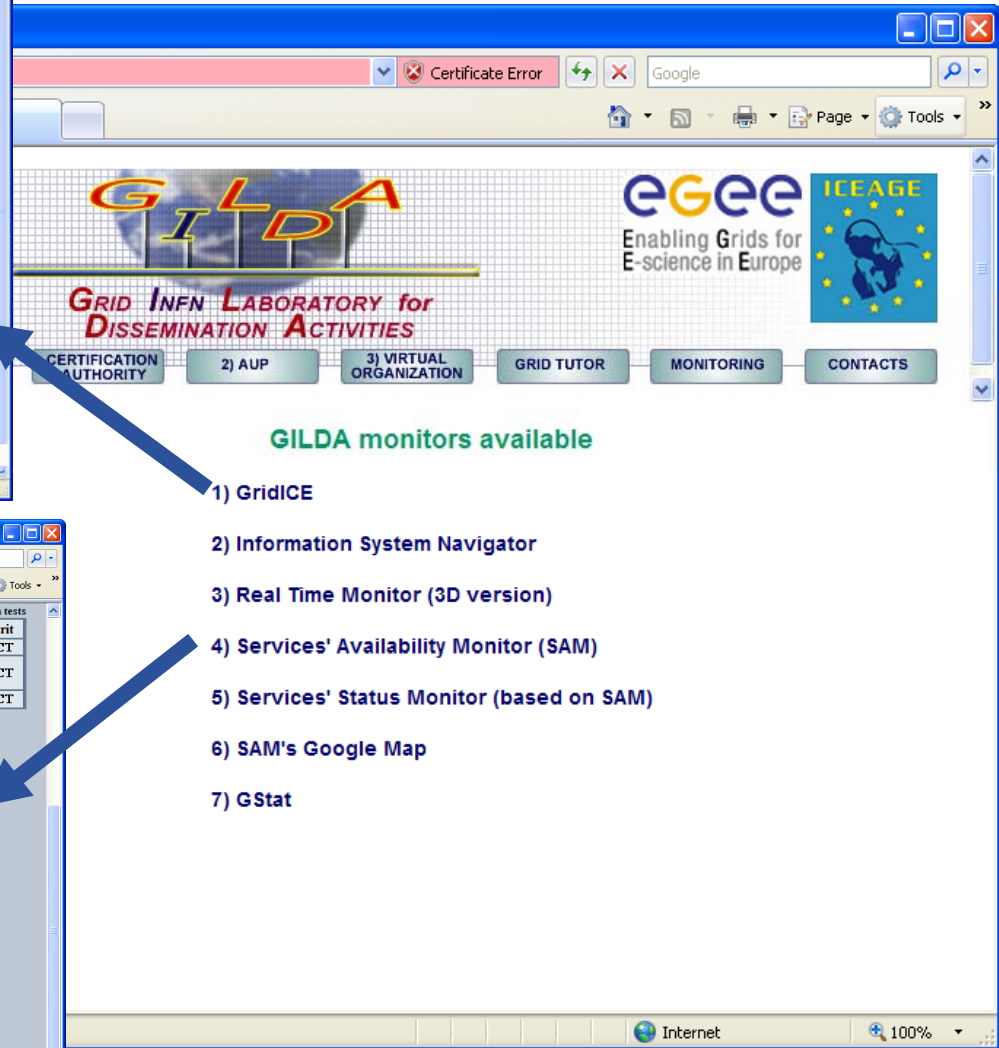
Enabling Grids for E-science

The GILDA Support System

(<https://gilda-support.ct.infn.it>)

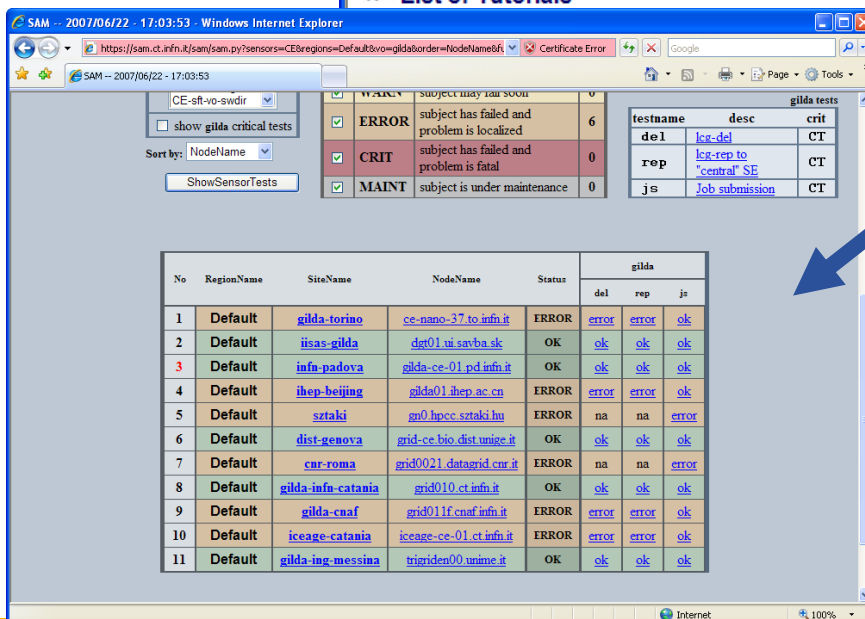
More than 200 tickets in less than 1 year.
More than 90% solved in a couple of days.

The screenshot shows the GILDA Support System interface in Mozilla Firefox. The browser address bar shows <http://gilda-support.ct.infn.it/>. The page header includes the INFN GRID logo, the GILDA logo (GRID INFN LABORATORY for DISSEMINATION ACTIVITIES), and the EGEE logo (Enabling Grids for E-science). The main content area is titled "GILDA SUPPORT - Ticket Management" and includes a "Login" section with fields for Username (RobertoB) and Password, and a "Create Ticket" form. The "Create Ticket" form has fields for Username (RobertoB), Assign To (Site INFN-CATANIA), Priority, Subject (Data Management), and Description. A navigation menu on the left includes "View Account", "Edit Account", "Notifications", "Logout", "Inbox", "Who's Online", and "Ticket Management".



GILDA monitors available

- 1) GridICE
- 2) Information System Navigator
- 3) Real Time Monitor (3D version)
- 4) Services' Availability Monitor (SAM)
- 5) Services' Status Monitor (based on SAM)
- 6) SAM's Google Map
- 7) GStat



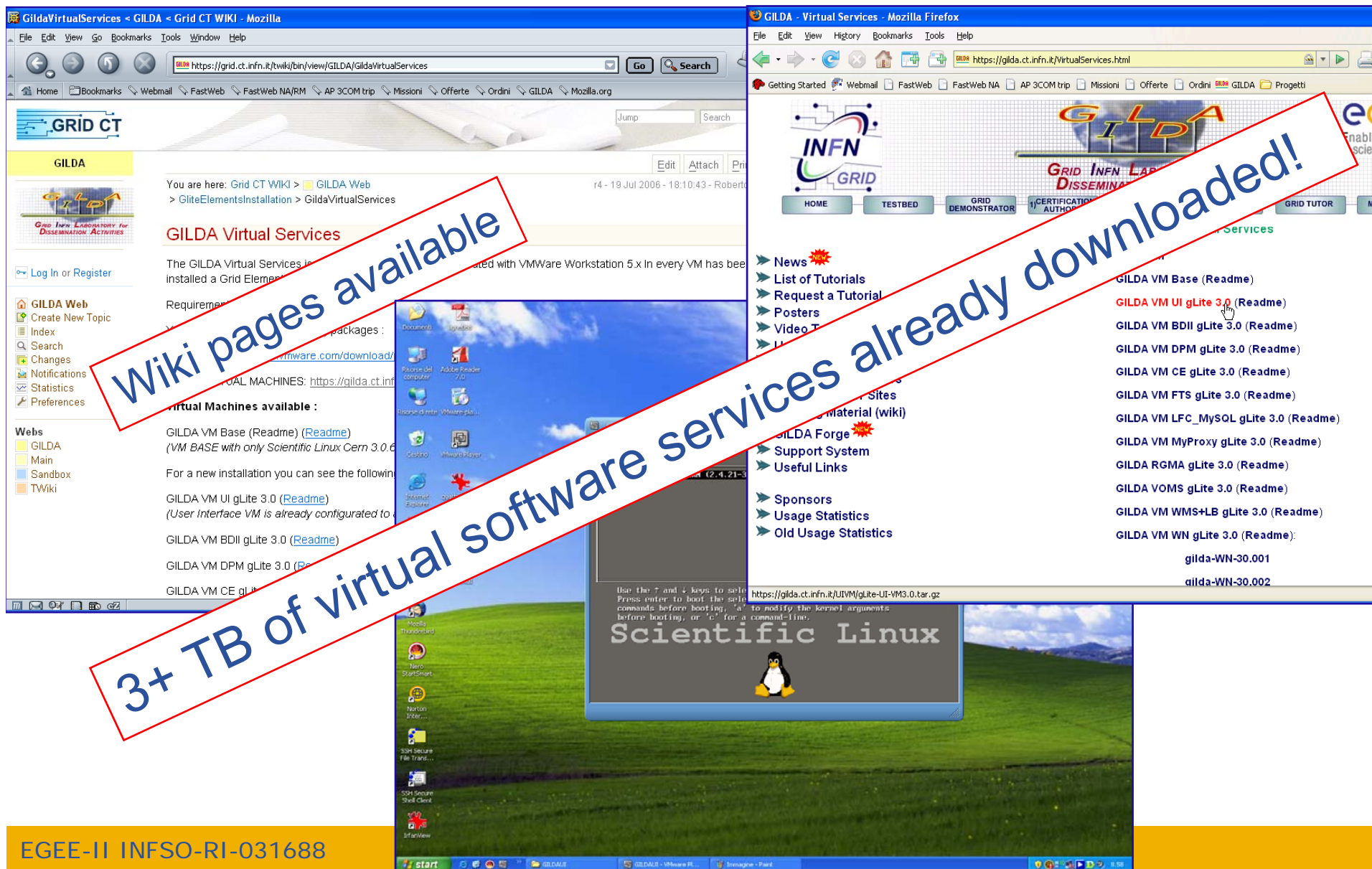
- **Tutors obtained certificates and private keys from GILDA CA:**
 - `usercert.pem` → certificate
 - `userkey.pem` → private key
- **Tutors registered the certificates at GILDA VO**
- **Certificates and keys are available on the GILDA user interface machine: `glite-tutor.ct.infn.it`**
- **`ls -l ~/.globus`**

```

-rw-r--r--  1 budapest23 users 1119 May 30 05:48 usercert.pem
-r-----  1 budapest23 users  963 May 30 05:48 userkey.pem
    
```

- **Tutorials starts at this point...**

- GILDA is provided by some 20 organisations for training events.
- You usually sign a commitment before using a grid - to make appropriate use of the resources that other organisations have opened to you
- Trust is the basis of Grid computing.
- You are trusted to be responsible in your use of GILDA.



The image shows a composite of two screenshots. The top-left screenshot is a Mozilla browser window displaying the GILDA Virtual Services page on the Grid CT Wiki. The top-right screenshot is a Mozilla browser window displaying the GILDA Virtual Services main page. The bottom portion of the image shows a virtual machine desktop environment with a Scientific Linux logo and a penguin icon. A large red diagonal banner is overlaid across the center of the image.

Wiki pages available

3+ TB of virtual software services already downloaded!

- News
- List of Tutorials
- Request a Tutorial
- Posters
- Video Tutorials
- Help
- Support System
- Useful Links
- Sponsors
- Usage Statistics
- Old Usage Statistics

Virtual Machines available :

- GILDA VM Base (Readme) ([Readme](#))
- GILDA VM UI gLite 3.0 (Readme) ([Readme](#))
- GILDA VM BDII gLite 3.0 (Readme) ([Readme](#))
- GILDA VM DPM gLite 3.0 (Readme) ([Readme](#))
- GILDA VM CE gLite 3.0 (Readme) ([Readme](#))
- GILDA VM FTS gLite 3.0 (Readme) ([Readme](#))
- GILDA VM LFC_MySQL gLite 3.0 (Readme) ([Readme](#))
- GILDA VM MyProxy gLite 3.0 (Readme) ([Readme](#))
- GILDA RGMA gLite 3.0 (Readme) ([Readme](#))
- GILDA VOMS gLite 3.0 (Readme) ([Readme](#))
- GILDA VM WMS+LB gLite 3.0 (Readme) ([Readme](#))
- GILDA VM WN gLite 3.0 (Readme) ([Readme](#))

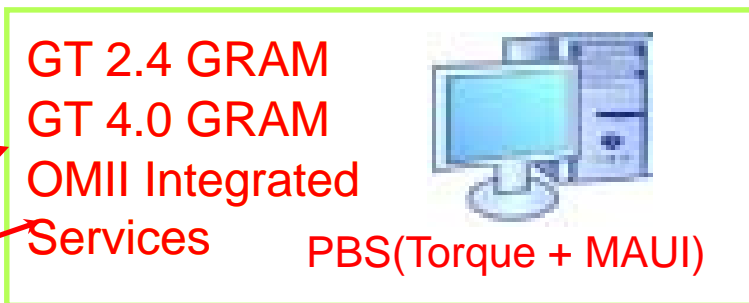
gilda-WN-30.001
gilda-WN-30.002

- In the context of ICEAGE project the GILDA Team has carried out an important study about the co-existence of several middlewares on the same physical computing and storage resources.
- Results:
 - Super User Interface: a machine (real or virtual) with a gLite User Interface, a Globus Toolkit 4 (GT4) client, and an OMII-UK client on board.
 - Super Computing Element: the same Torque/MAUI farm can execute jobs coming from gLite, GT4, and OMII-UK.
 - The same GILDA CA certificates can be used with all the 3 different middlewares.

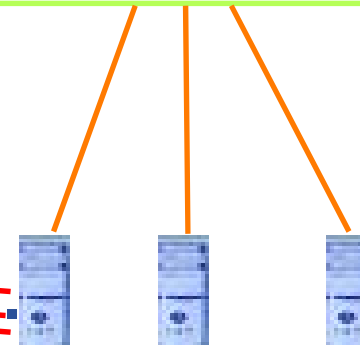
gLite Resource Broker
glite-rb3.ct.infn.it



iceage-ce-01.ct.infn.it



User Interface
bonnie.trigrid.it





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Thank you!

Questions?

www.eu-egee.org



- **Go to the agenda page for this event as follows:**
 - Go to <http://www.egee.hu/grid07>
 - Click on “Training materials”

- Tutors will assign you a user number
- Then use **putty** or **ssh** to connect to **glite-tutor.ct.infn.it**
 - usernames --> **budapest01....budapest30**
 - passwords --> **GridBUD01....GridBUD30**
 - Certificate passphrase: **BUDAPEST**
 - **ALWAYS USE THE SAME ACCOUNT DURING ALL OF THIS EVENT – REMEMBER YOUR NUMBER!!**