GILDA: a t-Infrastructure for Dissemination and Training

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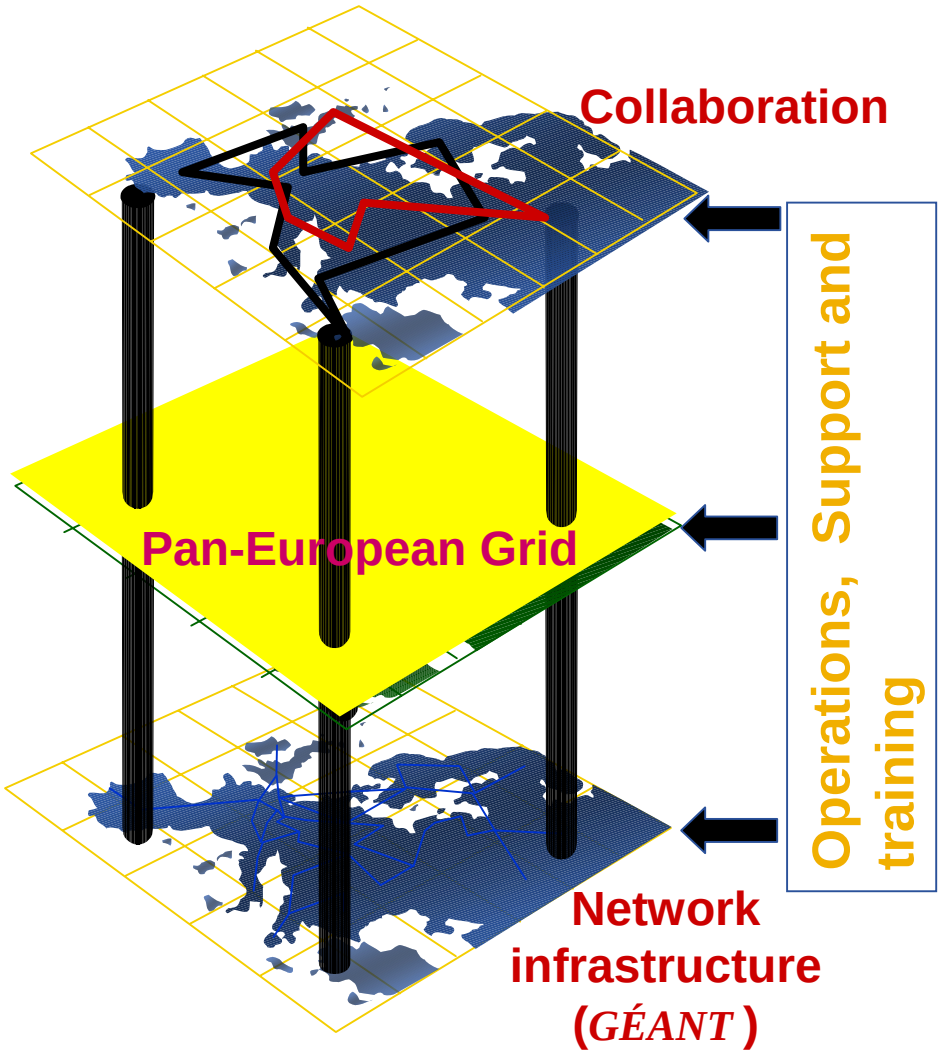
Outline

- **Introduction**
- **The GILDA t-Infrastructure**
  - services
  - tools
  - applications
- **Summary and conclusions**

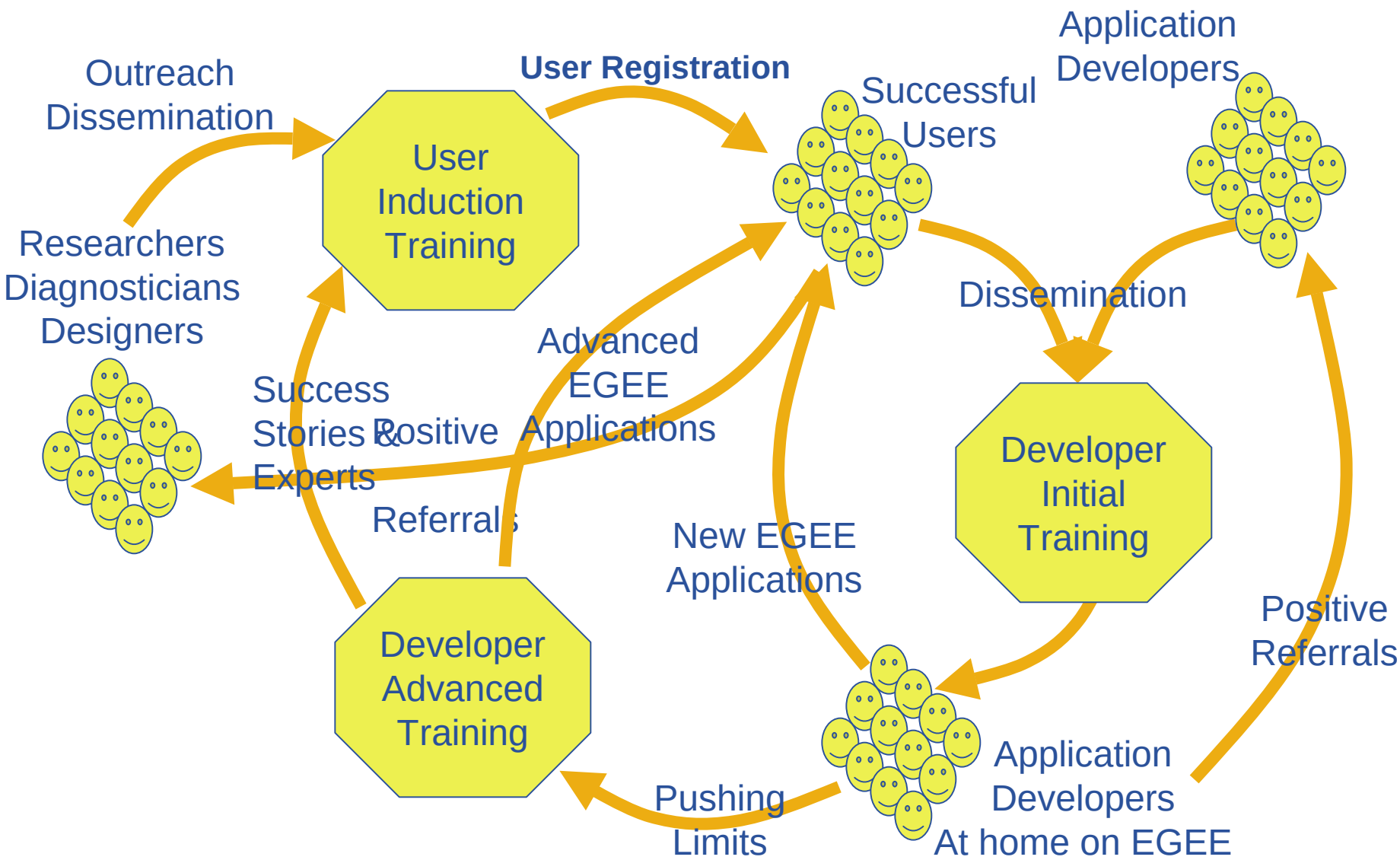
EGEE: Enabling Grids for E-sciencE

Build a large-scale production grid service to:

- **Underpin European science and technology**
- **Link with and build on national, regional and international initiatives**
- **Foster international cooperation both in the creation and the use of the e-infrastructure**



EGEE Virtuous Cycle



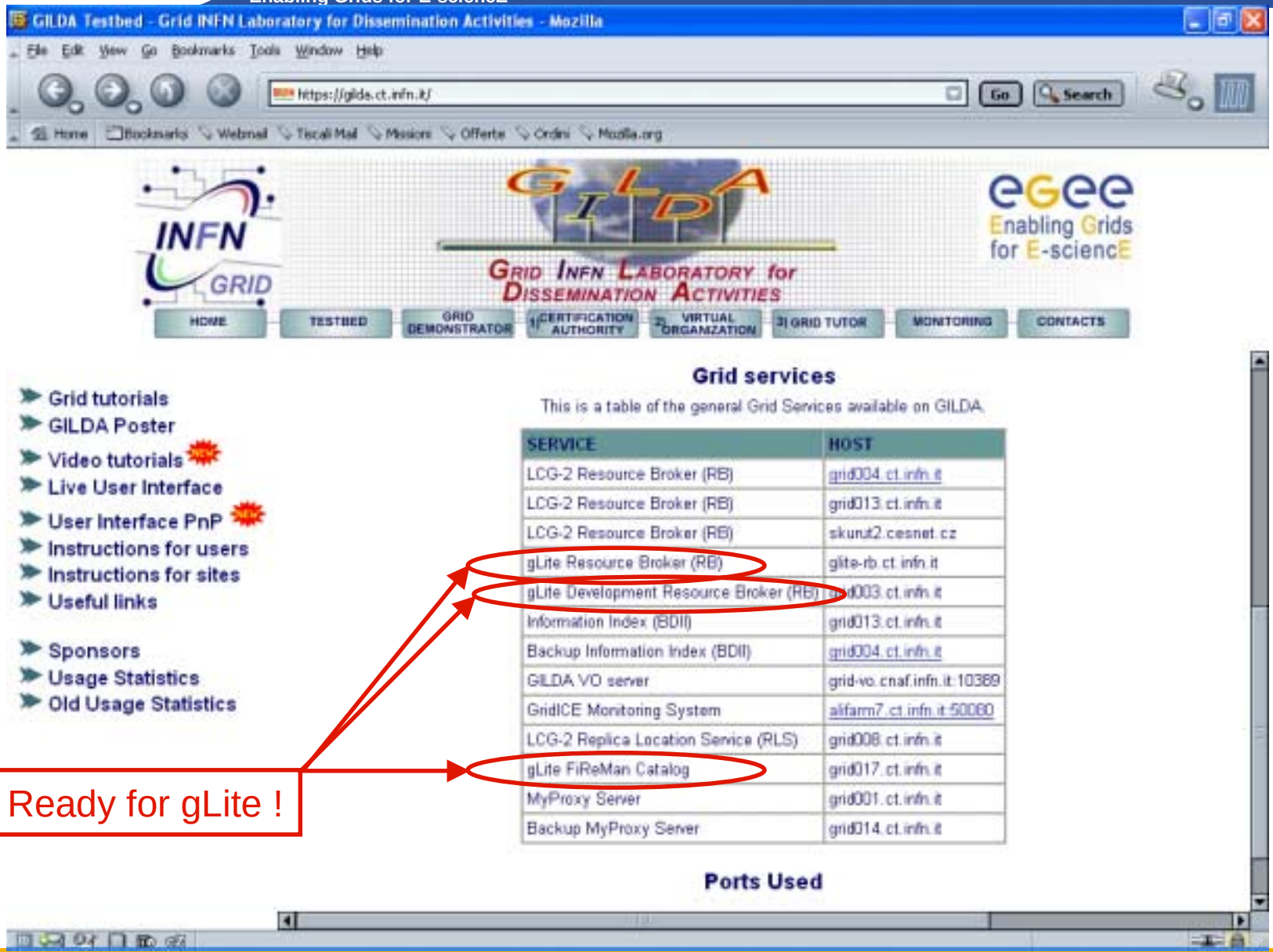
The GILDA project (https://gilda.ct.infn.it)

The GILDA Test-bed (https://gilda.ct.infn.it/testbed.html)

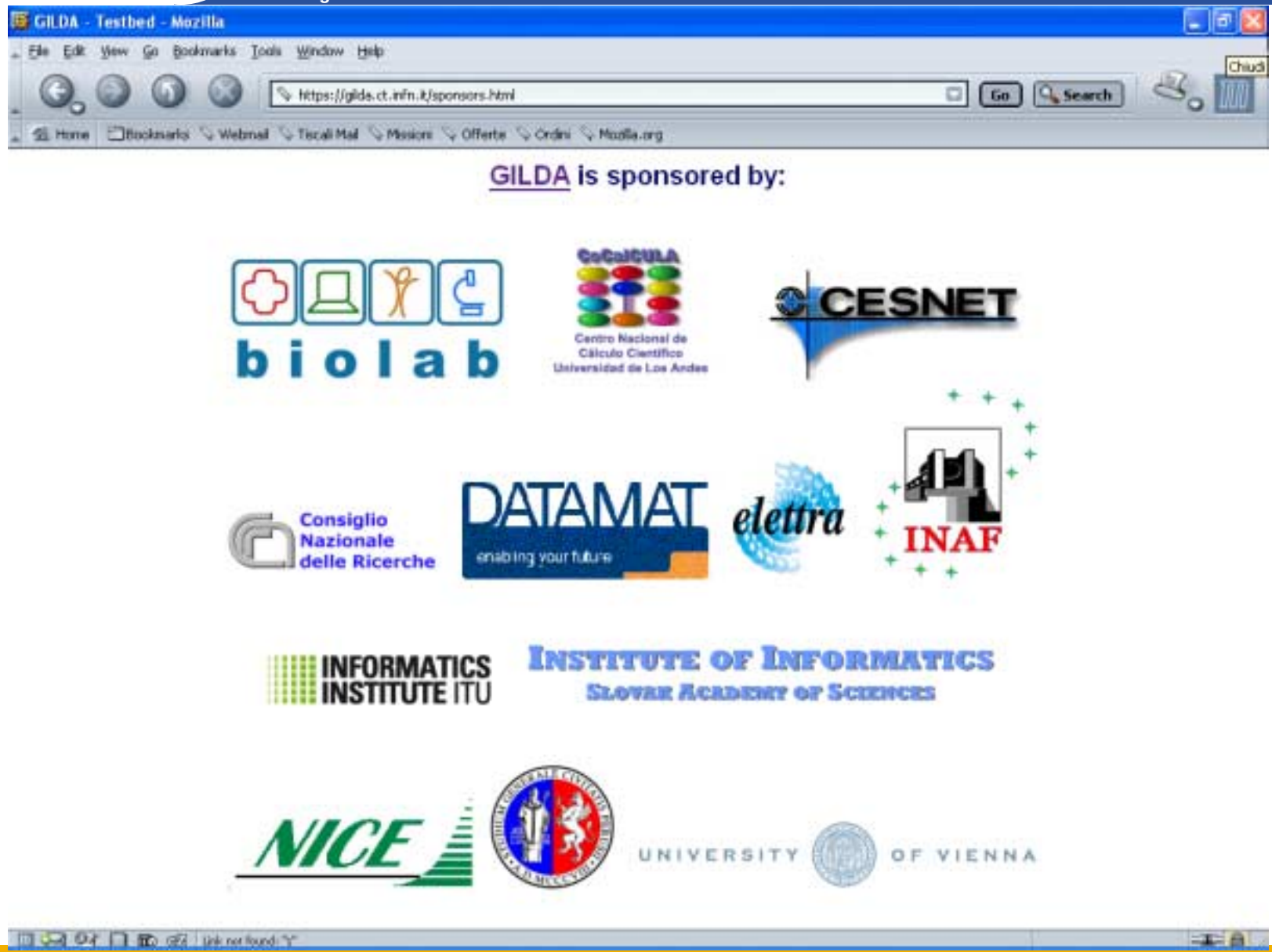
15 sites in 3 continents !

all of them GEANT sites

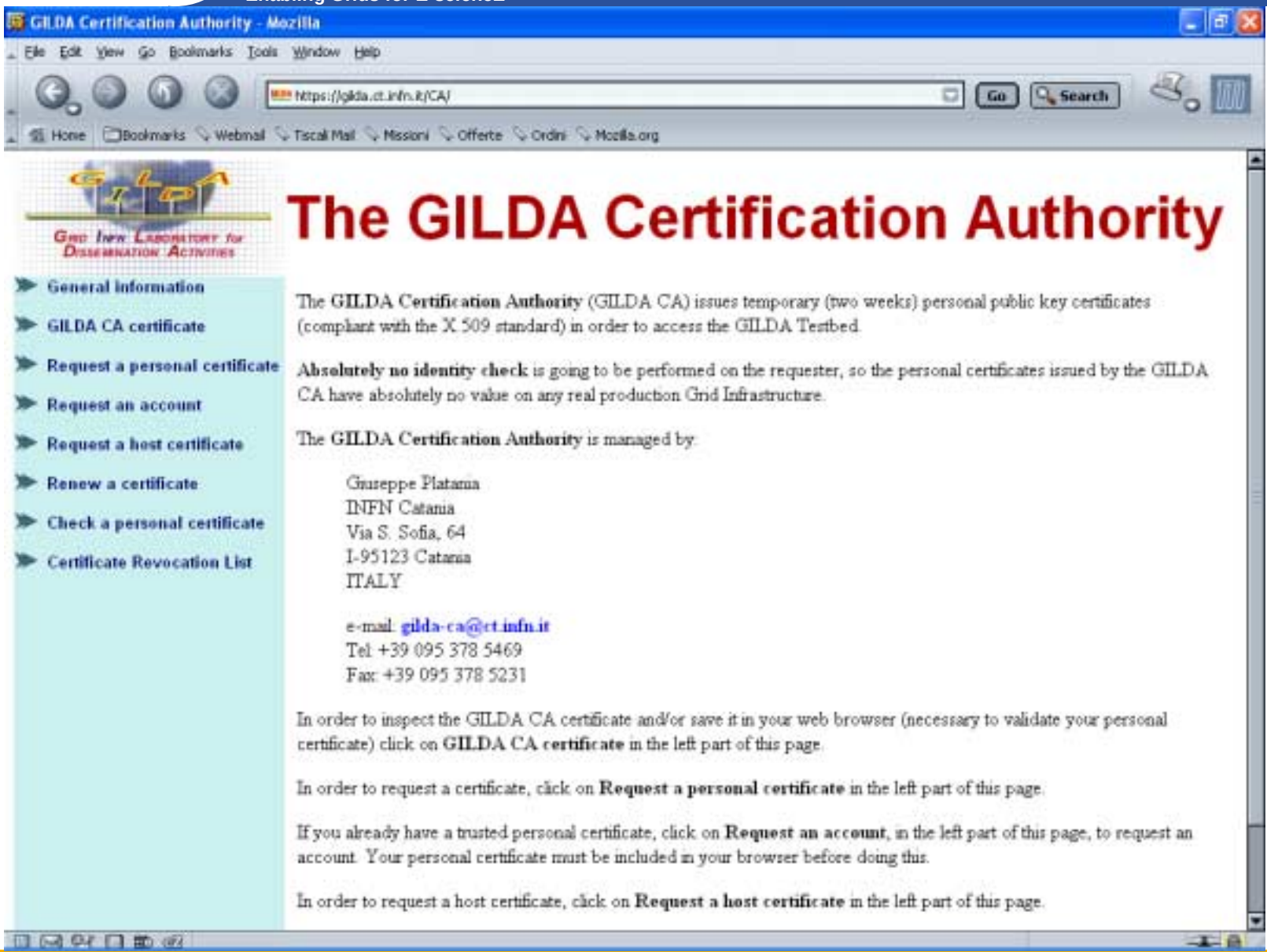
The GILDA Services (https://gilda.ct.infn.it/testbed.html)



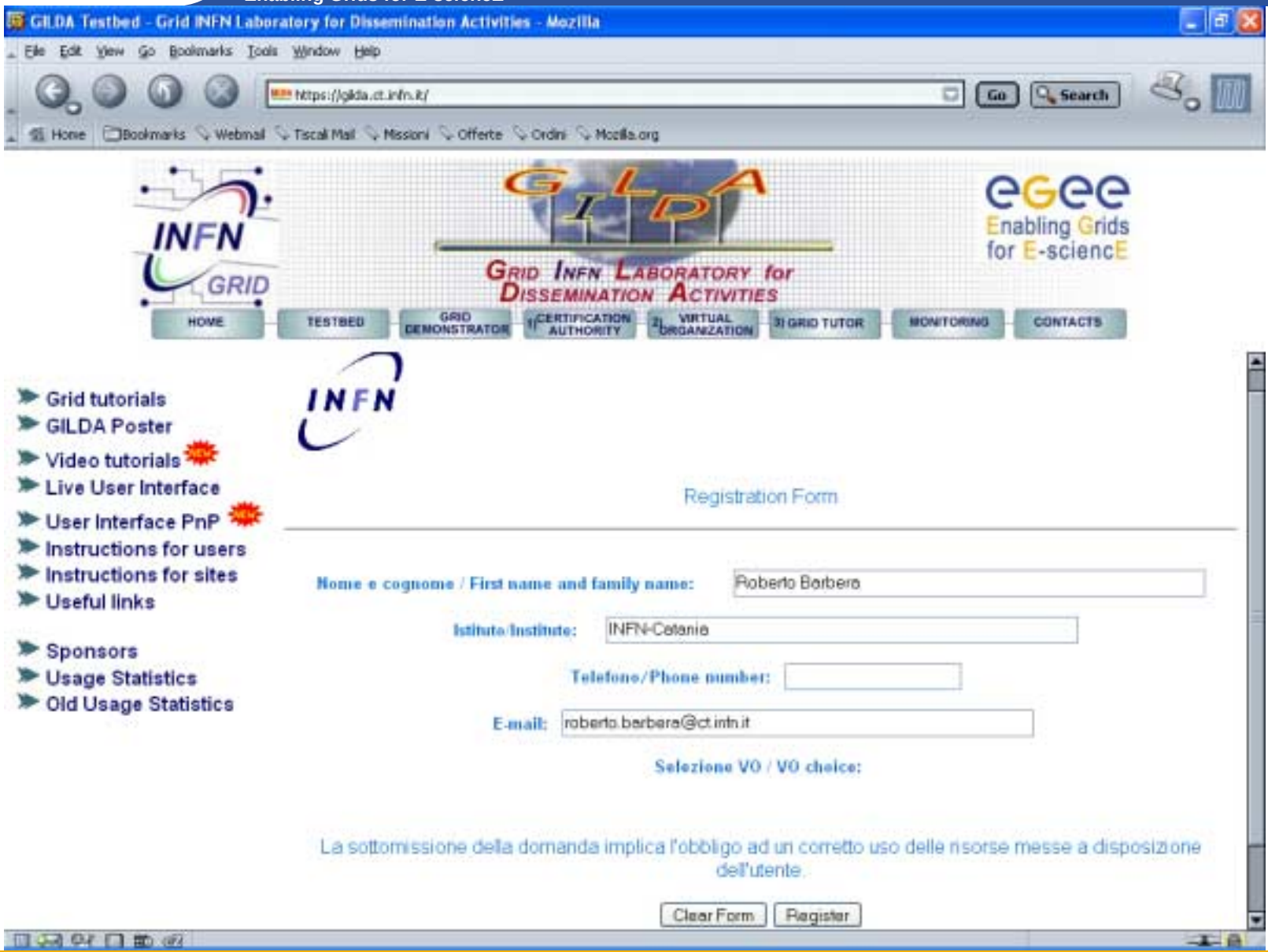
The GILDA Sponsors (https://gilda.ct.infn.it/sponsors.html)



The GILDA Certification Authority (https://gilda.ct.infn.it/CA)

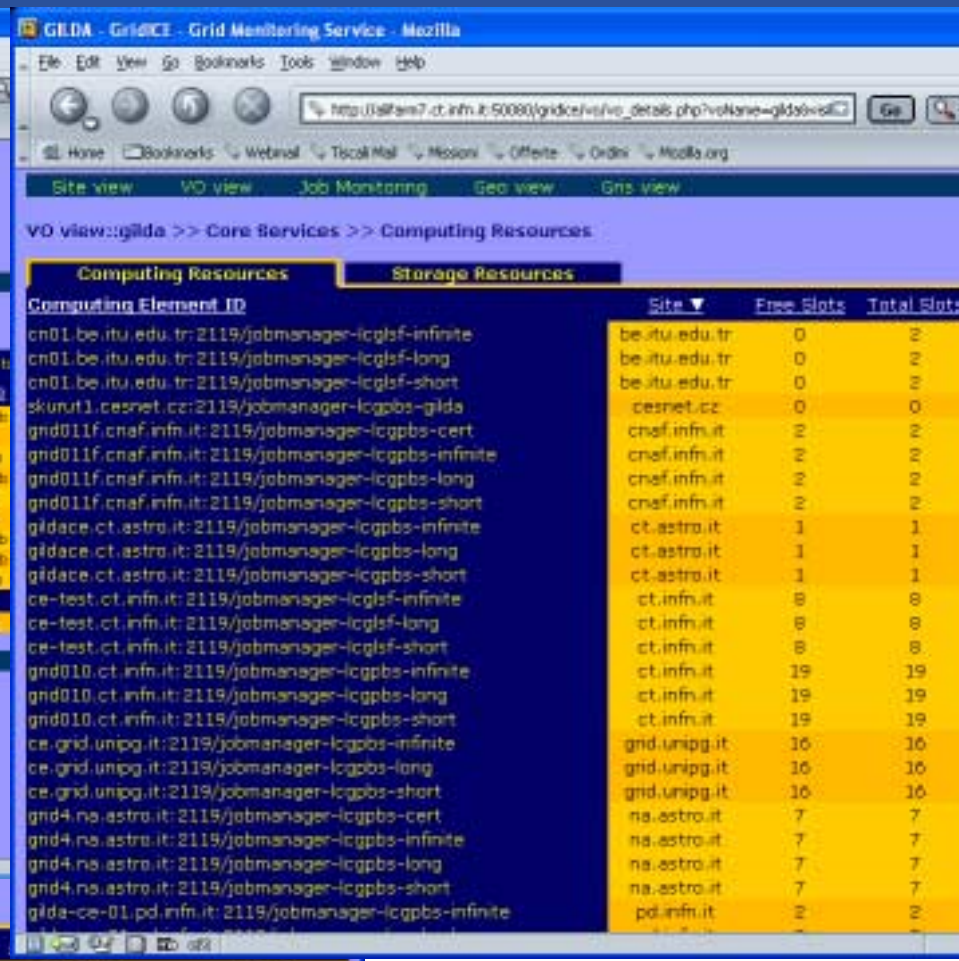


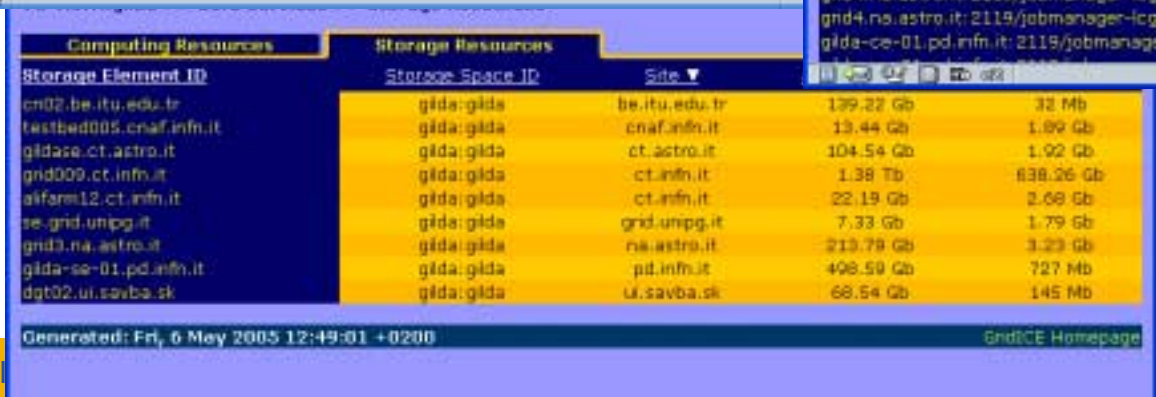
The GILDA Virtual Organization



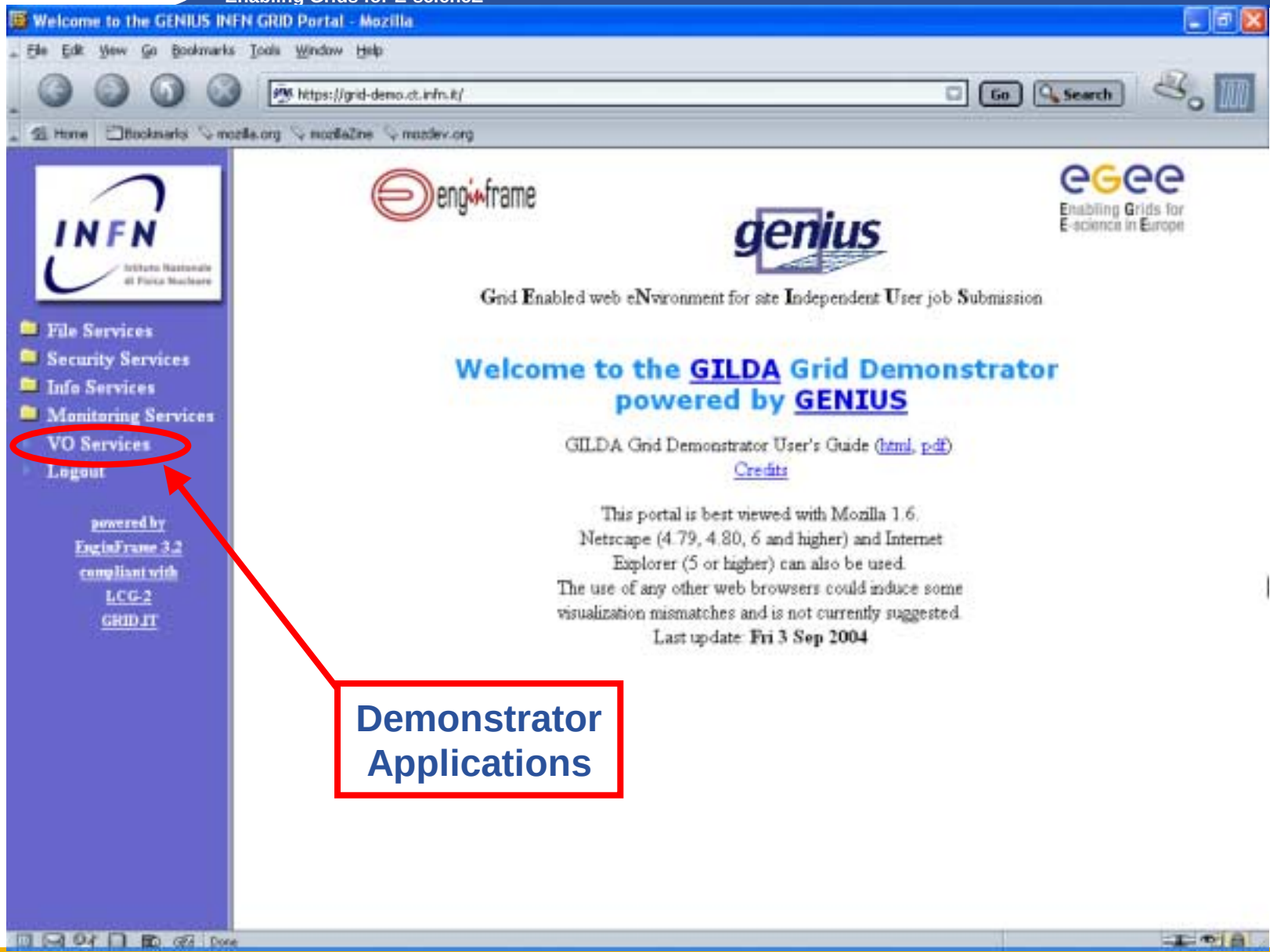
The GILDA Monitoring System (1/3) (http://alifarm7.ct.infn.it:50080/gridice)

Enabling Grids for E-sciencE

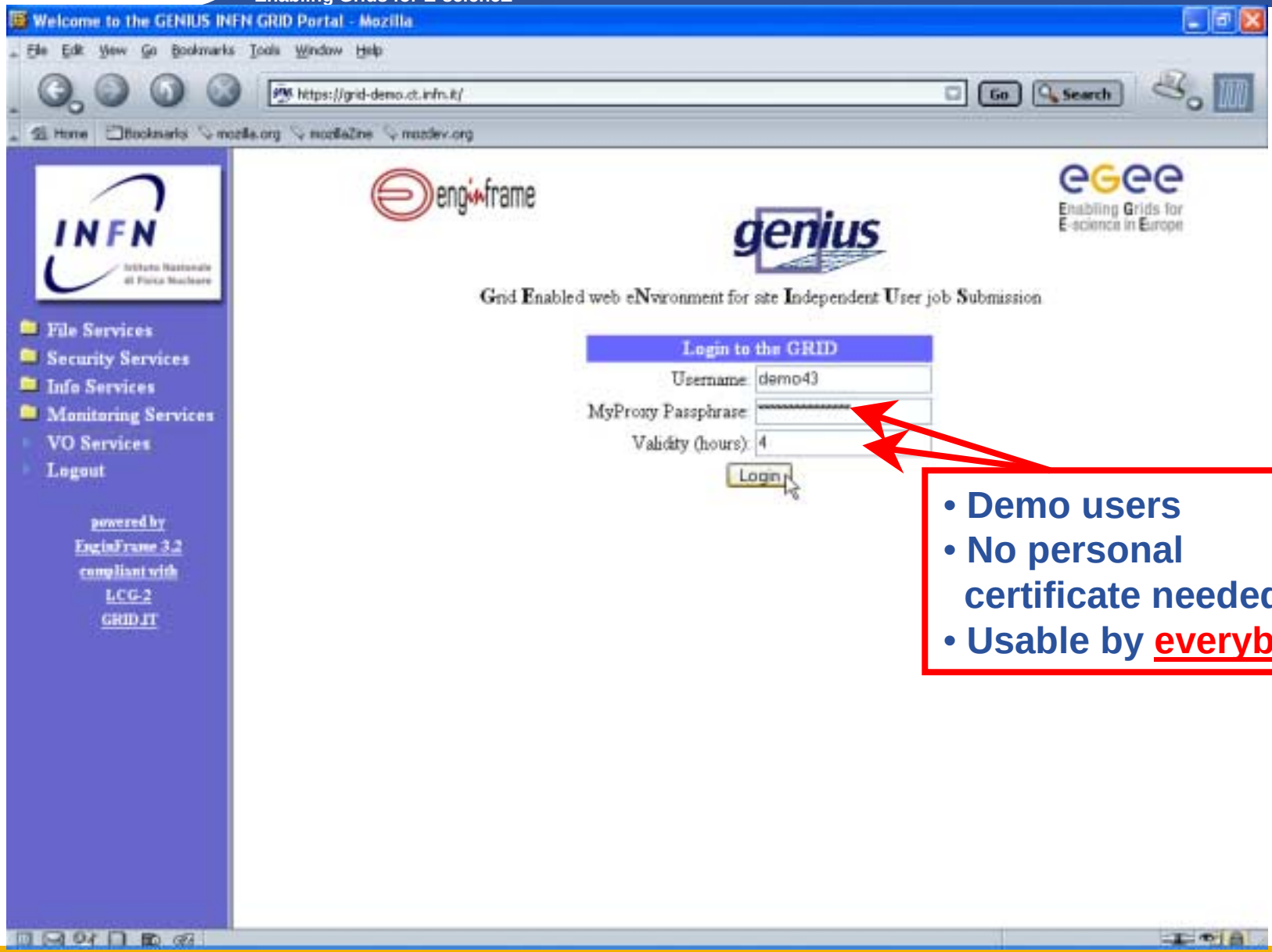




The Grid Demonstrator (1/2) (https://grid-demo.ct.infn.it)

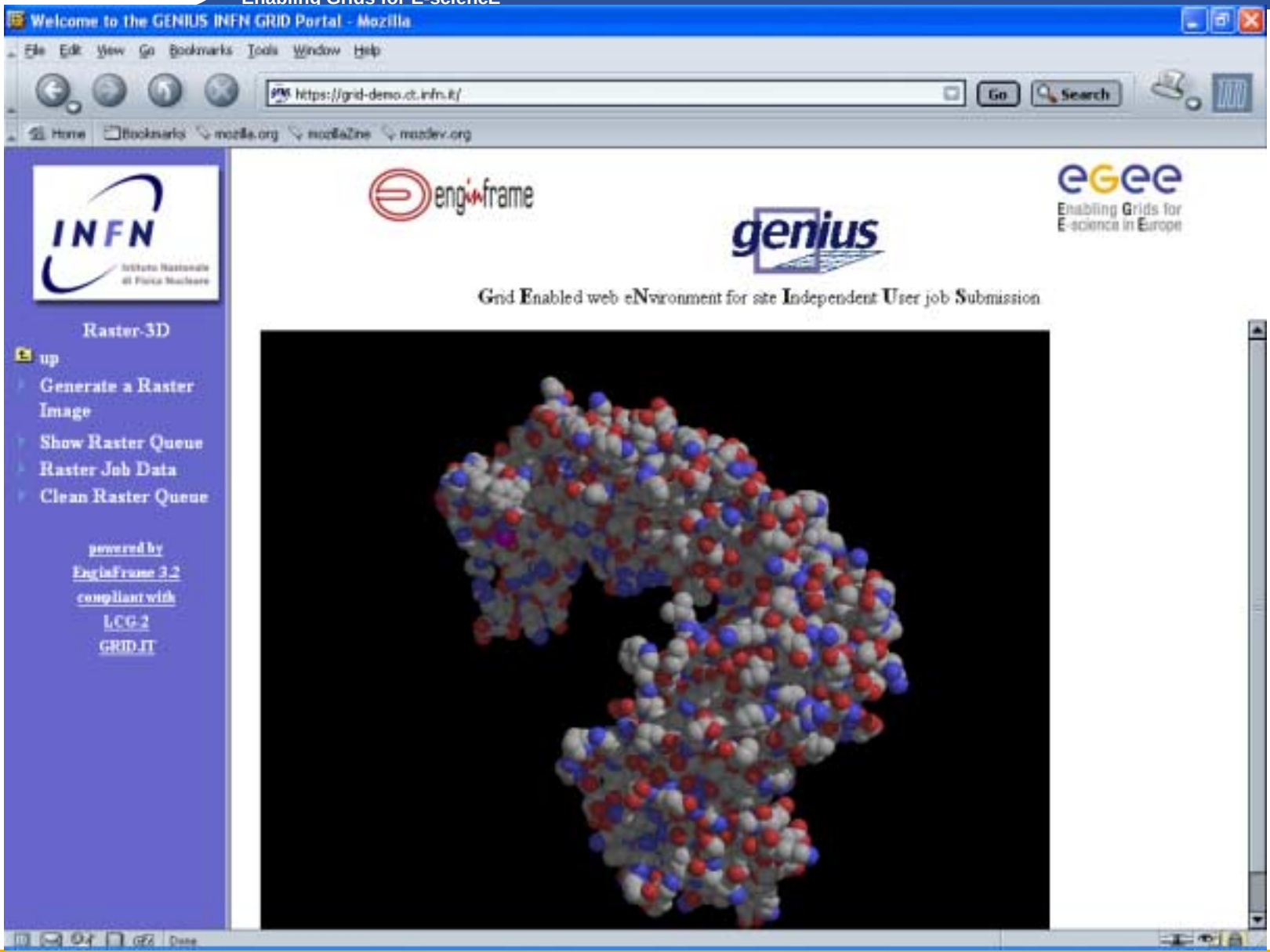


The Grid Demonstrator (2/2) (https://grid-demo.ct.infn.it)

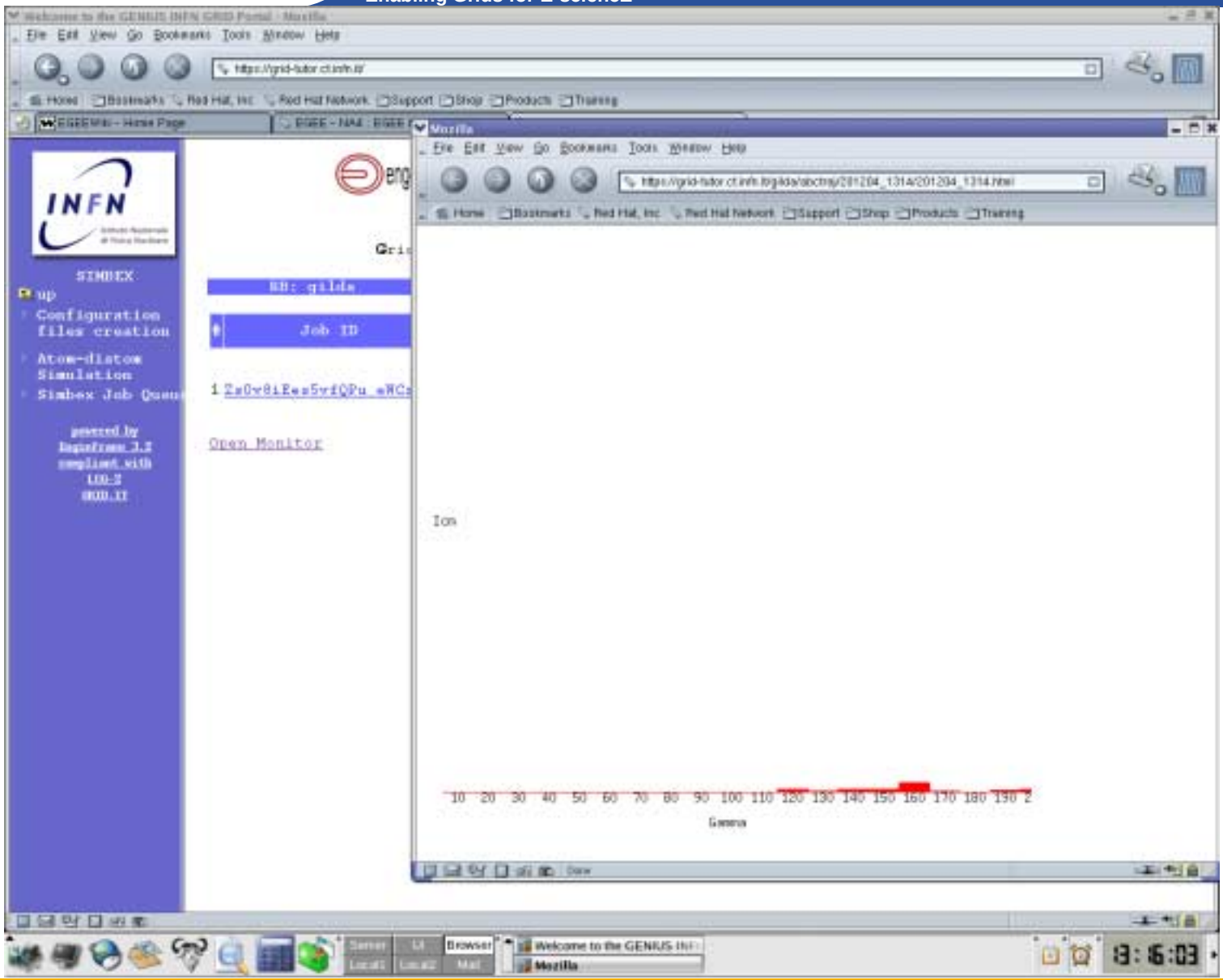


- Demo users
- No personal certificate needed
- Usable by **everybody!**

Raster-3D example

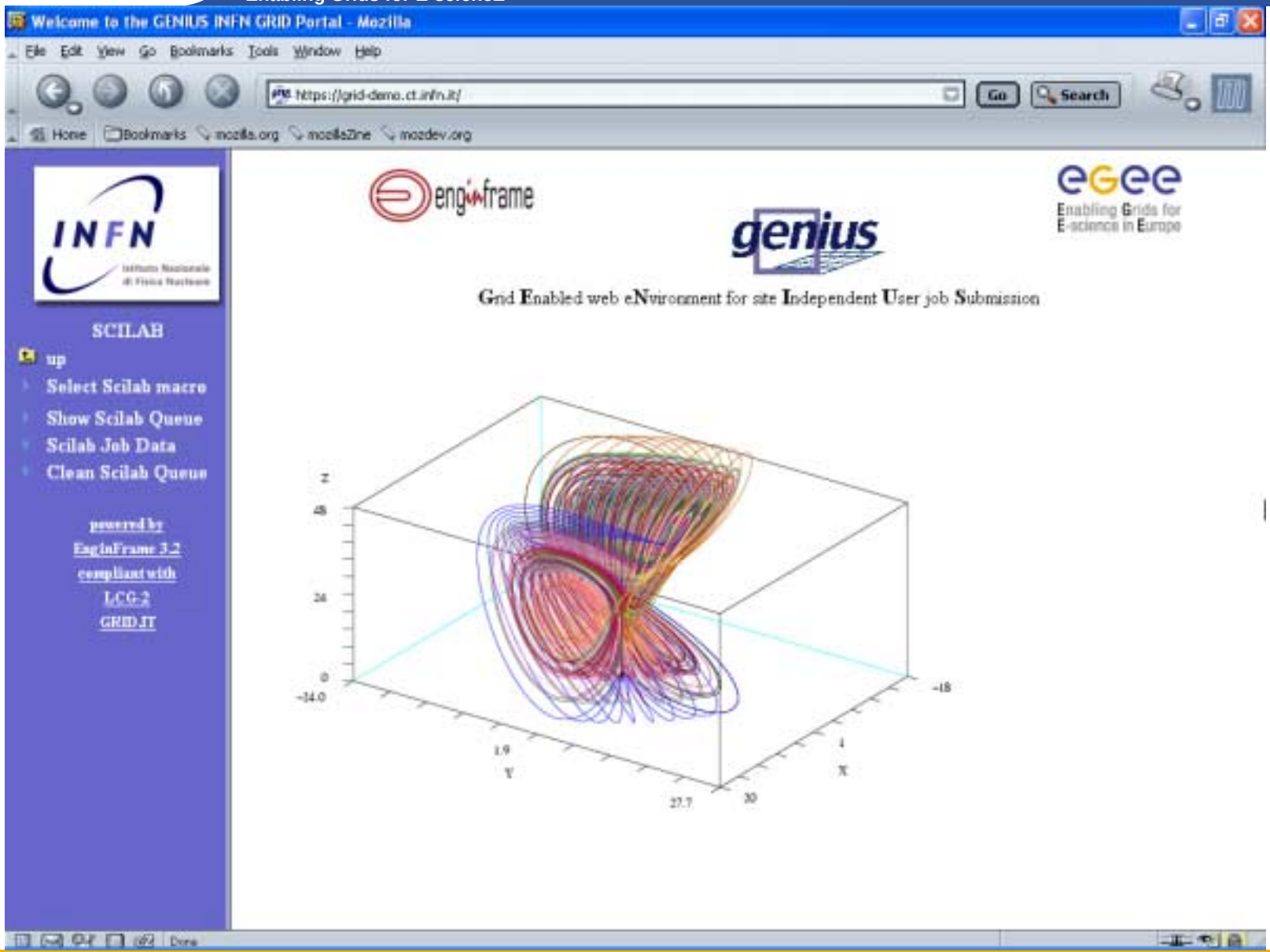


GEMS example



Interactive MPI jobs !

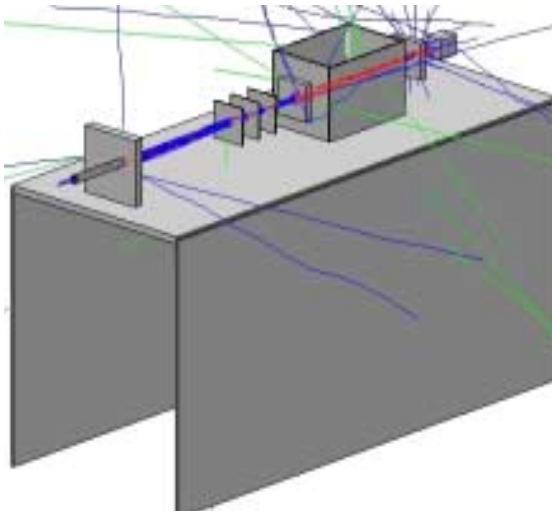
SciLab example



hadronTherapy example

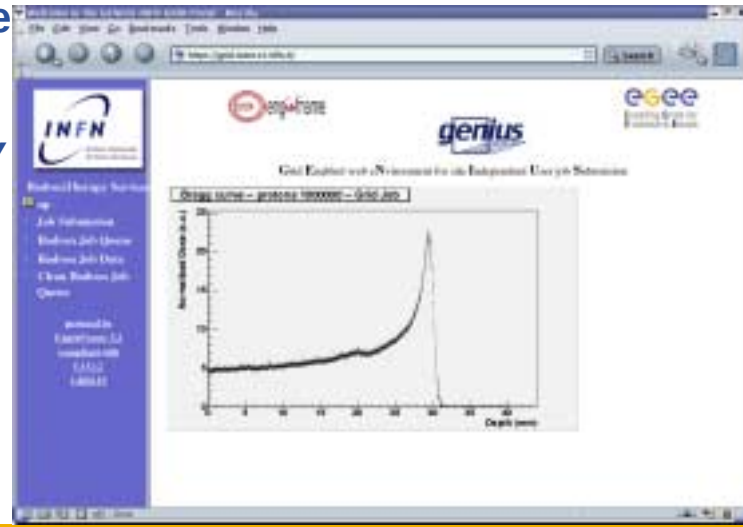
CATANA beam line in reality

hadronTherapy in GENIUS

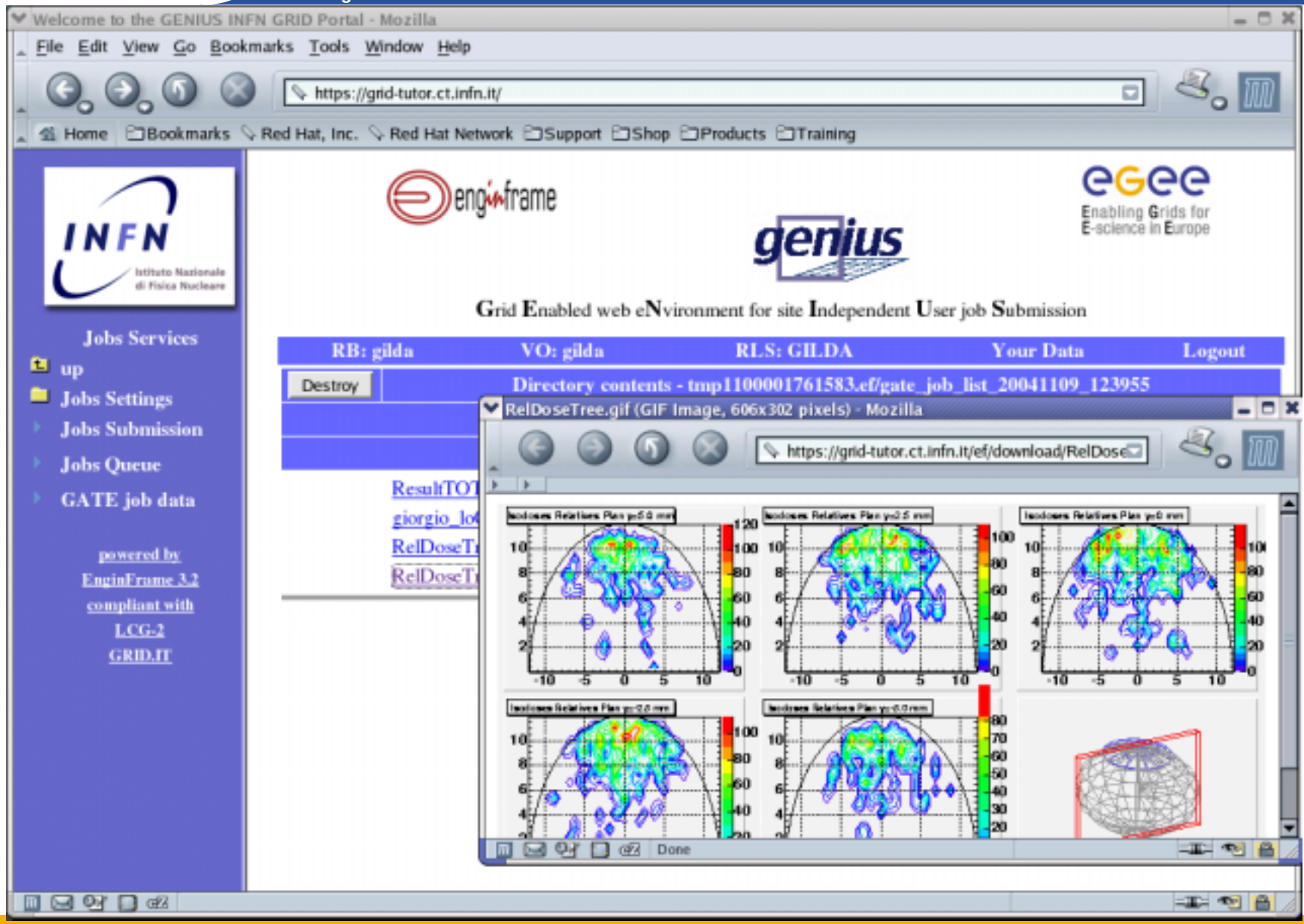


CATANA beam line simulated by

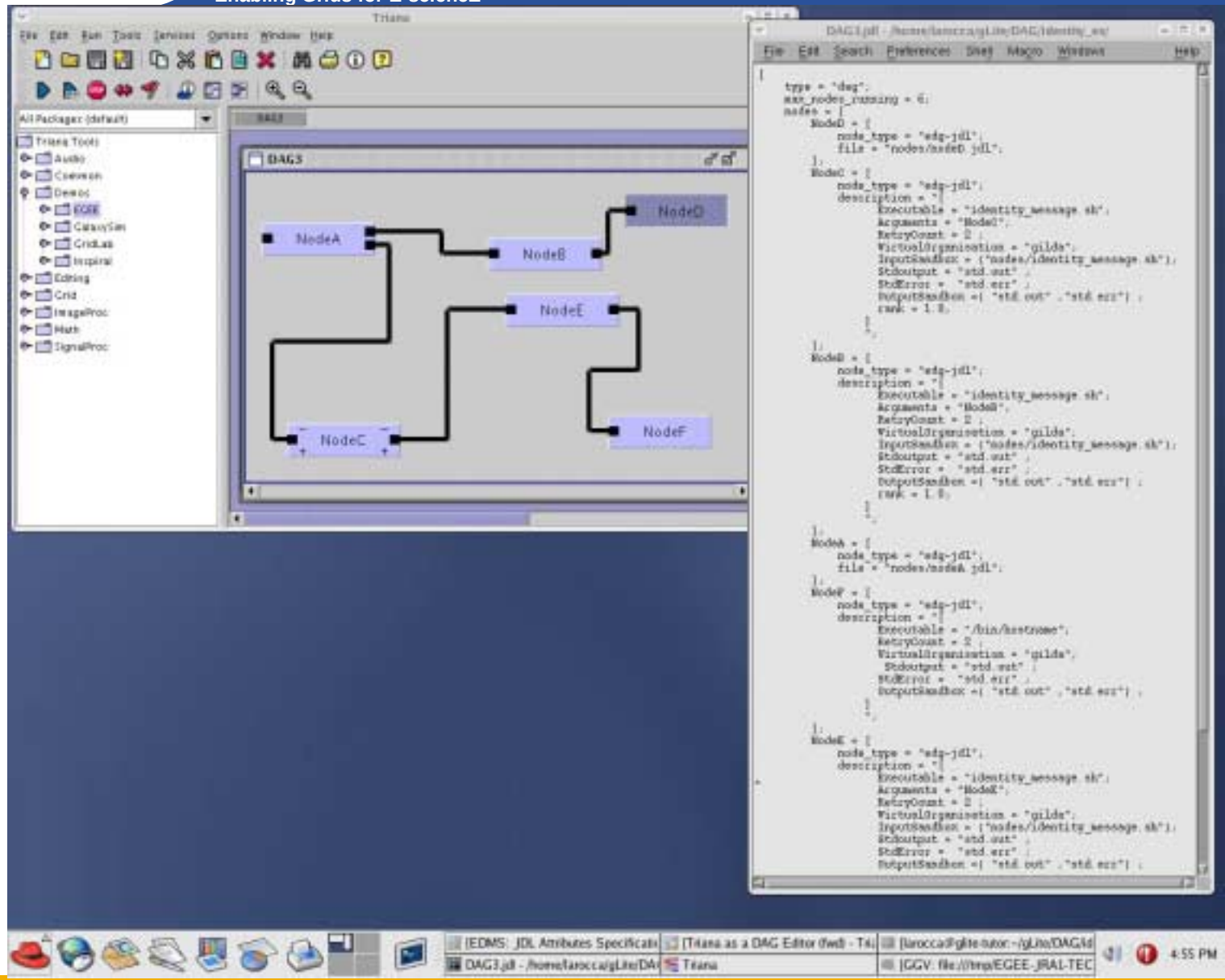
hadronTherapy



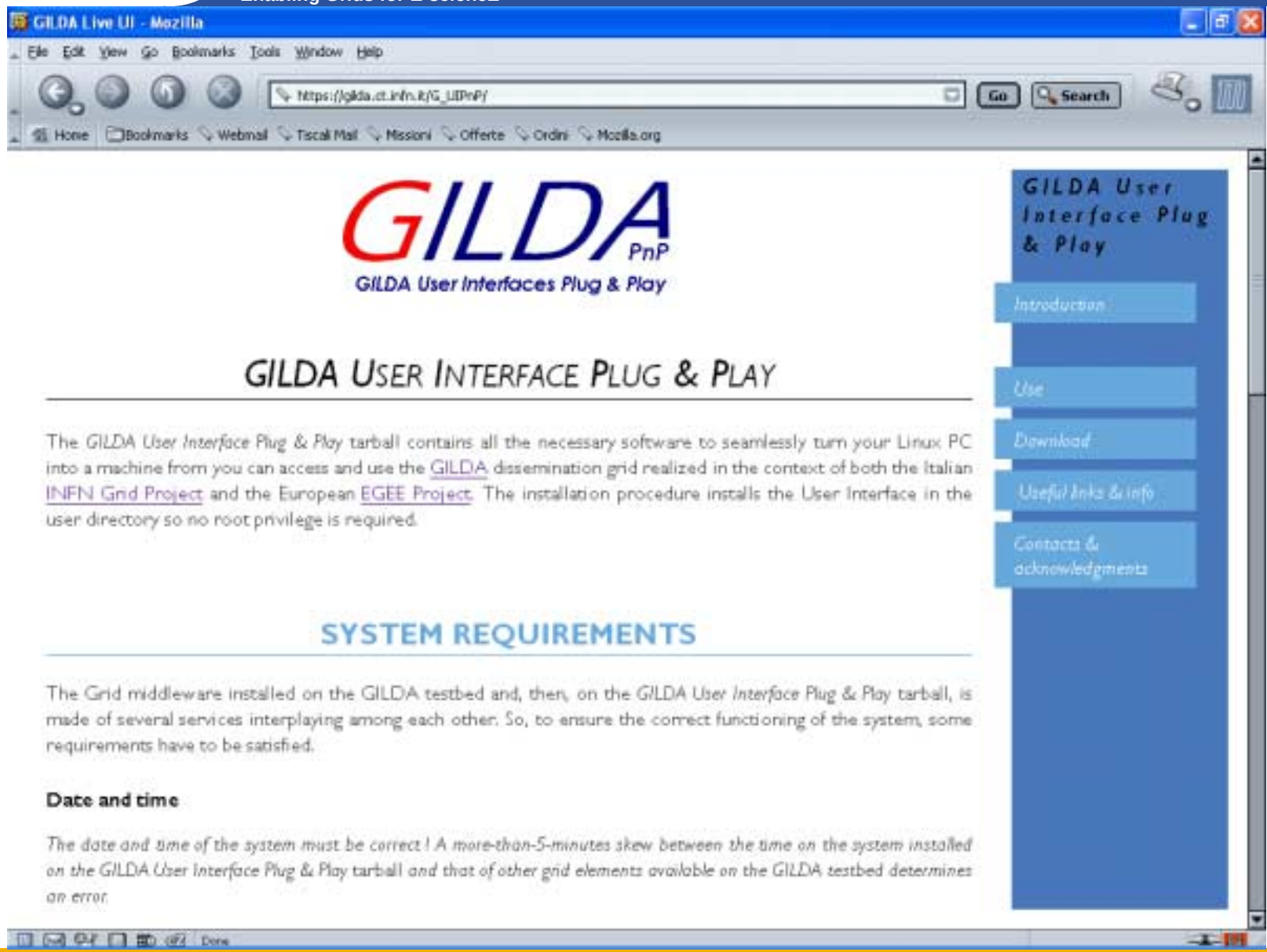
GATE example



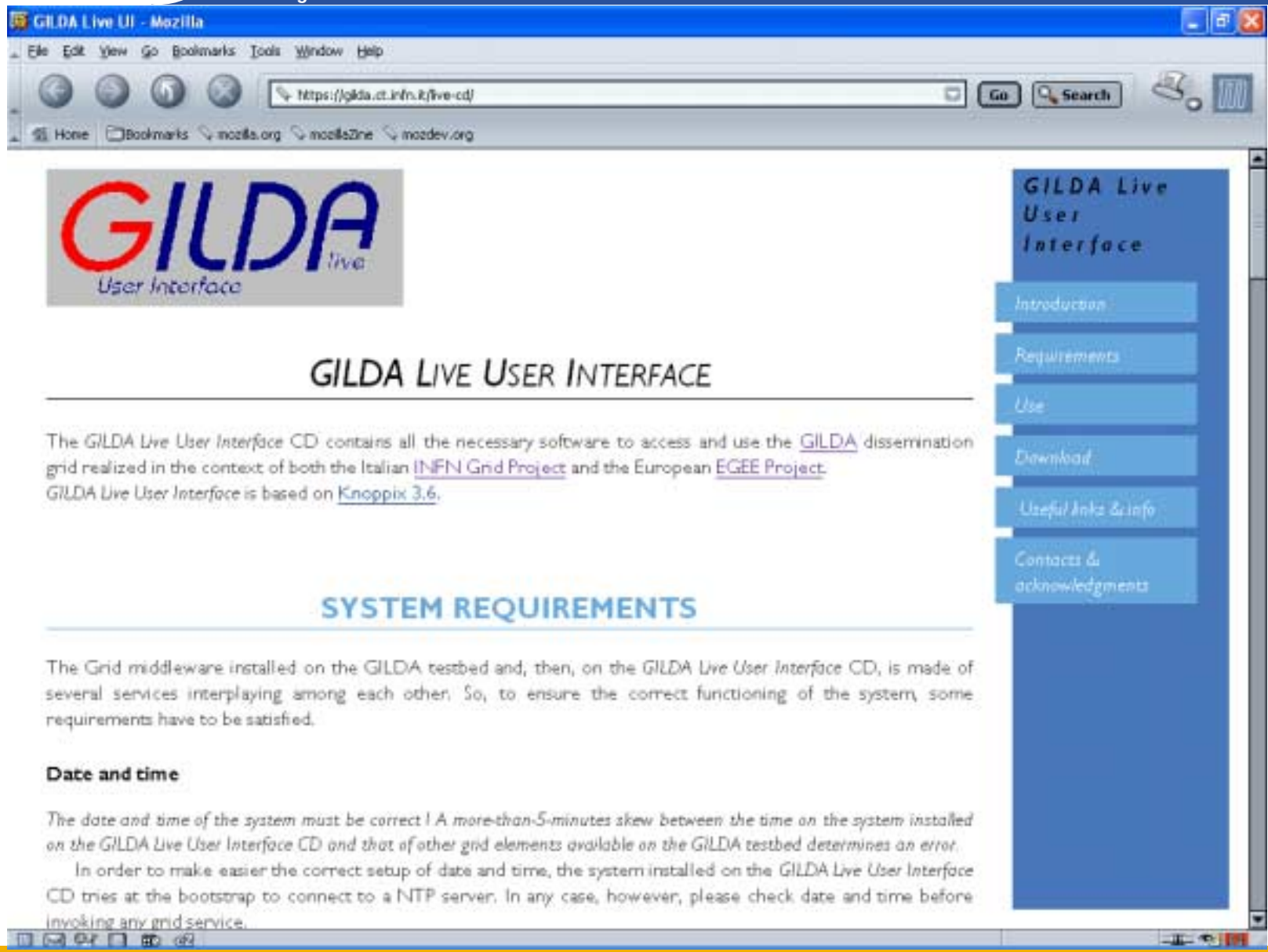
An example of integration: complex workflows (GENIUS & TRIANA)



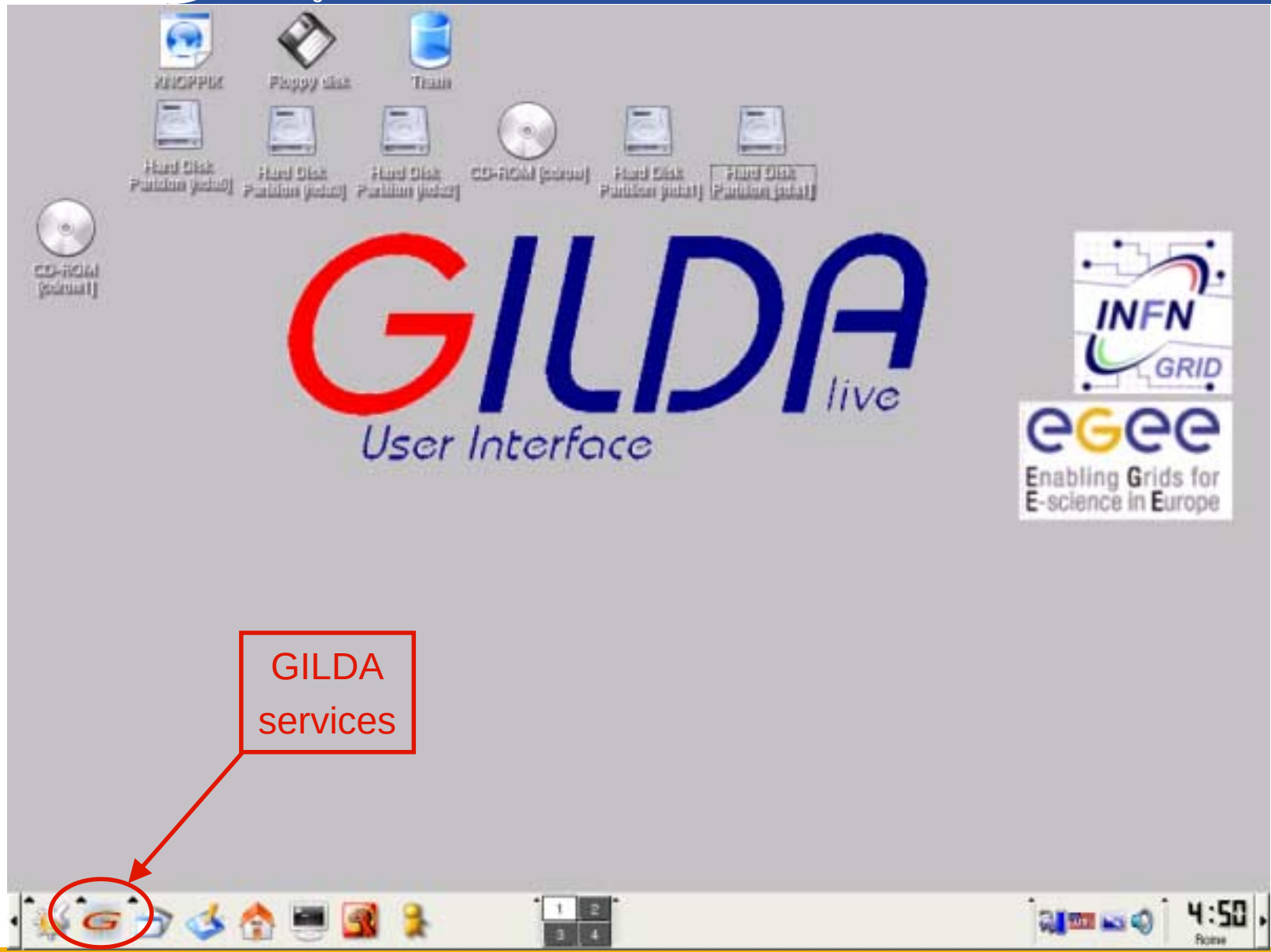
The GILDA User Interface Plug&Play (https://gilda.ct.infn.it/G_UIPnP/)



The GILDA Live User Interface (1/2) (https://gilda.ct.infn.it/live-cd/)



The GILDA Live User Interface (2/2)



The GILDA Tutorials/Demonstrations (1/3) (https://gilda.ct.infn.it/tutorials.html)

2004

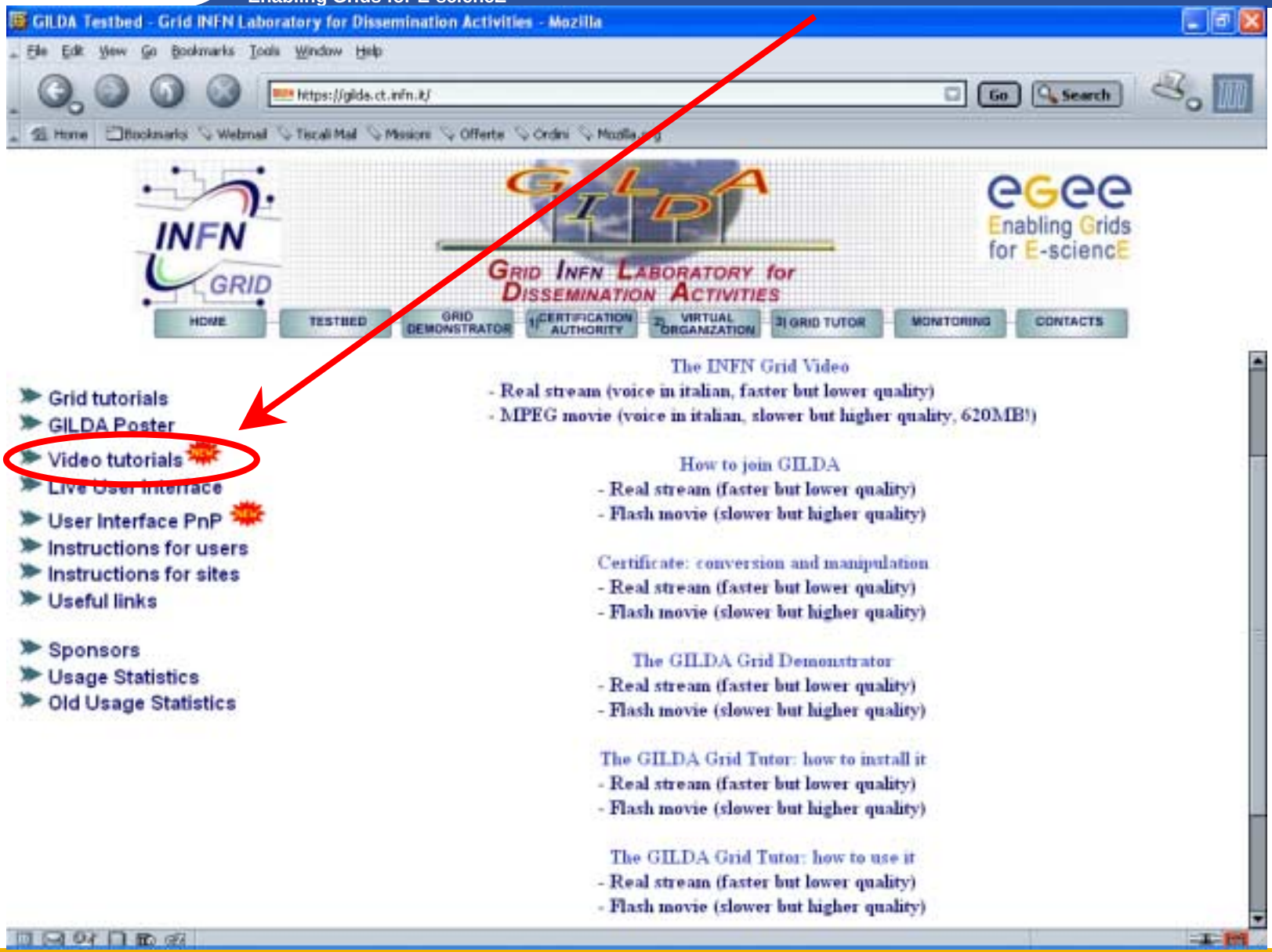
Edinburgh, 7 April 2004, slides, pictures
Tunis, 22-23 April 2004, pictures
Edinburgh, 26-28 April 2004, slides, pictures
CERN, 17-19 May 2004, pictures
Catania, 24-25 May 2004, home page, pictures
Dubna, 29 June - 2 July 2004, agenda
Edinburgh, 6 July 2004, home page
Catania, 14-16 July 2004, home page, pictures
Vico Equense, 19 July 2004, slides, pictures
Vico Equense, 6-10 September 2004, home page
Catania, 4-8 October 2004, home page, agenda
Vilnius, 5-6 October 2004, agenda
London, 6 October 2004
Madrid, 6-7 October 2004, agenda
Heidelberg, 11-14 October 2004
CERN, 16 October 2004
Prague, 26 october 2004, home page
Warsaw, 4-6 November 2004, home page, agenda
Lyon, 9-10 November 2004, agenda
The Hague, 15-17 November 2004, pictures
Merida, 15-20 November 2004, home page, agenda, slides, pictures
Tunis, 20 November 2004
Rio de Janeiro, 22-23 November 2004, home page, agenda, pictures
The Hague, 24 November 2004, agenda
CERN, 29-30 November 2004, agenda
Kosice, 30 November - 1 December 2004, agenda
Tunis, 6-7 December 2004
Bochum, 7-10 December 2004, home page, agenda
Edinburgh, 8 December 2004, home page
Istanbul, 9-10 December 2004, agenda, slides, pictures
Shanghai, 9-10 December 2004, agenda
Aurillac, 13-14 December 2004
Prague, 16 December 2004, home page, pictures
Tel Aviv, 22-23 December 2004, agenda, pictures

2005

CERN, 13 January 2005, agenda
Torino, 18-19 January 2005, home page, agenda
CERN, 20 January 2005, agenda
CERN, 2-4 February 2005, agenda
Roma, 3 February 2005, home page, agenda, pictures
Sydney, 3-4 February 2005, home page
CERN, 9-11 February 2005, agenda
Amsterdam, 14-16 February 2005, home page
Trento, 23-25 February 2005, home page, agenda
Amsterdam, 28 February - 1 March 2005, home page
Julich, 9 March 2005,
Clermont-Ferrand, 9-31 March 2005, agenda
Vienna, March-August 2005
Hamburg, 23-24 March 2005, home page, agenda
Ula-Merida, 31 March-1 April 2005, agenda
Zilina, 4 April 2005, home page and agenda
Edinburgh, 9-13 May 2005, home page and agenda
Catania, 13-15 June 2005, home page, agenda
Valencia, 14-16 June 2005, home page, agenda

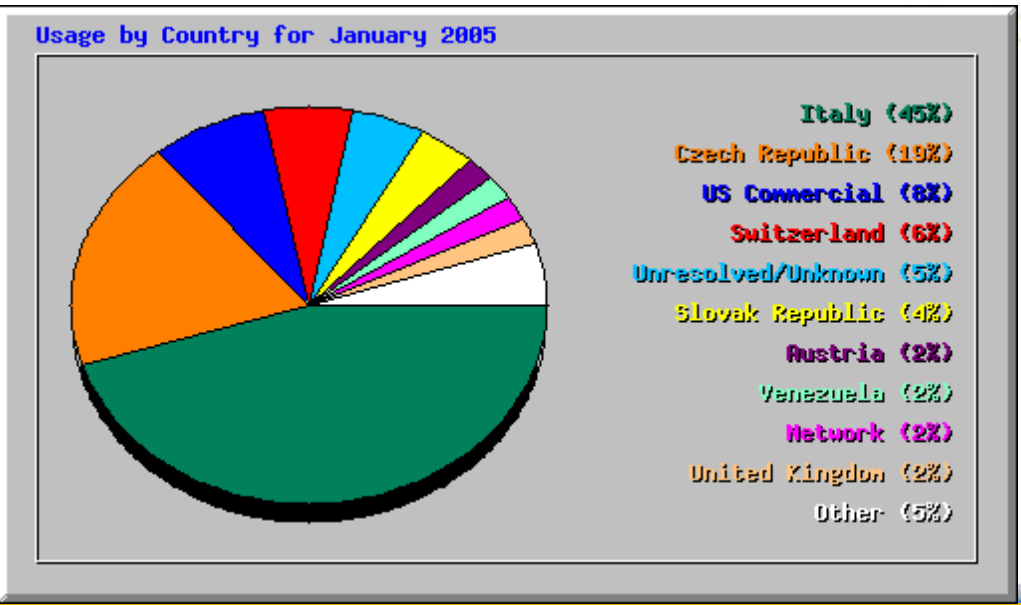
The GILDA Tutorials/Demonstrations (2/3) (https://gilda.ct.infn.it/tutorials.html)

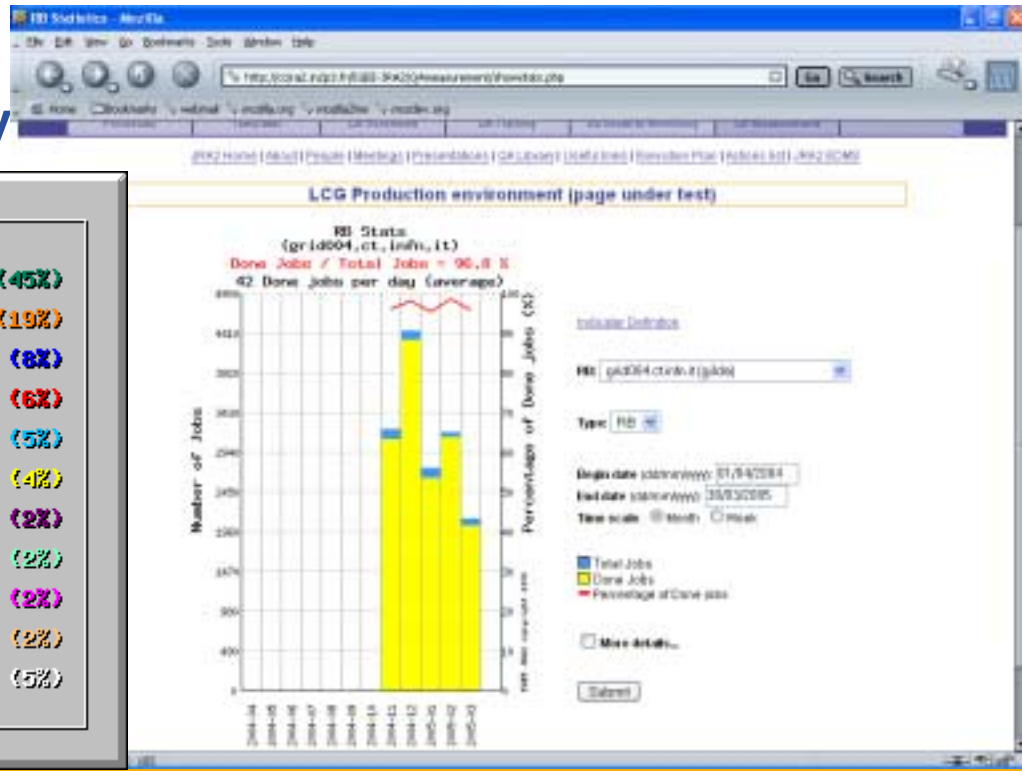
The GILDA Video Tutorials (https://gilda.ct.infn.it/video.html)



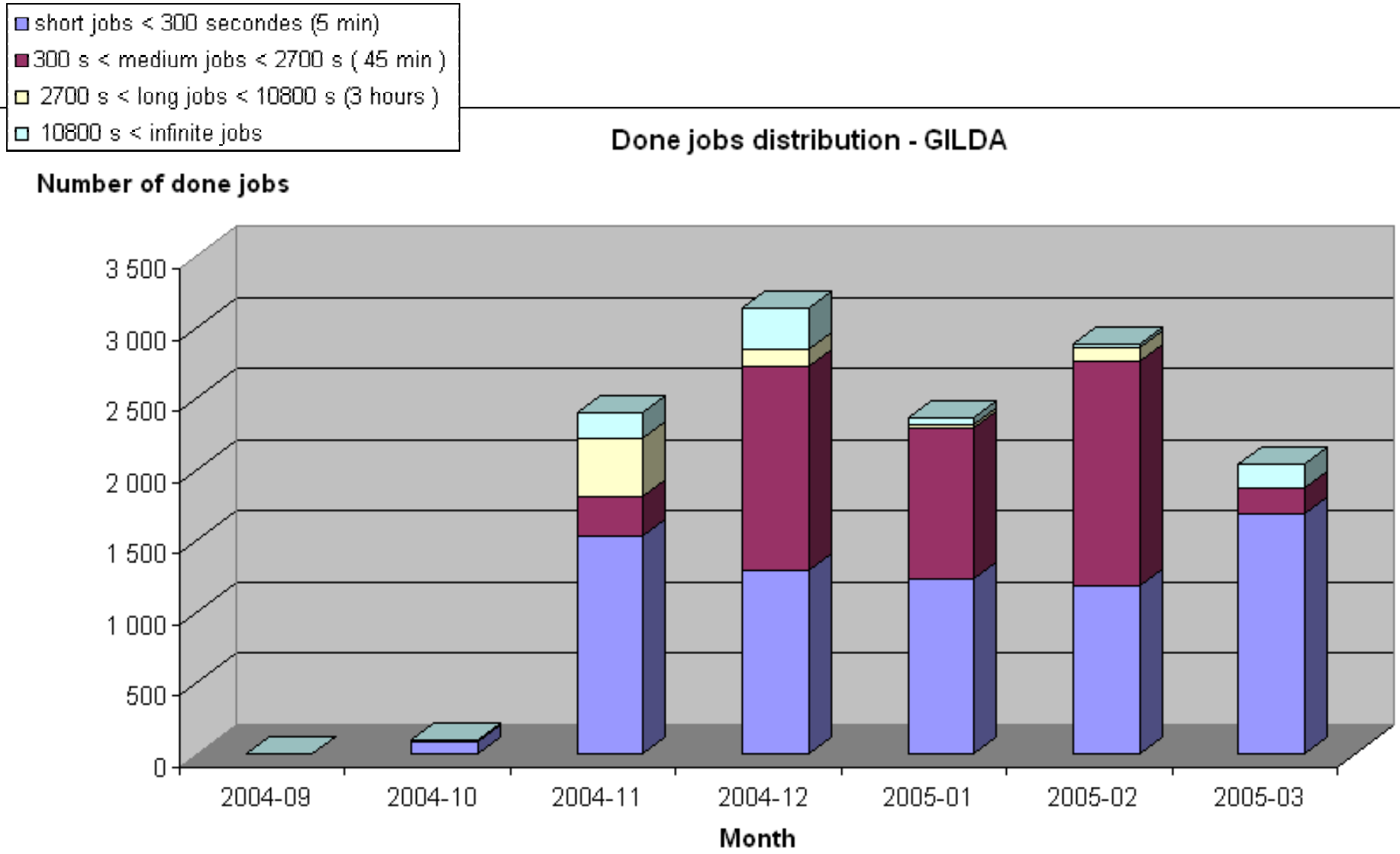
GILDA summary numbers

- 15 sites in 3 continents
- > 1400 certificates issued, 20% renewed at least once
- > 40 tutorials and demos performed in 13 months
- > 40 jobs/day on the average
- Job success rate above 96%
- > 500,000 hits on the web site from 10's of different countries
- > 200 copies of the UI live CD distributed in the world
- > 100 copies of the UI Plug&Play

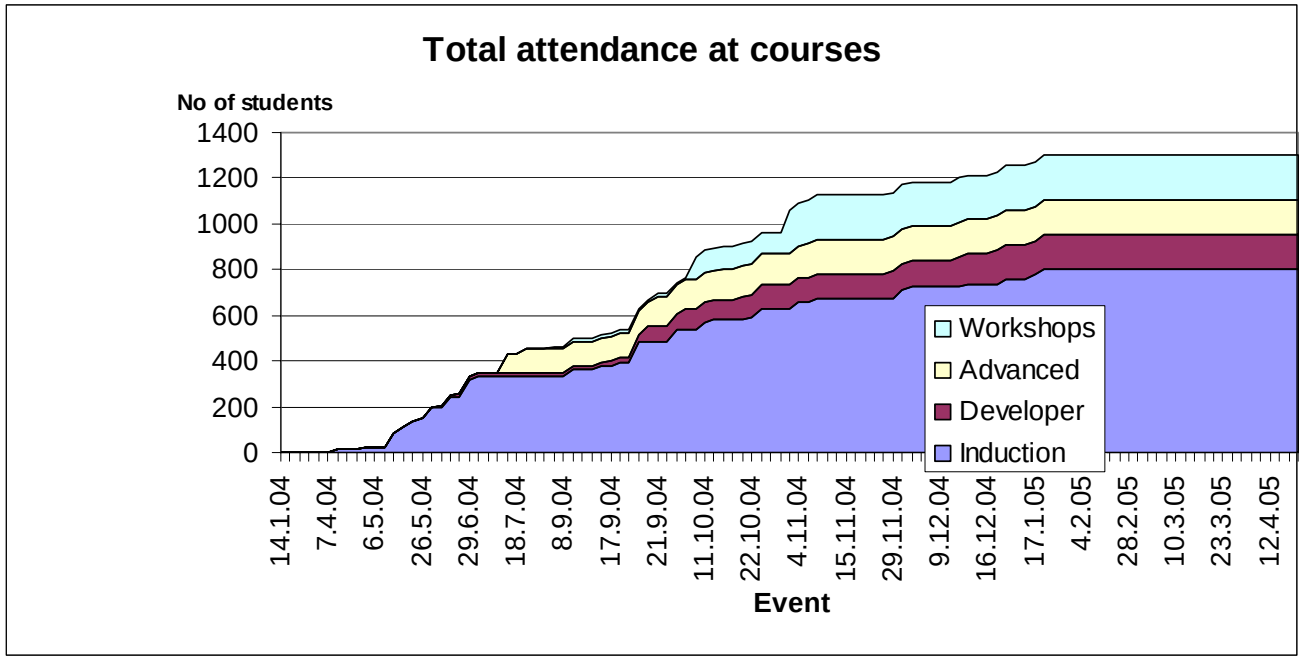


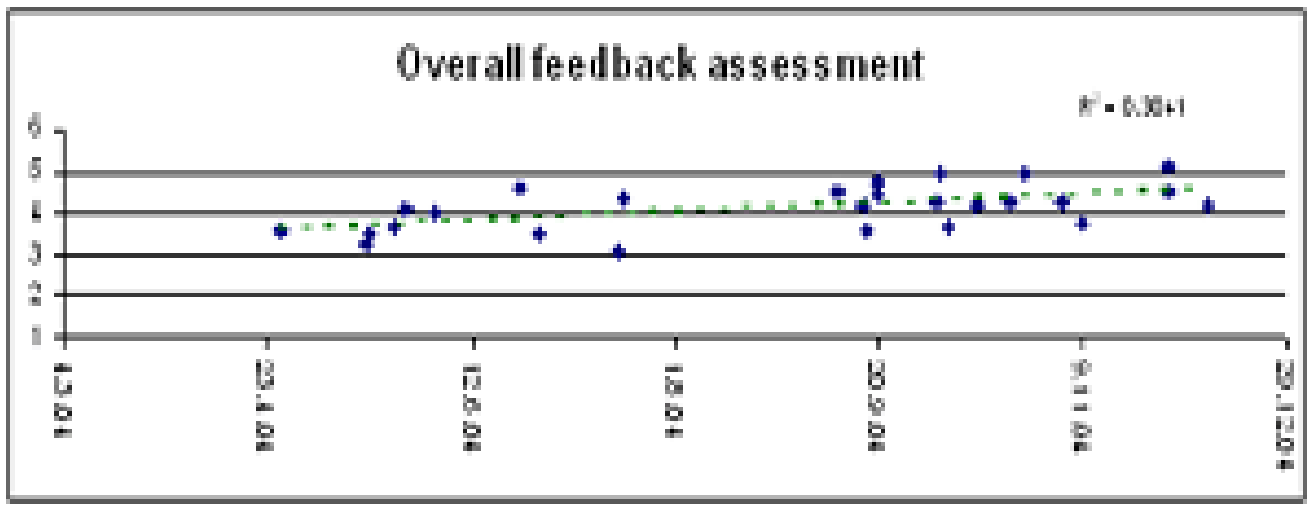


GILDA usage in the last months



Training achievements

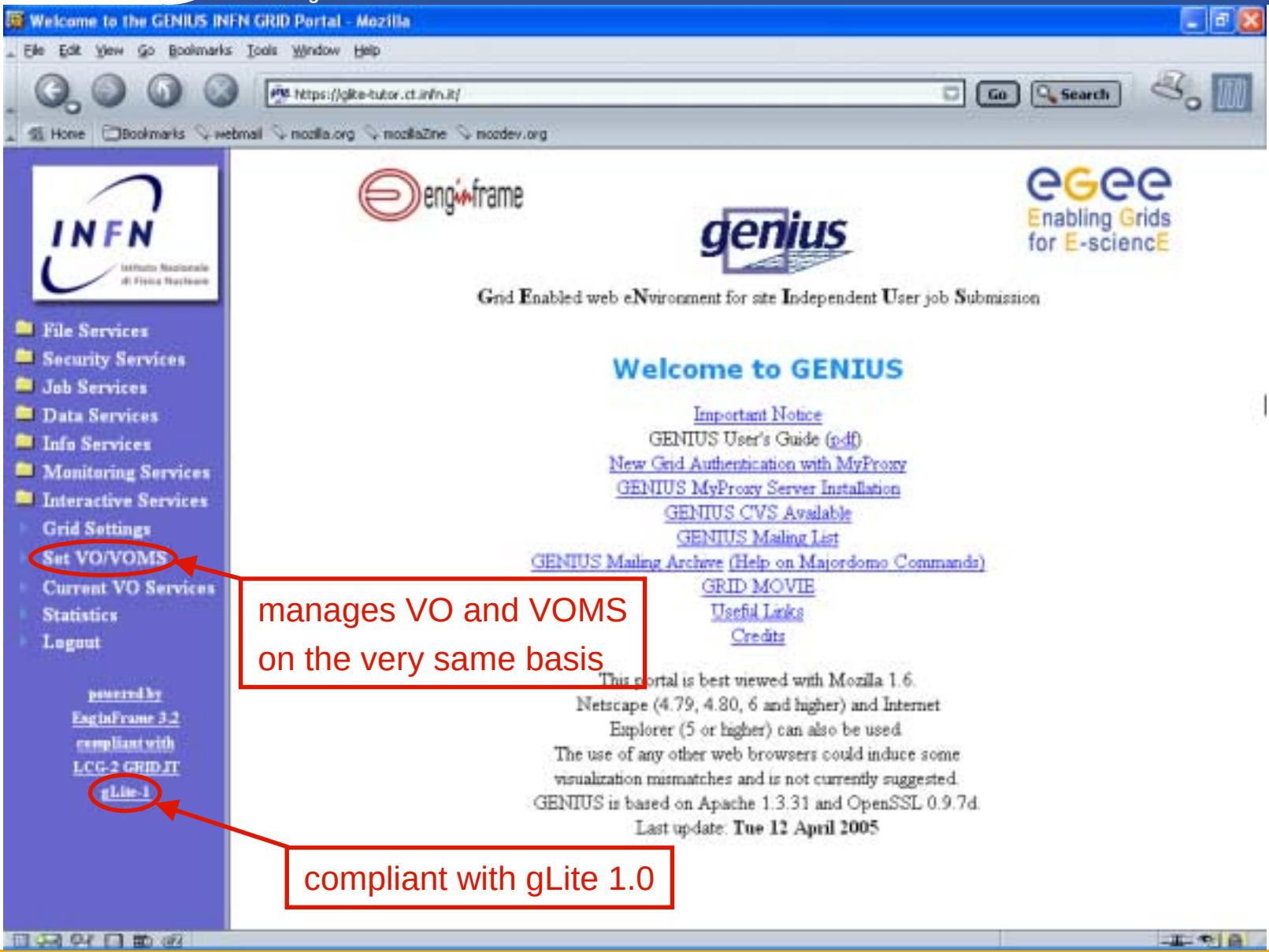




EGEE-NA4 Applications and GILDA

- **7 Virtual Organizations supported:**
  - Biomedicine (Biomed)
  - Earth Science Academy (ESR)
  - Earth Science Industry (CGG)
  - Astroparticle Physics (MAGIC)
  - Computational Chemistry (GEMS)
  - Grid Search Engines (GRACE)
  - Astrophysics (PLANCK)
- **Development of complete interfaces with GENIUS for 3 Biomed Applications: GATE, hadronTherapy, and Friction/Arlecore**
- **Development of complete interfaces with GENIUS for 4 Generic Applications: EGEODE (CGG), MAGIC, GEMS, and CODESA-3D (ESR) (successfull demos of EGEODE and GEMS at EGEE review)**
- **Development of complete interfaces with GENIUS for 16 demonstrative applications available on the GILDA Grid Demonstrator (https://grid-demo.ct.infn.it)**
- **Development of complete interface with CLI for NEMO**

GILDA Tutor for gLite ! (https://glite-tutor.ct.infn.it)



Summary and conclusions

- GILDA is a real virtual laboratory for dissemination of grid computing.
- It is a “de facto” standard t-Infrastructure adopted both by EGEE and the forthcoming EU projects.
- It is a complete suite of grid elements (test-bed, CA, VO, monitoring system, web portal, live user interface, user interface plug&play) and applications fully dedicated to dissemination purposes and pre-porting of new applications to EGEE Infrastructure.
- GILDA runs latest production (stable) version of the LCG grid middleware but it is also early adopting gLite in order to make the transition to the new middleware smoother and easier.