



Enabling Grids for E-science

GENIUS and EnginFrame Portal FrameWork: new features and future perspectives

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NICE srl*

www.nice-italy.com

*The EGEE Industry Forum
Ginevra – 26 September 2006*

www.eu-egee.org



- ☐ **NICE**
- ☐ **GENIUS and EnginFrame news**
- ☐ **Experiences & Projects**

- **Expertise in Grid deployment**
 - European company with 10 years experience with enterprise Grid solutions
 - Comprehensive professional service offering for commercial and EGEE middleware
- **Core business: Grids & Grid Gateway**
 - **GENIUS & EnginFrame** Grid Portal product line
 - VAR channels with worldwide coverage for implementation and support (incl. industry leader Platform Computing)
 - Grid Projects
- **Other relevant competencies**
 - Server-based computing



- **Mechanical**
 - Ferrari, Audi, BMW, FIAT Auto, Delphi, Elasis, Magneti Marelli, P+Z, Swagelok, Toyota, TRW
- **Manufacturing**
 - Bridgestone, Procter & Gamble, Galileo Avionica
- **Oil&Gas**
 - Slavneft, Schlumberger, TOTAL, VNIIGaz
- **Electronics**
 - STMicroelectronics, Accent, SensorDynamics, Motorola
- **Biotech**
 - ENEA, EGEE LS community
- **Telecom**
 - Telecom Italia
- **Research**
 - INFN, ASSC, CCLRC, CERN, CILEA, CINECA, CNR, CNRS/IN2P3, ENEA, FzU, ICI, IFAE, ITEP, JSC G.G.M., KU Leuven, SSC-Russia, SDSC
- **Education**
 - Dresda University, Ferrara University, ITU, Messina University, Politecnico of Milan, Technische Universität Dresden, Trinity College Dublin, Salerno University, S-PACI, IHEP Cina,

- ☐ NICE
- ☐ **GENIUS and EnginFrame news**
- ☐ Experiences & Projects



GENIUS - EGEE Grid Portal

Enabling Grids for E-science

Welcome to the GENIUS Grid Portal - Mozilla

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

INFN **eGEE** Enabling Grids for E-science Grid Enabled web eNvironment for **genius** site Independent User job Submission **enginframe** **NICE**

GENIUS Services

- File
- Security
- Job
 - GUI
 - Job Editor
 - Workflow Editor
 - Close GUI Session
 - Accounting
 - Job Submission
 - Job Queue
 - Clean Job Queues
 - List Available Resources
- Data
- Info
- Monitoring
- Interactive
- Preferences
- VO Services

Welcome to GENIUS Portal

genius

ver. 3.1.1
compliant with [gLite 3.0](#) middleware
[Credits](#)

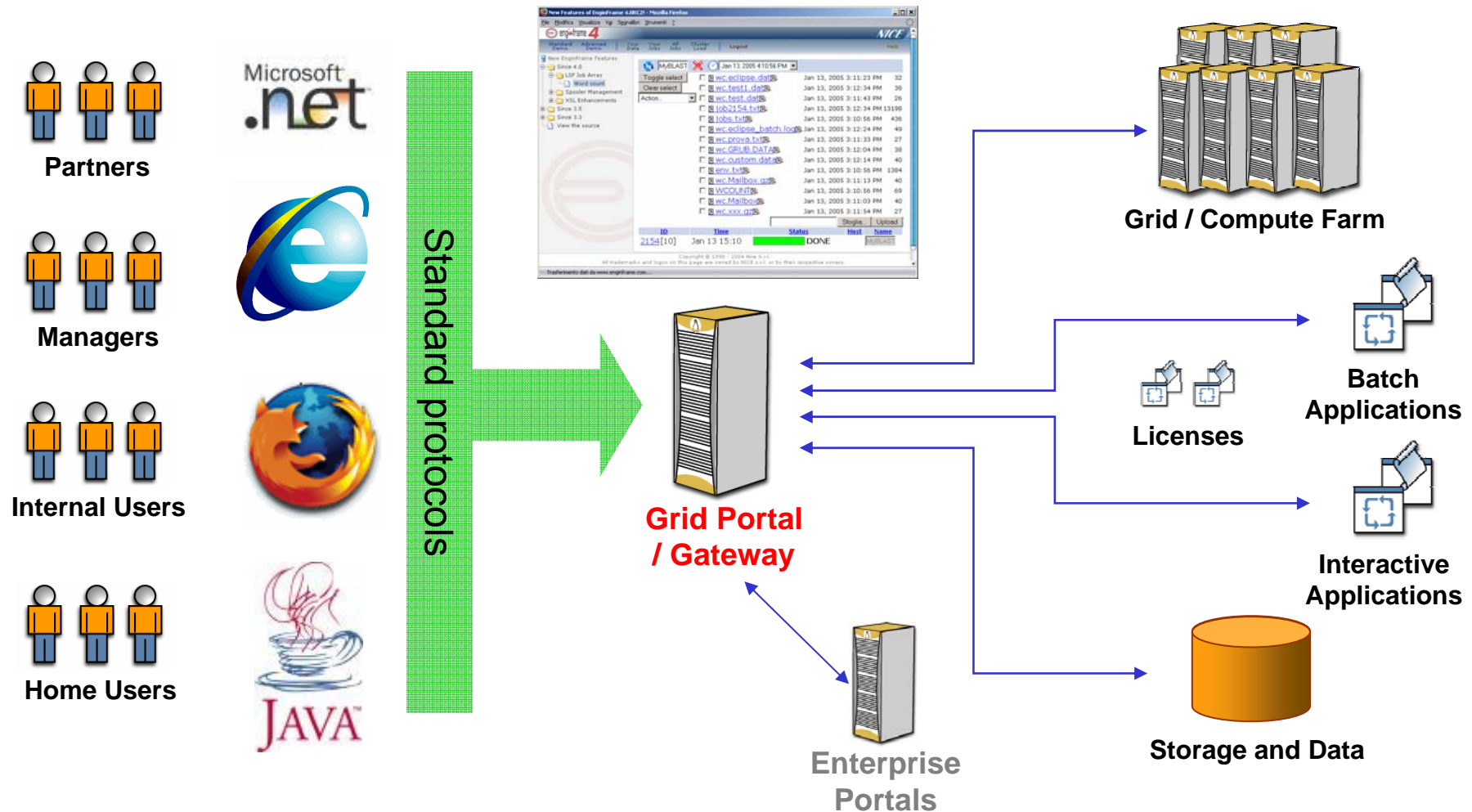
This portal is best viewed with Mozilla 1.7.12 or higher.
Netscape (4.79, 4.80, 6 or higher) and Internet Explorer (5 or higher) can also be used.
The use of any other web browsers could induce some visualization mismatches and is not currently suggested.

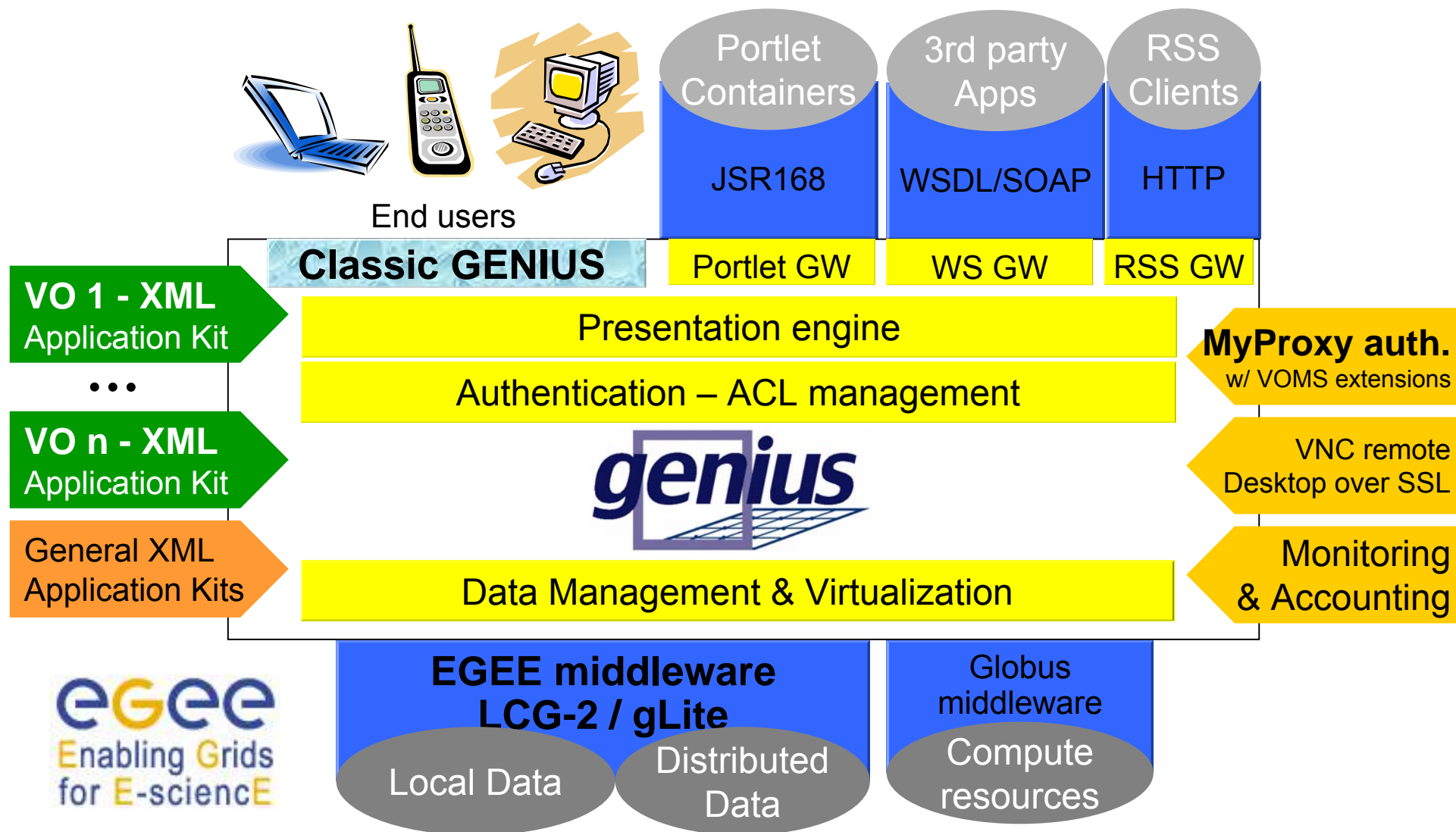
powered by **enginframe**

Last update: **Mon 3 July 2006**






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The Grid Portal / Gateway





Welcome to the GENIUS Portal - Mozilla

Grid Enabled web Environment for site Independent User job Submission

Welcome faizone Resource Broker: gilda_glite Virtual Organization: gilda Catalog Type: fireman Catalog I/O: cnaf Your Data Logout

GENIUS Services

- File
- Security
- Accounting
- Job
 - GUI
 - Job Submission
 - Job Queue
 - Clean Job Queues
 - List Available Resources
- Data
- Info
- Monitoring
- Interactive
- Preferences

Job Queue

#	Globus Job ID	Last Update Time	Status	Destination	Exit Code
33	8rx1w7Kw4bO1ZMXHqFChHw	2006 Jan 8 14:50	Ready	glite-ce.ct.infn.it2119/blah-pbs-short	
32	BFpXqz8-Qk6GI52UO8Q8cg	2006 Jan 8 14:48	Ready	eggee008.cnaf.infn.it2119/blah-pbs-infinite	
31	ug271XmY1vGWyadRJ-6vvqg	2006 Jan 8 14:48	Ready	eggee008.cnaf.infn.it2119/blah-pbs-short	
30	QMI6fXx-KN1oHNm2HiP3rA	2006 Jan 8 14:45	Ready	eggee008.cnaf.infn.it2119/blah-pbs-infinite	
29	ivKearNJtYijhTfjaaeaAA	2006 Jan 2 16:43	Done	eggee008.cnaf.infn.it2119/blah-pbs-long	0
24	nNW0pQgp_vTNVaTGcAU8rQ	2005 Dec 28 20:15	Done	glite-ce.ct.infn.it2119/blah-pbs-long	0
22	XpUvqJo6wKba0upDX9V-8g	2005 Dec 28 19:59	Done	glite-ce.ct.infn.it2119/blah-pbs-short	0
21	MIZ-y3MIPkNlfxBcivit5A	2005 Dec 28 19:59	Done	ixcde01.pd.infn.it2119/blah-pbs-infinite	0
20	XuxWQMDawn3NRI3W_yLp9g	2005 Dec 28 18:11	Done	glite-ce.ct.infn.it2119/blah-pbs-short	0
17	eciQWny4UoPbTZmgRhfxJA	2005 Dec 28 16:52	Done	gilda-ce-01.pd.infn.it2119/jobmanager-lcgpbs-short	0
16	rvZJgqldmlEBWC-4jgv1tg	2005 Dec 28 15:08	Done	glite-ce.ct.infn.it2119/blah-pbs-short	0
3	LXplqV3AlcoQssrUWpTofA	2005 Dec 27 23:12	Done	grid004.iucc.ac.il:2119/jobmanager-lcgpbs-long	0
2	X4PZT3vFMk_EOaHF0bq7zw	2005 Dec 27 23:12	Done	grid004.iucc.ac.il:2119/jobmanager-lcgpbs-infinite	0
1	oKUA3k-0_CIEyTpiXBtyyA	2005 Dec 27 23:11	Done	grid004.iucc.ac.il:2119/jobmanager-lcgpbs-infinite	0

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Jobs Queue management uses GridML description



GENIUS: Data & Grid Catalogs

Enabling Grids for E-science

Welcome to the GENIUS Grid Portal - Mozilla

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

INFN Enabling Grids for E-science Grid Enabled web Environment for genius site Independent User job Submission enginframe NICE

Welcome falzone Resource Broker: infngrid Virtual Organization: infngrid

GENIUS Services

- File
- Security
- Job
- Data
 - Publish a File
 - Navigate Catalog
 - Manage Dir on Catalog
 - Rename on Catalog
- Info
- Monitoring
- Interactive
- Preferences
- VO Services

File Upload

Home GENIUS_Works TEST

Nome	Data modifica
alberto.jdl	30/09/2003
alroot1.jdl	27/03/2003
alroot3.jdl	31/03/2003
alroot_old_test.jdl	01/04/2003
alroot.test.jdl	25/03/2003
first_tarball.tar	15/11/2005
jdl_test.jdl	27/03/2003
second_tarball.tar.gz	15/11/2005
second_tarball.tgz	15/11/2005

All Files

Path: /home/falzone

Path: /Alberto

ended Remote File Browse LFC Catalog

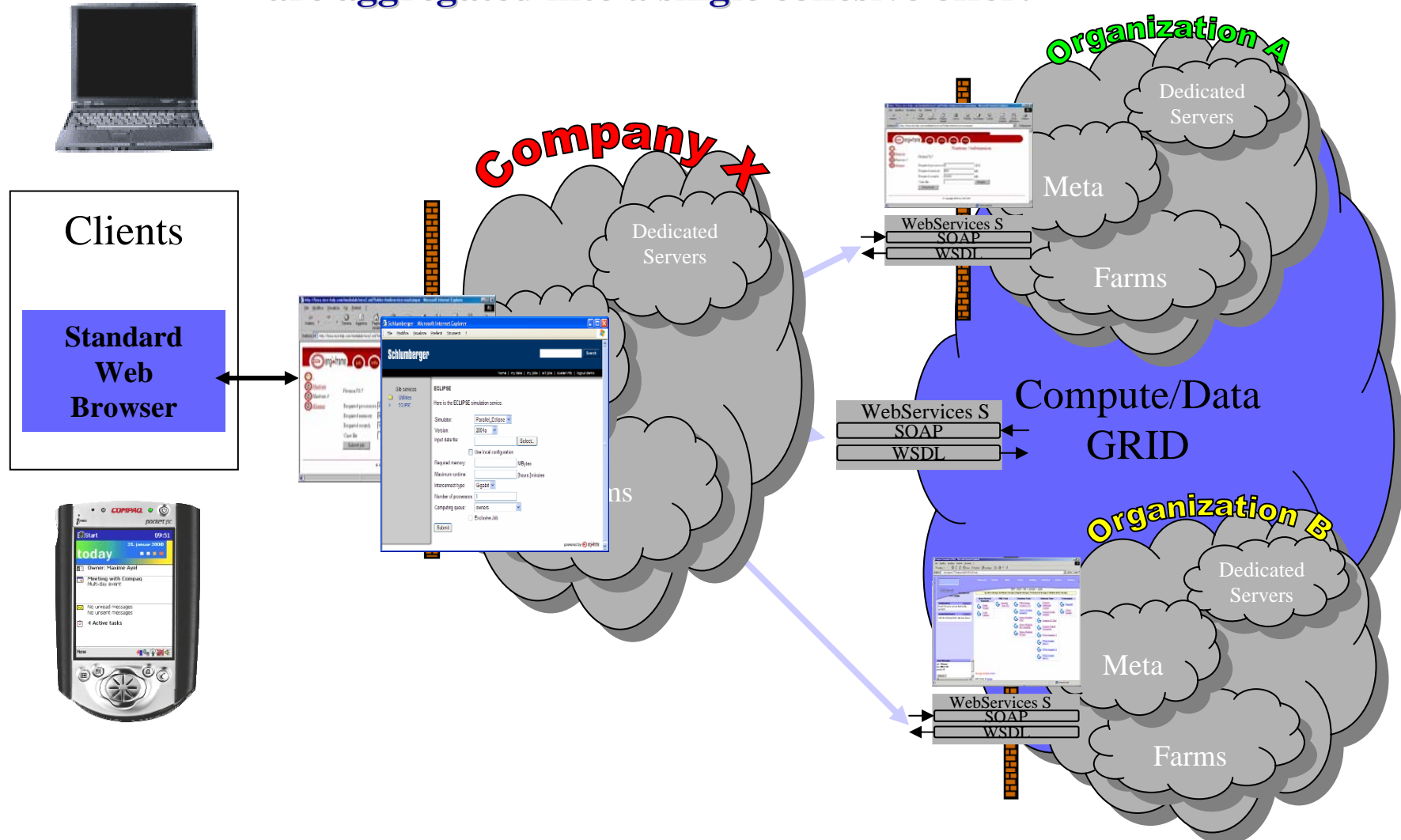
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- **Based on EnginFrame 4.1**
- **EGEE User Interface technology stack:**
 - Apache + Mod_JK2 ;
 - Mod_SSL for secure encrypted connections ;
 - Tomcat as servlets container ;
 - EnginFrame 4.1 as core of 3-tier model
- **New EF 4.1 Plugins approach for Grid integrations: independent deployable modules**
- **Improved virtualization of Remote File Browsing**
- **Improved Security**

- **Directed Acyclic Graph (DAG) Jobs recognition and their queue management**
- **Transparent support of EGEE LFC Catalog: easy data management**
- **Usability improvements and new feedbacks for users**
- **Support for AMGA Metadata**
- **GENIUS/EF services ready for JSR168 Portlets Containers**
- **GENIUS/EF services are exposed also as standard WSs**

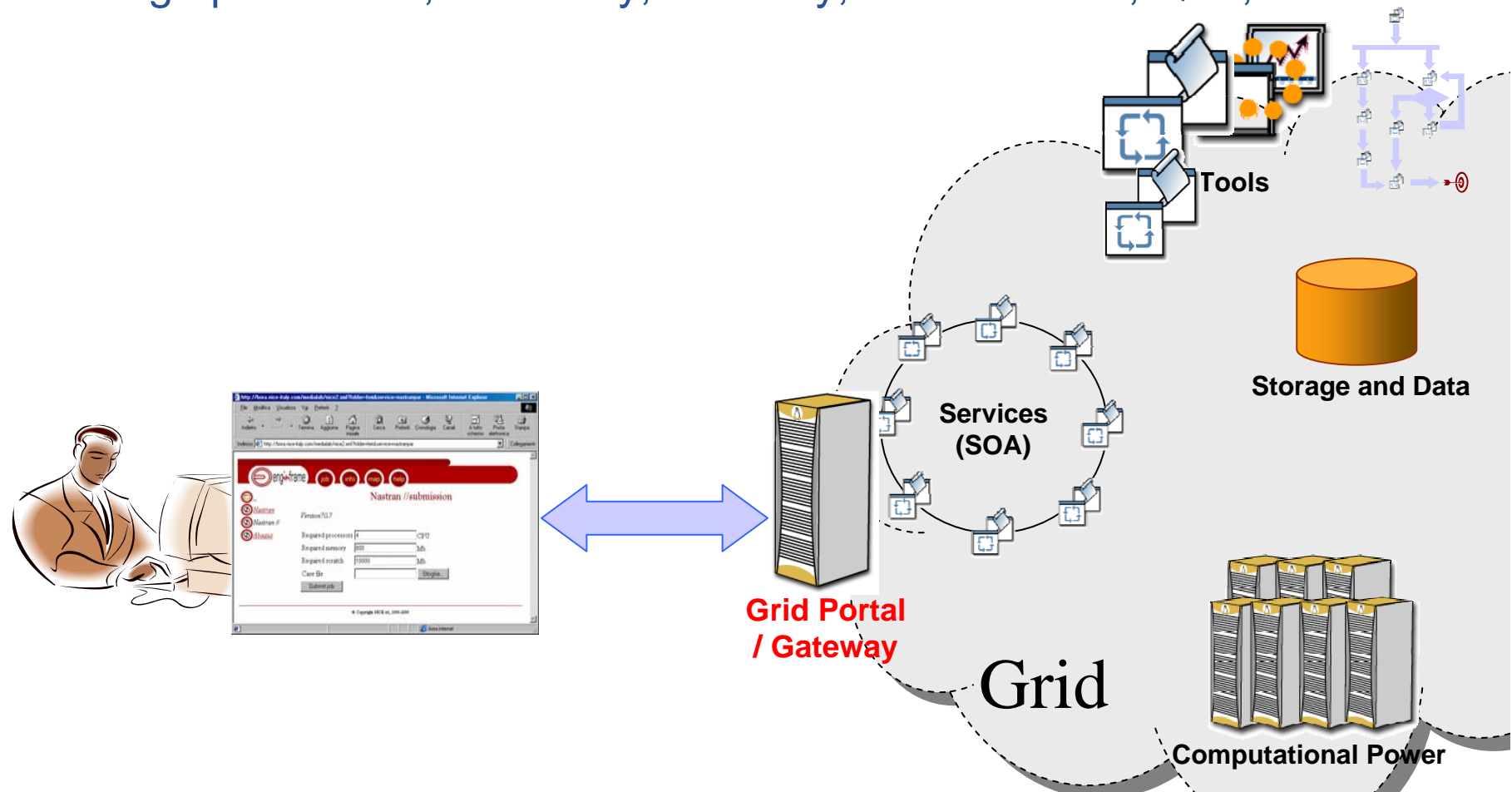
- **Support for EGEE Job Collections/Productions and WMS interactions**
- **New services for VOMS proxy and authentication**
- **Web Services Improvements (consumer side)**
- **Ajax integration for better usability**
- **Other contributes from GENIUS Users and Community**
- **WS consumer functionalities to interface gLite WS and other useful WS producers**
- **Workflow oriented services**
- **AMGA Interface for administrators**

**Different services from different Organizations
are aggregated into a single cohesive offer!**

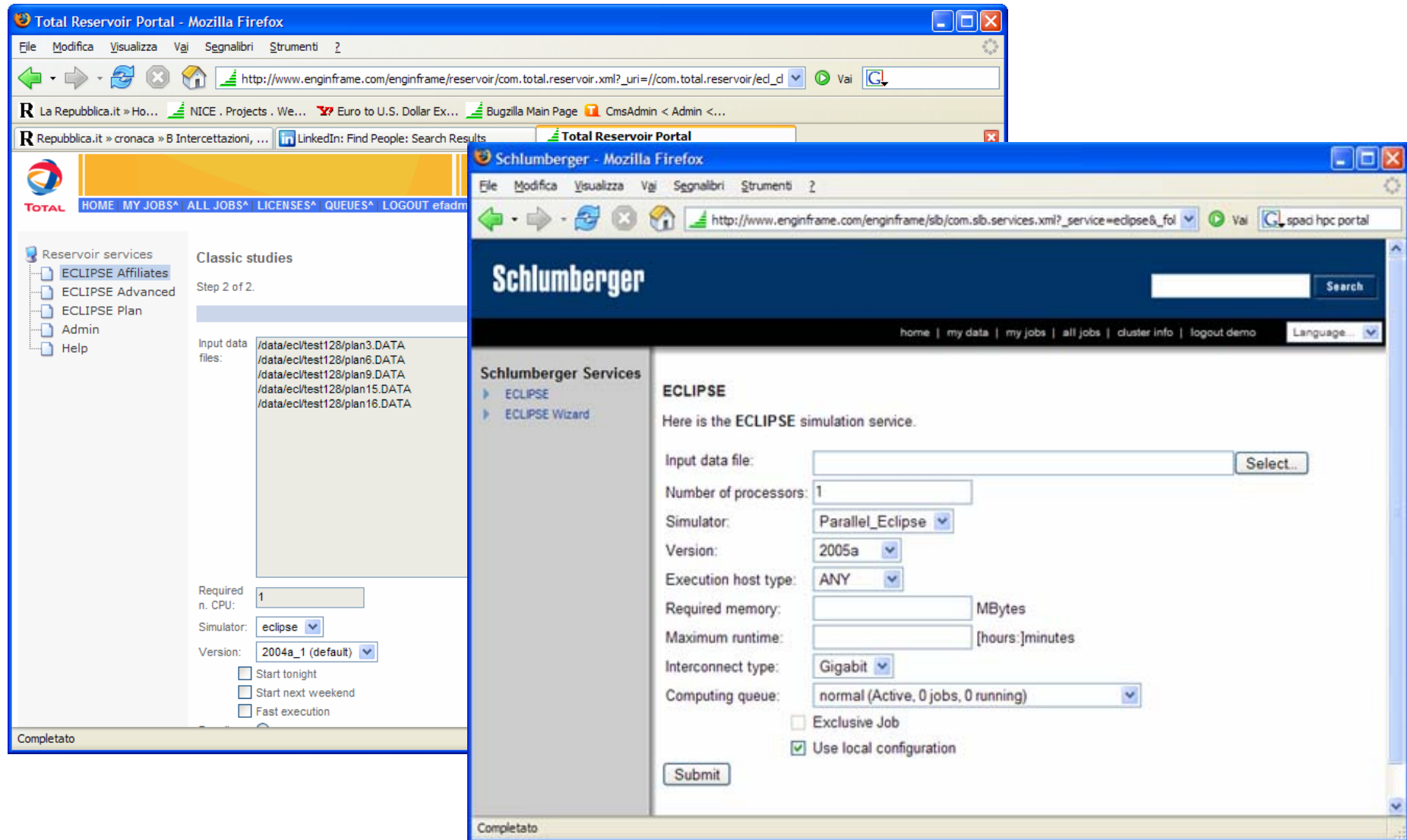


Gridified SOA Scenario

- Grid technology leverages both the computational and data management resources
- Providing optimisation, scalability, reliability, fault tolerance, QoS,...



- ☐ **NICE**
- ☐ **GENIUS and EnginFrame news**
- ☐ **Experiences & Projects**



The image displays two web portals side-by-side, both running in Mozilla Firefox.

Left Portal: Total Reservoir Portal

- URL:** `http://www.enginframe.com/enginframe/reservoir/com.total.reservoir.xml?_uri=com.total.reservoir/ed_cd`
- Navigation:** HOME, MY JOBS*, ALL JOBS*, LICENSES*, QUEUES*, LOGOUT efadm
- Left Sidebar:**
 - Reservoir services
 - ECLIPSE Affiliates
 - ECLIPSE Advanced
 - ECLIPSE Plan
 - Admin
 - Help
- Main Content:**
 - Classic studies**
 - Step 2 of 2.
 - Input data files:
 - /data/ec/test128/plan3.DATA
 - /data/ec/test128/plan6.DATA
 - /data/ec/test128/plan9.DATA
 - /data/ec/test128/plan15.DATA
 - /data/ec/test128/plan16.DATA
 - Required n. CPU: 1
 - Simulator: eclipse
 - Version: 2004a_1 (default)
 - Options:
 - ☐ Start tonight
 - ☐ Start next weekend
 - ☐ Fast execution

Right Portal: Schlumberger

- URL:** `http://www.enginframe.com/enginframe/slb/com.slb.services.xml?_service=eclipse&_fol`
- Navigation:** home | my data | my jobs | all jobs | cluster info | logout demo | Language...
- Left Sidebar:**
 - Schlumberger Services
 - ECLIPSE
 - ECLIPSE Wizard
- Main Content:**
 - ECLIPSE**
 - Here is the ECLIPSE simulation service.
 - Input data file: [Select..]
 - Number of processors: 1
 - Simulator: Parallel_Eclipse
 - Version: 2005a
 - Execution host type: ANY
 - Required memory: [] MBytes
 - Maximum runtime: [] [hours:]minutes
 - Interconnect type: Gigabit
 - Computing queue: normal (Active, 0 jobs, 0 running)
 - ☐ Exclusive Job
 - ☒ Use local configuration
 - [Submit]



The screenshot displays two overlapping web portals. The background portal is the 'Fiat CAE Portal', which features a navigation menu on the left with links to 'Home', 'My data', 'My jobs', 'All jobs', 'Cluster status', and 'Logout'. The main content area is titled 'CAE PORTAL' and includes a 'Data Manager' section for 'LSDYNA'. This section contains fields for 'JOB DESCRIPTION', 'INPUT FILE', 'QUEUE SELECTION', 'N. CPU (MAX. 8)', 'MEMORY', 'VERSION', 'RESTART FILE', and 'ADDITIONAL OPTIONS', along with a 'SUBMIT JOB' button. A 'Service offerings' sidebar lists various simulation tools: LSDYNA, NASTRAN, ABAQUS, ADAMS, POWERFLOW, CFDPP, MCFD, PAMCRASH, AKUSMOD, and Data Host. The foreground portal is the 'Audi World Site - News - Microsoft Internet Explorer'. It features a navigation bar with 'stage', 'models', 'service', 'facts', and 'news'. The main content area is titled 'Audi Corporate ASP Powered by EnginFrame + FlowGuide' and includes a section for 'AudiPamcrash_preprocessed'. This section contains a list of links (AudiPamcrash_preprocessed, audipam, Dyna3D_new, AudiPamcrash, simpleInterface, anotherInterface), a text input field for 'LSF hosts', a 'Projektname' field, a 'Berechnungsfall' field, an 'Input Deck' field, and checkboxes for 'Auslieferung in Eingabeverzeichnis?', 'Restartfiles ins Eingabeverzeichnis?', and 'Auslieferung ins Archiv?'. The 'Pamcrash Version' is set to '98'. The bottom of the Audi portal has a navigation bar with 'Home', 'Your jobs', 'Your data', 'Cluster info', 'Support', and 'Logout'. A status bar at the bottom indicates 'Operazione completata. Errori nella visualizzazione della pagina.'

EnginFrame Mechanical Design Automation demo site! - Microsoft Internet Explorer

enginframe MECHANICAL GRID PORTAL

My jobs | My data | Cluster load | Logout

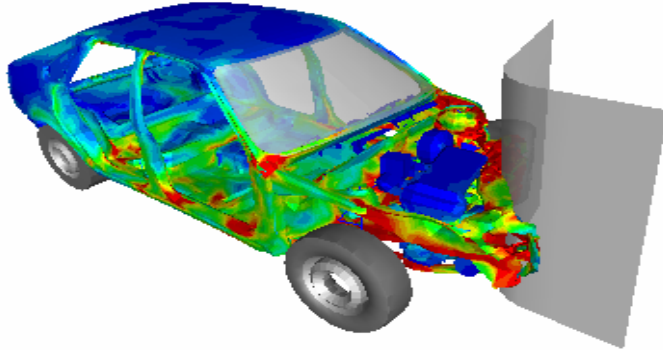
Service offerings

- LIBRARY definition
- Mechanical FEA services
- Mechanical CFD services
- Mechanical Crash services

Directory contents - Isdyna simulation

File	Size	Date
lsdyna.txt	3792	Dec 20, 2004 12:25:28 PM
car.vtf	2518176	Dec 20, 2004 12:29:42 PM

simulation



Frame: 9/9
Step: 5

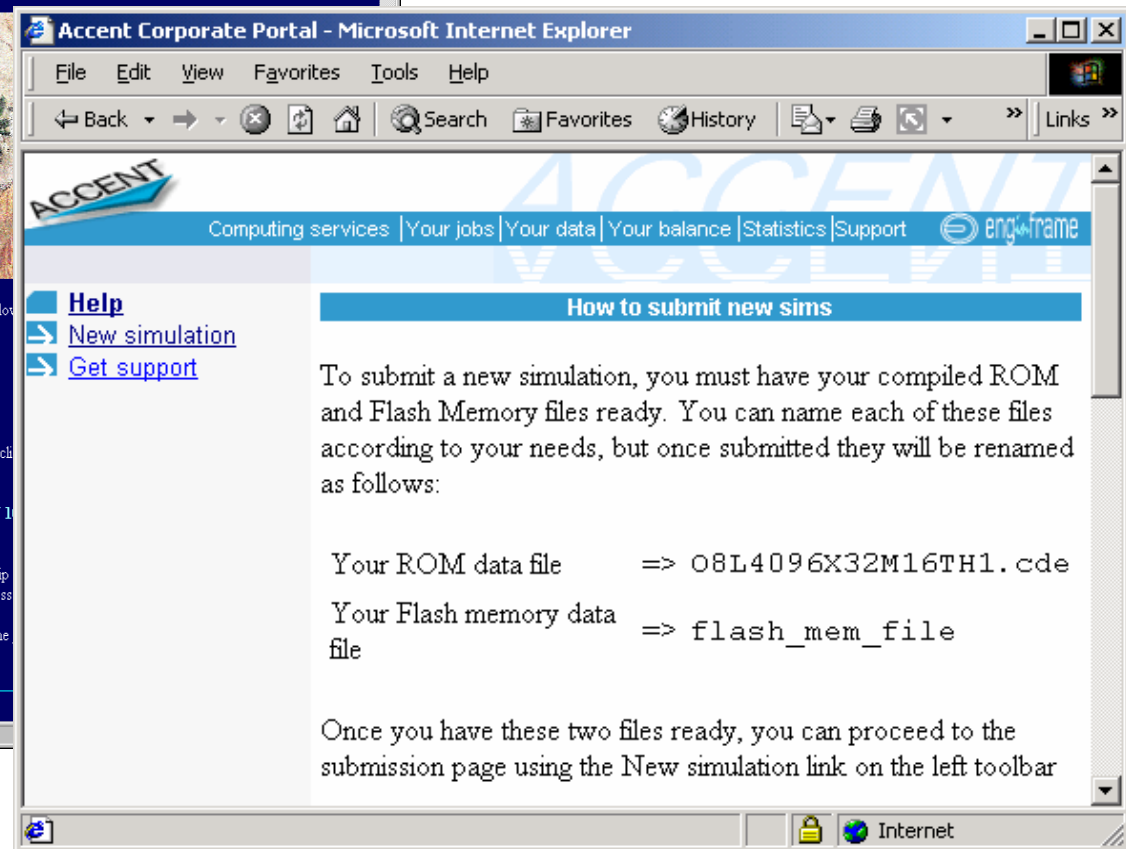
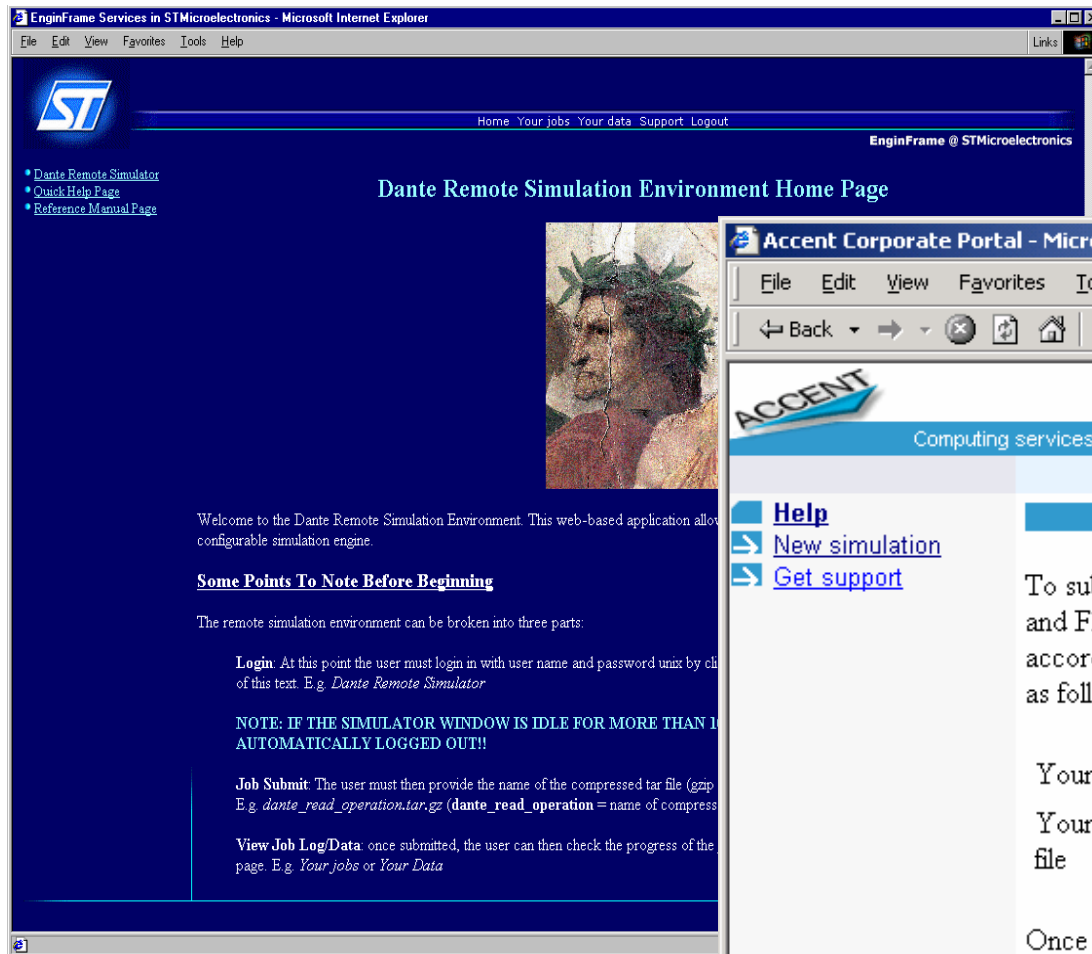
1.5e+008
1e+008
5e+007
0

Frame: 9/9
Step: 5

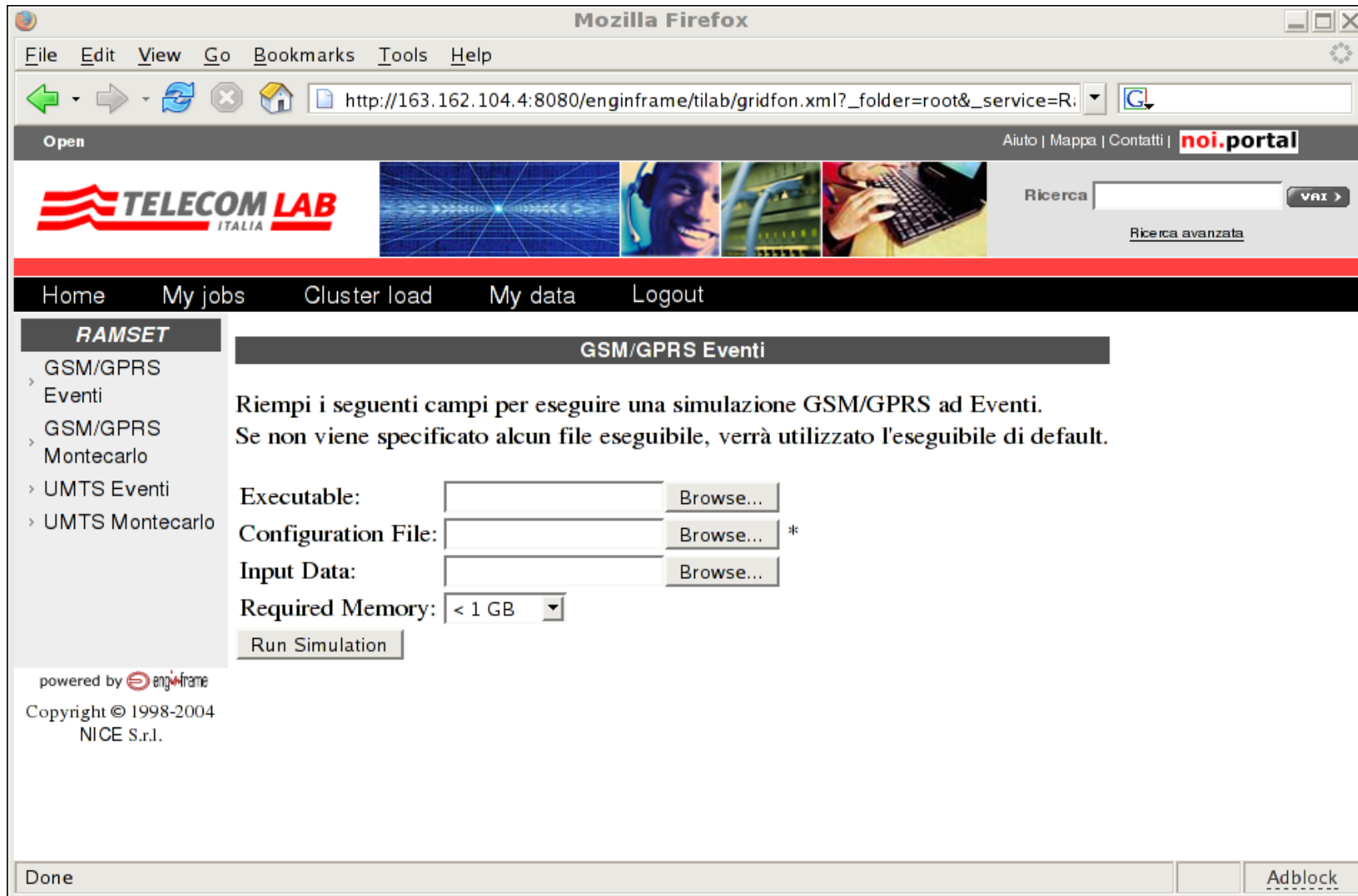
Navigation:

ID	Time	Status	Host	Name
26004	Dec 20 12:23	DONE	antilla	lsdyna simulation

Resource usage: CPU: 105.5s.



Black-box for EDA simulation



The screenshot shows a Mozilla Firefox browser window displaying the Telecom Italia Lab Grid Portal. The address bar shows the URL: `http://163.162.104.4:8080/enginframe/tilab/gridfon.xml?_folder=root&_service=R.`. The page features the Telecom Italia Lab logo, a navigation menu with links like Home, My jobs, Cluster load, My data, and Logout, and a search bar. The main content area is titled "GSM/GPRS Eventi" and contains instructions for running a simulation. It includes input fields for Executable, Configuration File, and Input Data, each with a "Browse..." button. There is also a "Required Memory" dropdown menu set to "< 1 GB" and a "Run Simulation" button. The footer of the page mentions "powered by enginframe", "Copyright © 1998-2004 NICE S.r.l.", and a status bar at the bottom with "Done" and "Adblock" buttons.

ACCENT

your ideas made real

File Transfer

Simulation

Help

Support

Logout DGENV

powered by enginFrame

File Transfer Services

Manage Datasets

Choose Projects

Account: user1

DGENV test user - DGENV

Upload Files

Subject

Select files

Sfoglia...

Recipients

Select...

Message

Submit

Datagate - Internal Users Area

Modifica Visualizza Preferiti Strumenti ?

Avanti Termina Aggiorna Pagina iniziale Cerca Preferiti Cronologia Posta Collegamenti

DataGate Home Support Logout
powered by engFrame

Service offerings

[List Incoming Files](#)
[List Outgoing Files](#)
[Submit file](#)

Submit file

Which supplier? NICE srl, Salvo Maccarone

Which File? Sfoglia...

☒ CAD file conversion?

Comments

This is the first draft.

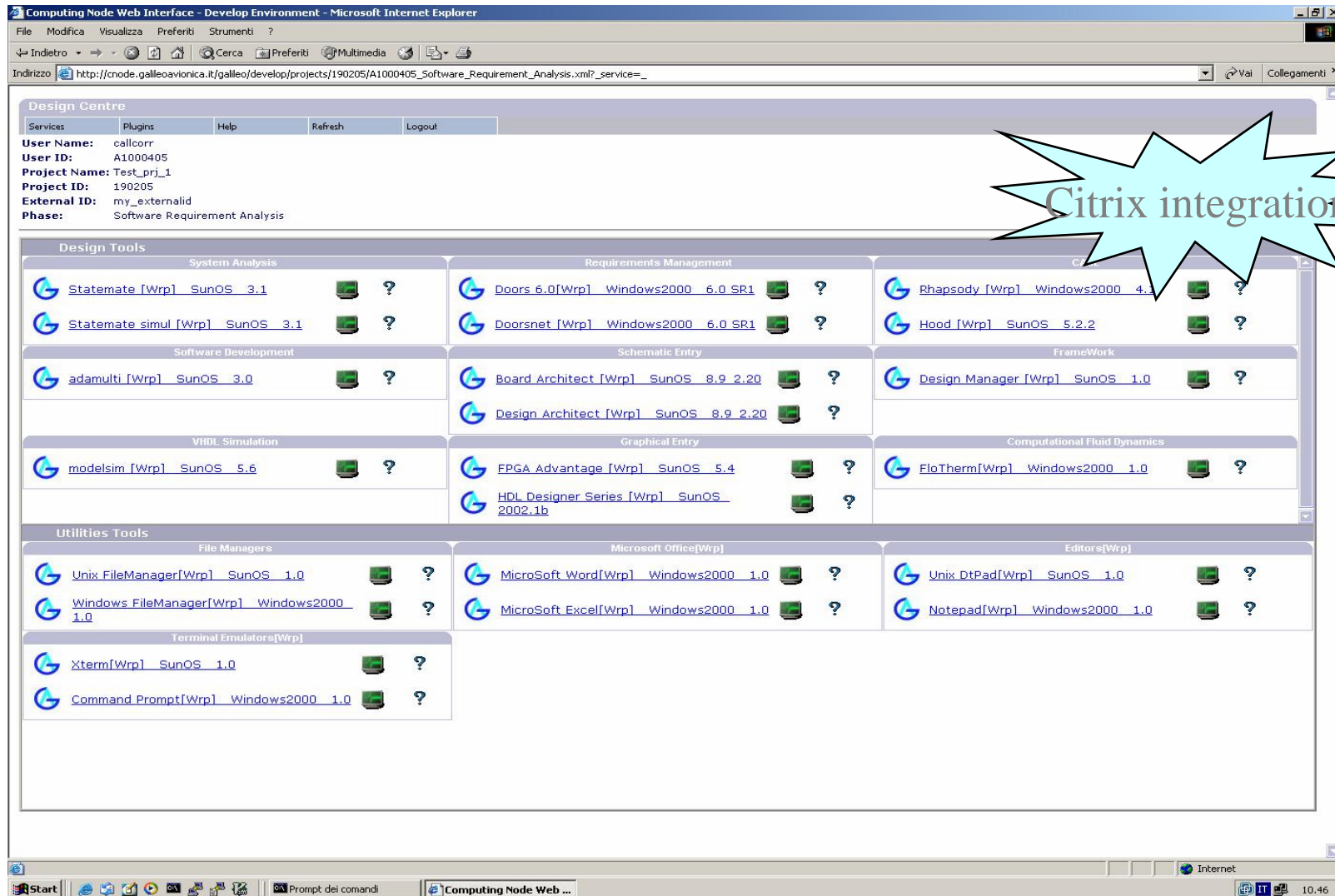
To do:

- checking conformance to FEA rules
- boundary checking
- first documentation update

Process file

(C) Copyright [NICE](#), 2001

Internet



The screenshot displays the 'Computing Node Web Interface - Develop Environment' in a Microsoft Internet Explorer browser. The interface is organized into several sections:

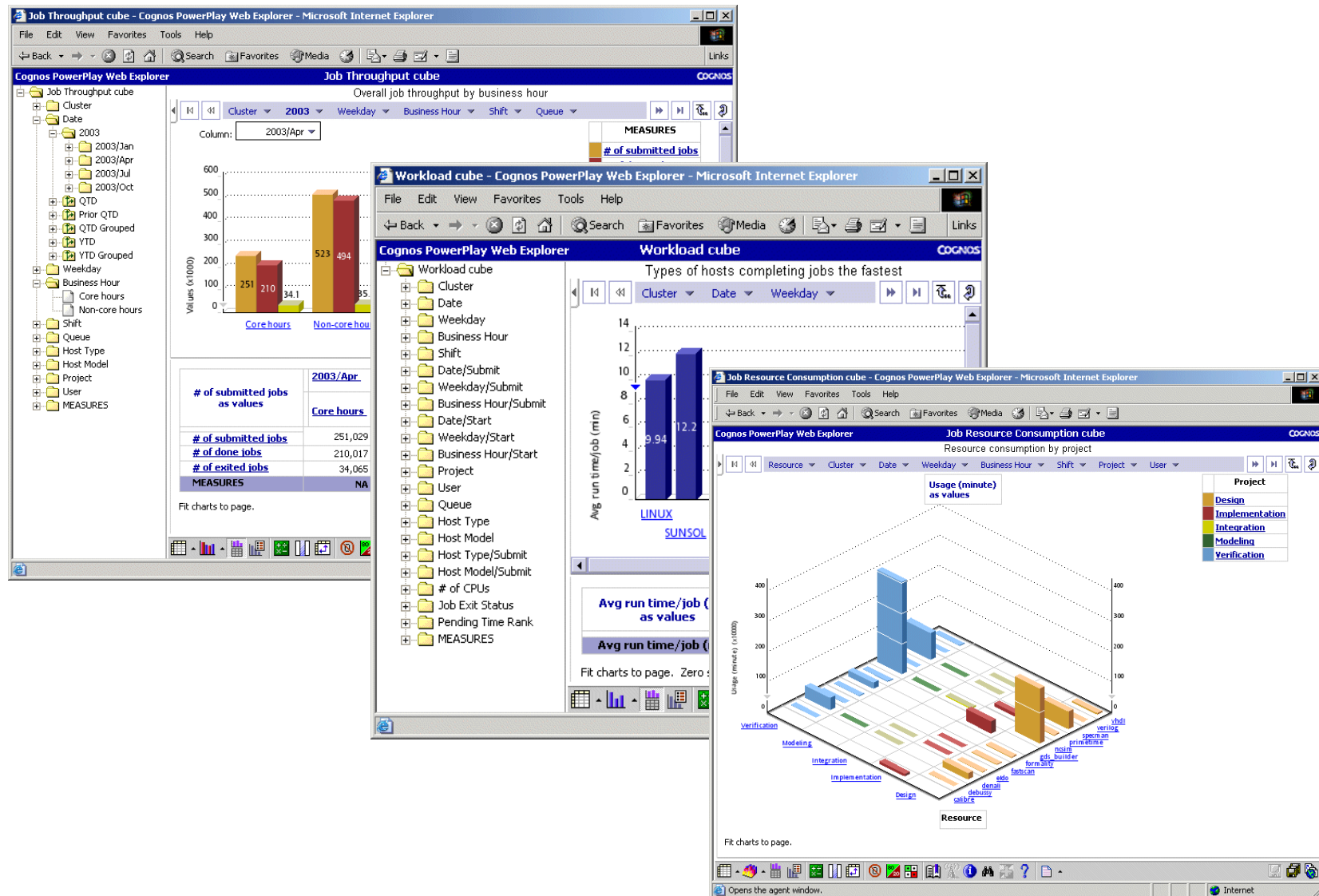
- Design Centre:** Includes user information (User Name: callcorr, User ID: A1000405, Project Name: Test_prj_1, Project ID: 190205, External ID: my_externalid, Phase: Software Requirement Analysis) and navigation links (Services, Plugins, Help, Refresh, Logout).
- Design Tools:** A grid of tool icons and links categorized into:
 - System Analysis:** Statestate [Wrp] SunOS 3.1, Statestate simul [Wrp] SunOS 3.1.
 - Requirements Management:** Doors 6.0[Wrp] Windows2000 6.0 SR1, Doorsnet [Wrp] Windows2000 6.0 SR1.
 - Software Development:** adamulti [Wrp] SunOS 3.0.
 - Schematic Entry:** Board Architect [Wrp] SunOS 8.9 2.20, Design Architect [Wrp] SunOS 8.9 2.20.
 - FrameWork:** Design Manager [Wrp] SunOS 1.0.
 - VHDL Simulation:** modelsim [Wrp] SunOS 5.6.
 - Graphical Entry:** FPGA Advantage [Wrp] SunOS 5.4, HDL Designer Series [Wrp] SunOS 2002.1b.
 - Computational Fluid Dynamics:** FloTherm[Wrp] Windows2000 1.0.
- Utilities Tools:**
 - File Managers:** Unix FileManager[Wrp] SunOS 1.0, Windows FileManager[Wrp] Windows2000 1.0.
 - Microsoft Office[Wrp]:** MicroSoft Word[Wrp] Windows2000 1.0, MicroSoft Excel[Wrp] Windows2000 1.0.
 - Editors[Wrp]:** Unix DtPad[Wrp] SunOS 1.0, Notepad[Wrp] Windows2000 1.0.
 - Terminal Emulators[Wrp]:** Xterm[Wrp] SunOS 1.0, Command Prompt[Wrp] Windows2000 1.0.

A blue starburst graphic with the text 'Citrix integration' is overlaid on the right side of the interface.

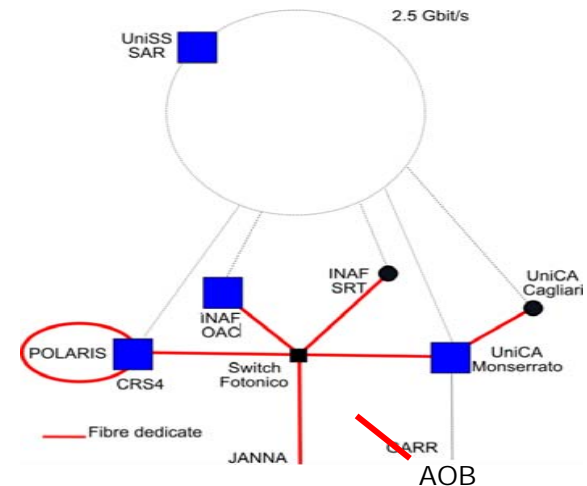
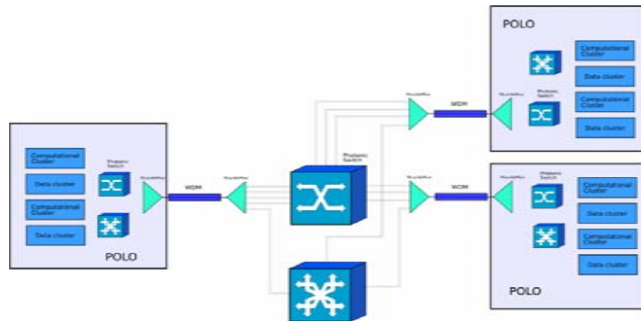
Centralized eDesign Services



<http://www.GridAge.com>

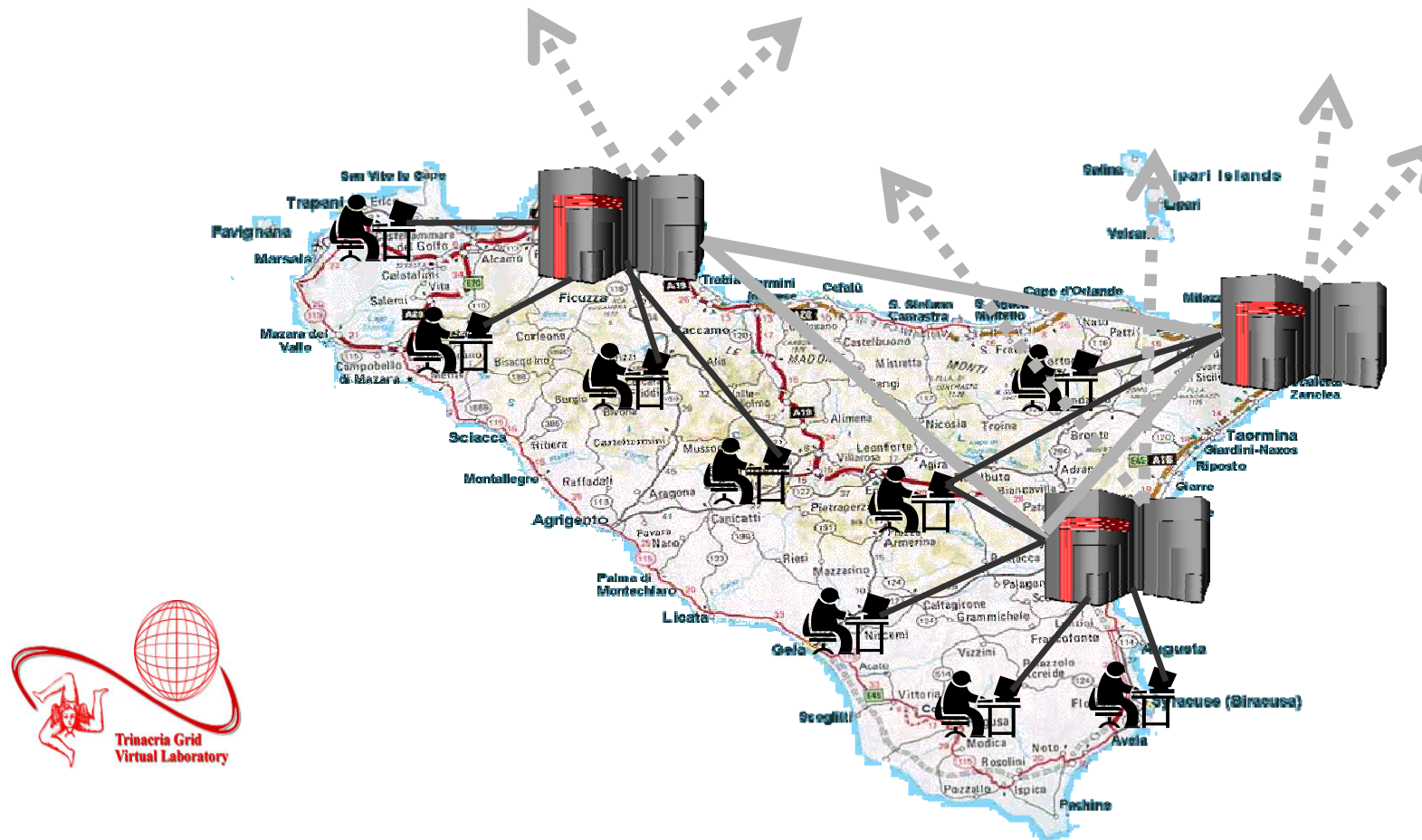


- **Dedicated to the support of scientific & technological research**
- **Based on high speed networks connecting**
 - Research institutions
 - Medical institutions
 - ...
- **Network core on dark fibers**
 - Bandwidth Unlimited Computing



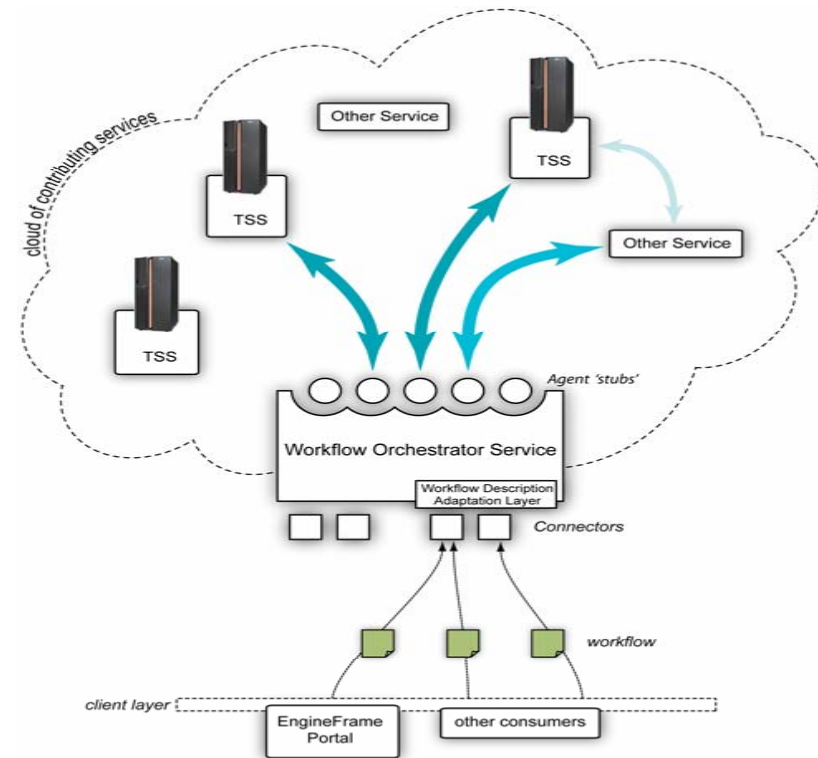
- **Orthogonalization between “glass pipes” and illumination technology**
 - “Future proof”: will survive the 10GbE to 40GbE transition (2007?)
 - Can support both GbE and Infiniband
- **“Application driven” network configuration**
 - Explicit allocation of lambdas to multi-centers meta computers

Department of Physics and Astronomy of the Catania University and INFN of Catania



Project goals

- **Simplify users'**
 - life (focus on problems)
 - way of perceiving the GRID
- **Fill an existing gap**
 - between middleware and portals
- **EnginFrame + A-WARE + UNICORE/GS aim to be a completely integrated solution**
- **Contribute to the standards**



**An easy Way
to Access
GRID
Resources**

Thanks for your attention!

Q&A

