



Enabling Grids for E-science

NA3 Activity – Training and Induction

**Brendan Hamill, NA3 Activity Manager,
NeSC, University of Edinburgh**

*EGEE-II 1st EU Review (CERN)
15-16 May 2007*

www.eu-egee.org



- **NA3 – Training and Induction**
 - Objectives
 - Organisation

- **Achieving Objectives**
 - Training Course delivery
 - e-Learning development
 - T-Infrastructure
 - Editorial Task Force (+ UIG)

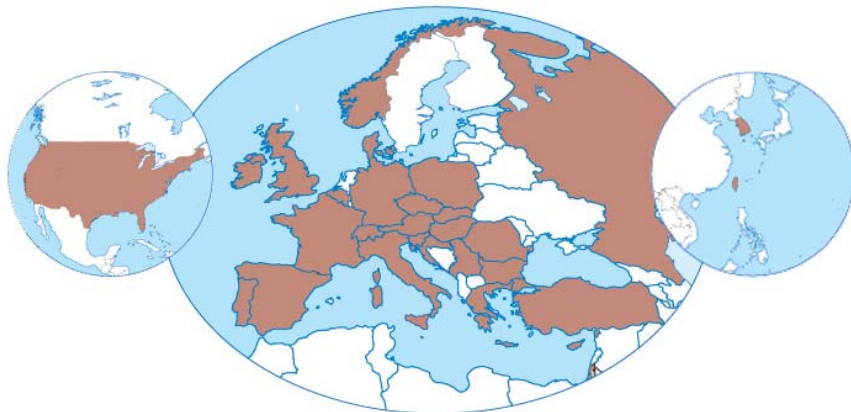
- **Issues & Plans**

- **Summary**

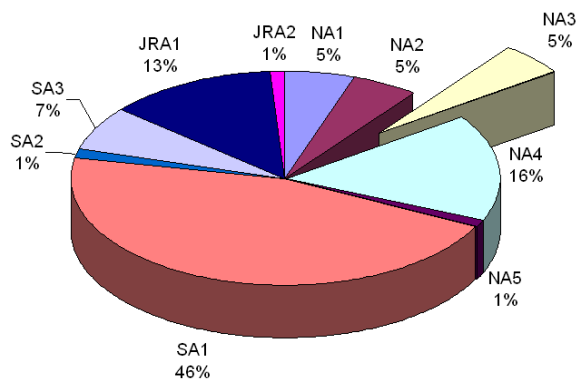
- **Expand portfolio of training materials & courses**
- **Train a wide variety of EGEE users (internal/external)**
- **Develop effective mechanisms for training end-users of the EGEE infrastructure**
- **Enhance e-Learning structure and provision of t-Infrastructure**
- **Validate cohorts of trainers & compile directory**
- **Collaborate in cross-activity initiatives**

- **Activity Manager – Brendan Hamill (UEDIN)**
- **Deputy Activity Manager – Gergely Sipos (MTA-SZTAKI)**
- **T-Infrastructure – Roberto Barbera/Emidio Giorgio (INFN)**
- **e-Learning/Digital Library – Boon Low (UEDIN)**
- **Training Team (UEDIN)**
- **Editorial Task Force (UEDIN / INFN / MTA-SZTAKI / CERN)**
- **Federation/Partner level NA3 leaders**

NA3 Partners



EGEE-II Budget



Funded Partners

Short Name	Country	Total PMs
JKU	Austria	24
UIBK	Austria	12
CESNET	Czech Rep.	12
MTA SZTAKI	Hungary	24
ICM-UW	Poland	12
PSNC	Poland	12
IISAS	Slovakia	12
JSI	Slovenia	6
UEDIN	UK	144
CSCS	Switzerland	12
CNRS	France	24
FZK	Germany	24
INFN	Italy	96
ULB	Belgium	12
UKBH	Denmark	24
UiB	Norway	12
IHEP	Russia	36
PNPI	Russia	24
IPP-BAS	Bulgaria	24
UCY	Cyprus	12
GRNET	Greece	24
TAU	Israel	24
ICI	Romania	24
LIP	Portugal	12
CSIC	Spain	12
RED.ES	Spain	12
IPB	Serbia	24
TUBITAK-ULAKBIM	Turkey	24
SRCE	Croatia	24
Total		738

NA3
statistics:

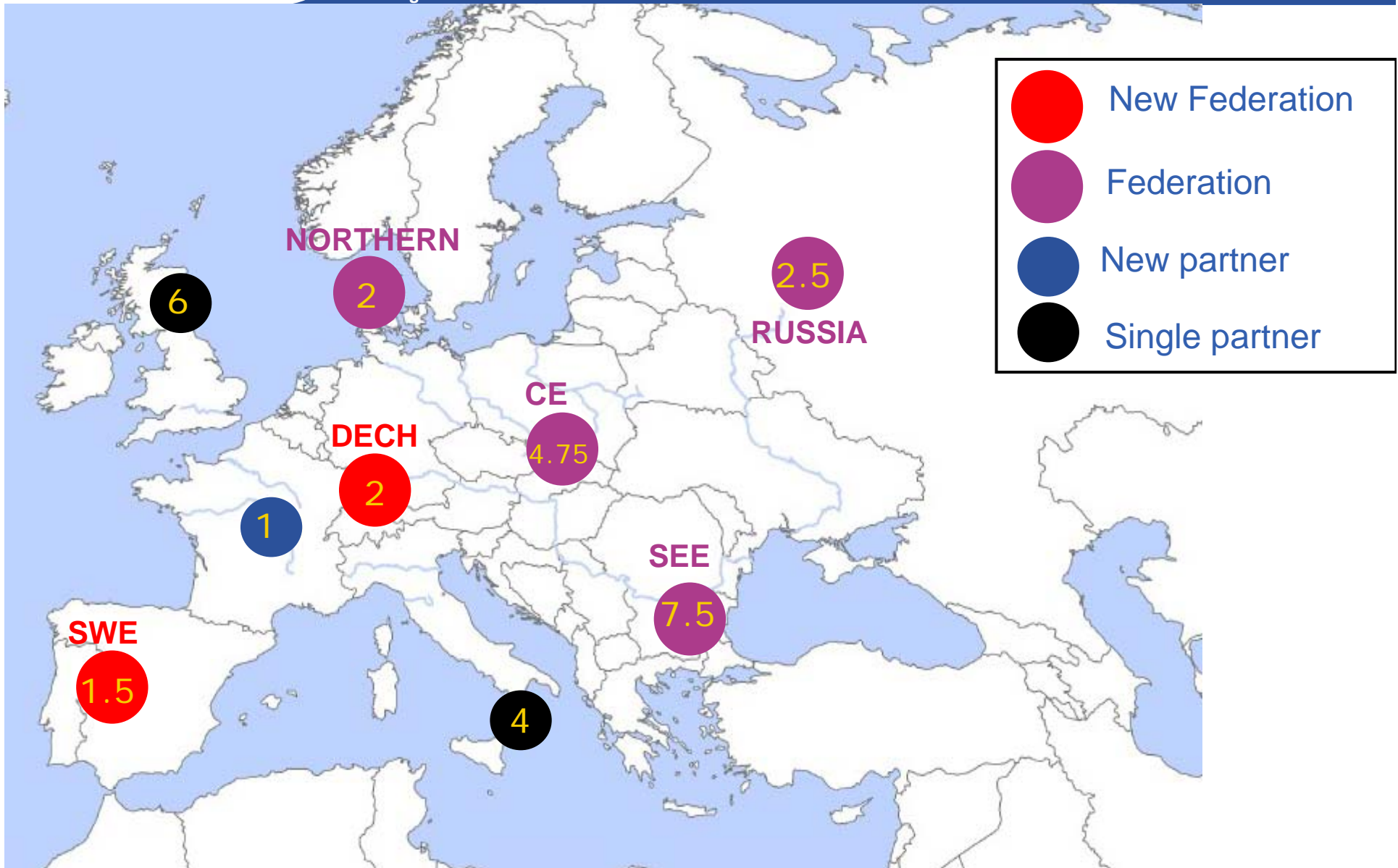
32 Partners
in 26
countries

~31 FTEs

194
individuals

4.8% of
project
budget





- **Events Database has feedback from >65% of training events held since start of EGEE-II**
- **Overall target (*for both years of the project*) of 1500 participant-days has already been exceeded (>3300)**
- **All NA3 partners have run at least one training event in EGEE-II**
- **110 training events, with >1600 participants have been held in 62 different locations**
- **Most active partners (participant-days/joint events):**
 - FZK, MTA-SZTAKI, INFN, GRNET, PNPI/IHEP, UEDIN
- **NA4 and SA1 activity members also contribute to training events**

Training Events and Registration

[NA3 Home](#)

**Events &
Registration**

[Suggestions &
Requirements](#)

[Training Material](#)

[Add an Event](#)

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Search Events by Title

[Advanced Search](#)

Search

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No	Title	Location	Dates	Summary/Registration
61.	GCCP 2006 - the 2nd International Workshop on Grid Computing for Complex Problems	Bratislava, Slovakia	27 - 29 November, 2006	Summary
62.	EUMEDGRID Site Managers Tutorial	Tunis, Tunisia	27 - 29 November, 2006	Summary
63.	EUChinaGrid 3rd tutorial	Beijing, China	25 - 26 November, 2006	Summary
64.	Porting applications to the EGEE and the NGS using the P-GRADE/GEMICA portal	Reading, United Kingdom	24 November, 2006	
65.	Grid Computing EGEE and the gLite middleware - Induction	Reading, United Kingdom	22 - 23 November, 2006	Summary
66.	Grid Technologies: Introduction and Practice	Nicosia, Cyprus	21 - 22 November, 2006	
67.	Grid Computing and the National Grid Service - Induction	Reading, United Kingdom	20 - 21 November, 2006	Summary
68.	Advanced Course on Grid Technologies	Warsaw, Poland	15 - 18 November, 2006	Summary
69.	EGEE tutorial: Practical introduction to the EGEE middleware	Saint-Petersburg, Russia	14 November, 2006	Summary
70.	Grid Computing and the National Grid Service - Induction	Edinburgh, United Kingdom	9 - 10 November, 2006	Summary
71.	Advanced Issues in Grid Technologies NDC Greece	National Documentation Center Athens, Greece	9 - 10 November, 2006	Summary
72.	User training and induction	Bucharest, Romania	8 November, 2006	
73.	Tutorial traitement sismique sur Géocluster	Massy, France	7 - 10 November, 2006	Summary
74.	7th EELA Tutorial (Users)	Merida, Venezuela	7 - 9 November, 2006	Summary
75.	GGUS Training	Karlsruhe, Germany	6 - 7 November, 2006	
76.	EGEE-II/SEE-GRID-2 gLite Training Event	Podgorica, Montenegro	2 November, 2006	Summary
77.	Grid Computing - gLite introduction course	Bergen, Norway	1 November, 2006	
78.	Advanced Issues in Grid Technologies UOA Greece	University of Athens, Greece	25 - 26 October, 2006	Summary
79.	EGEE Grid Tutorial	Saint Petersburg, Russia	24 October, 2006	Summary
80.	Advanced Issues in Grid Technologies	University of Athens, Greece	23 - 24 October, 2006	Summary

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Training Event Locations

Location	Events	Location	Events	Location	Events
Ankara	2	Itacuruca	1	Porto	1
Athens	8	Karlsruhe	4	Protvino	1
Beijing	3	Kiev	1	Reading	3
Bergen	2	Kragujevac	1	Riga	1
Bratislava	1	La Plata	1	Rio de Janeiro	2
Brno	1	Linz	1	Rio Patras	1
Brussels	8	London	5	Roma	1
Bucharest	2	Madrid	4	Saint Petersburg	7
Budapest	2	Manila	1	Sinaia	1
Catania	1	Marrakech	2	Slapanice u Brna	1
Chania	1	Marseille	1	Sofia	3
Clermont-Ferrand	2	Massy	1	Taipei	1
Didcot	1	Merida	2	Tartu	1
Dubna	1	Miskolc	1	Tel Aviv	1
Edinburgh	4	Naples	1	Timisoara	1
Eilat	1	Nicosia	2	Trento	1
Gatchina	4	Novi Sad	1	Tunis	2
Geneva	6	Paris	2	Vilnius	2
Groningen	1	Plovdiv	1	Warsaw	1
Helsinki	1	Plymouth	1	Zagreb	3
Innsbruck	2	Podgorica	1	TOTAL LOCATIONS	62







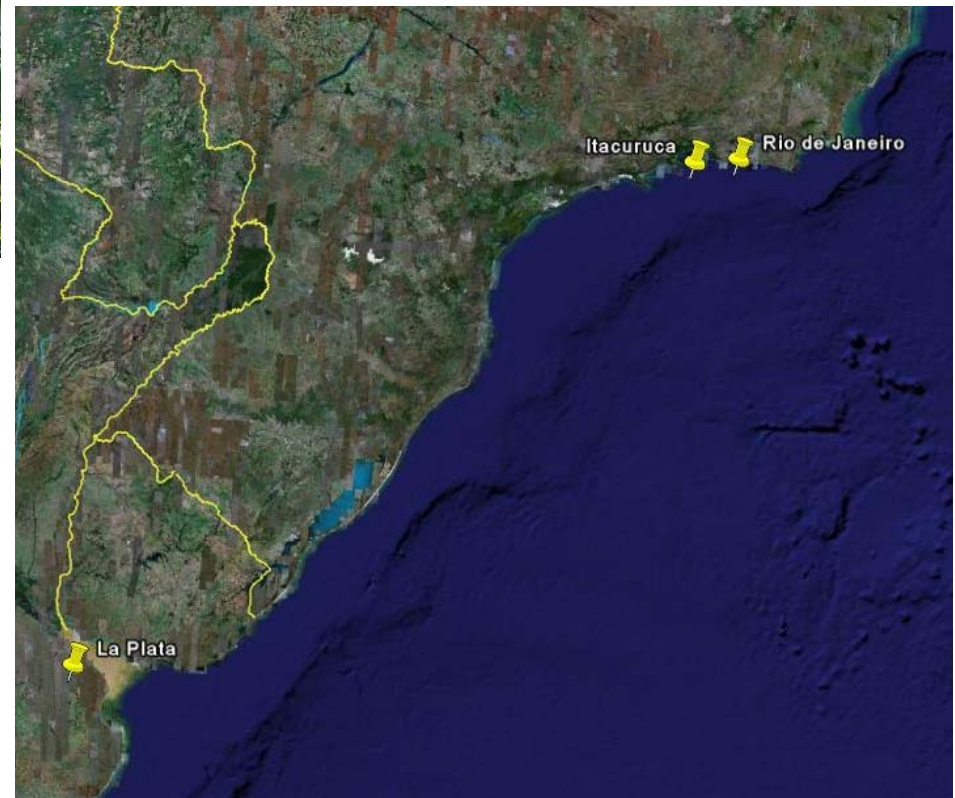


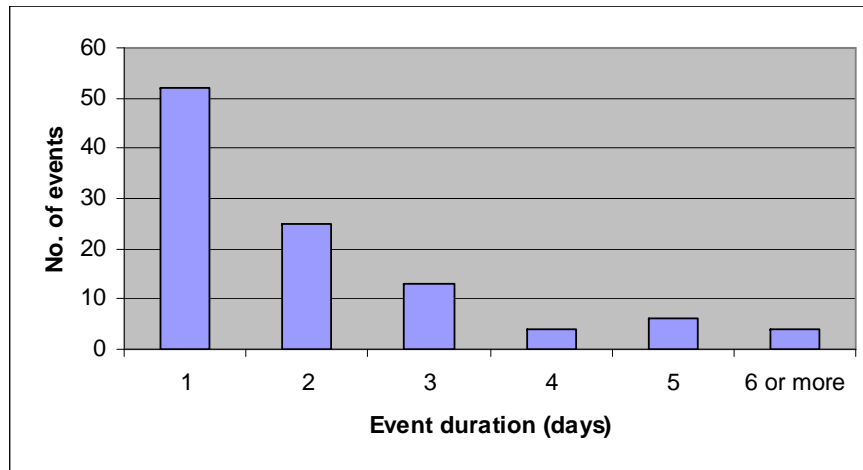
- **“Training the Trainers” events are designed to enhance the expertise and autonomy of project partners in running training events for their local interest-groups while retaining high quality of training and feedback**
- **Four “Training Trainers” events have now been held during EGEE-II**
- **A directory of accredited trainers has been drawn up:**
 - Currently includes 21 entries:
 - 14 from NA3 activity
 - 4 from SA1 and NA4 activities
 - Expected to expand to >50 entries in year 2 of project



Venezuela

Argentina, Brazil



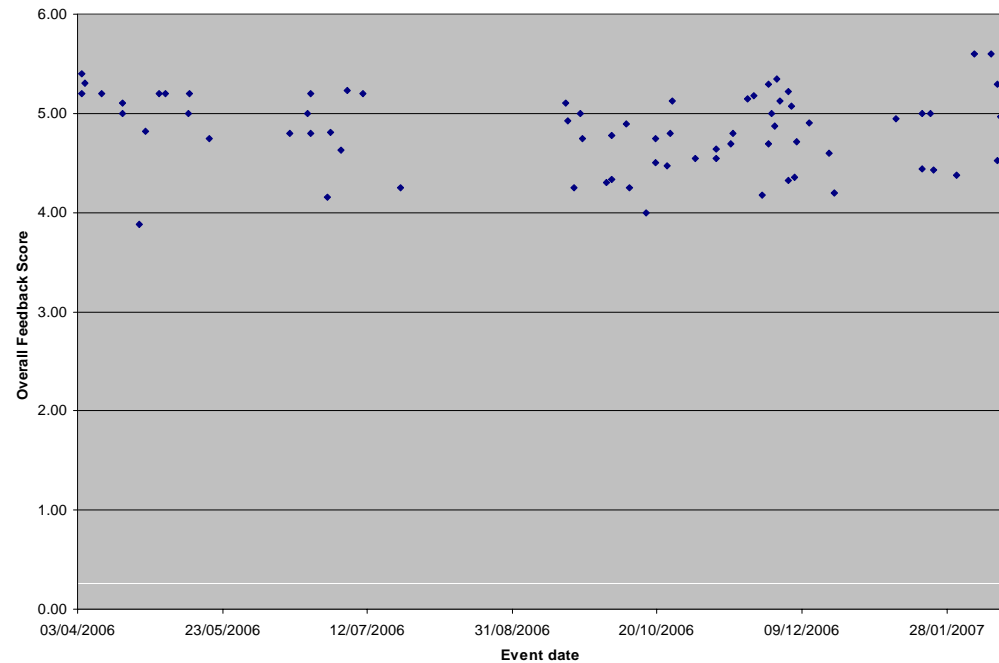


< Event Duration

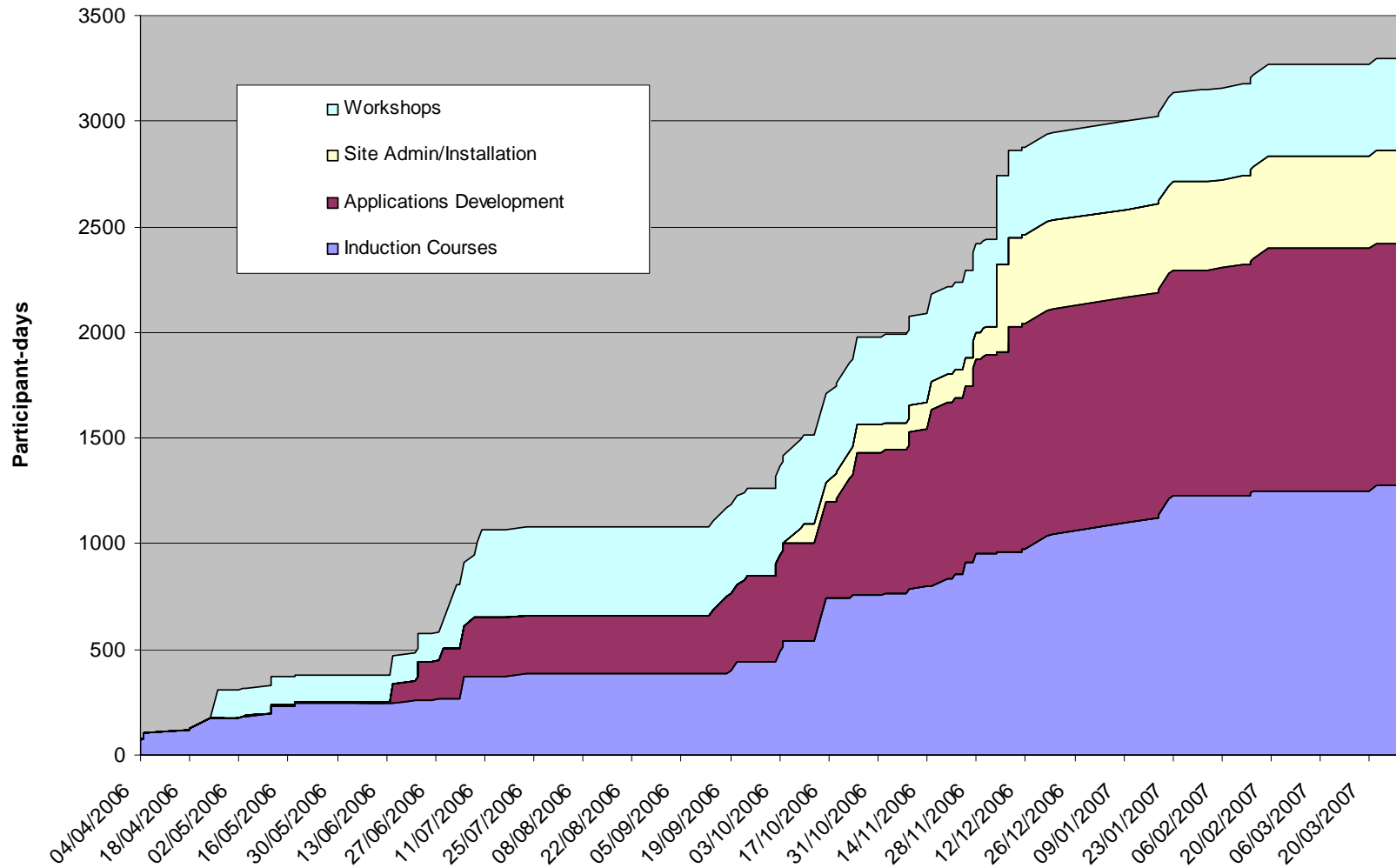
Average course length 2.2 days

Feedback Ratings over time >

Average evaluation score 4.82 (out of 6)



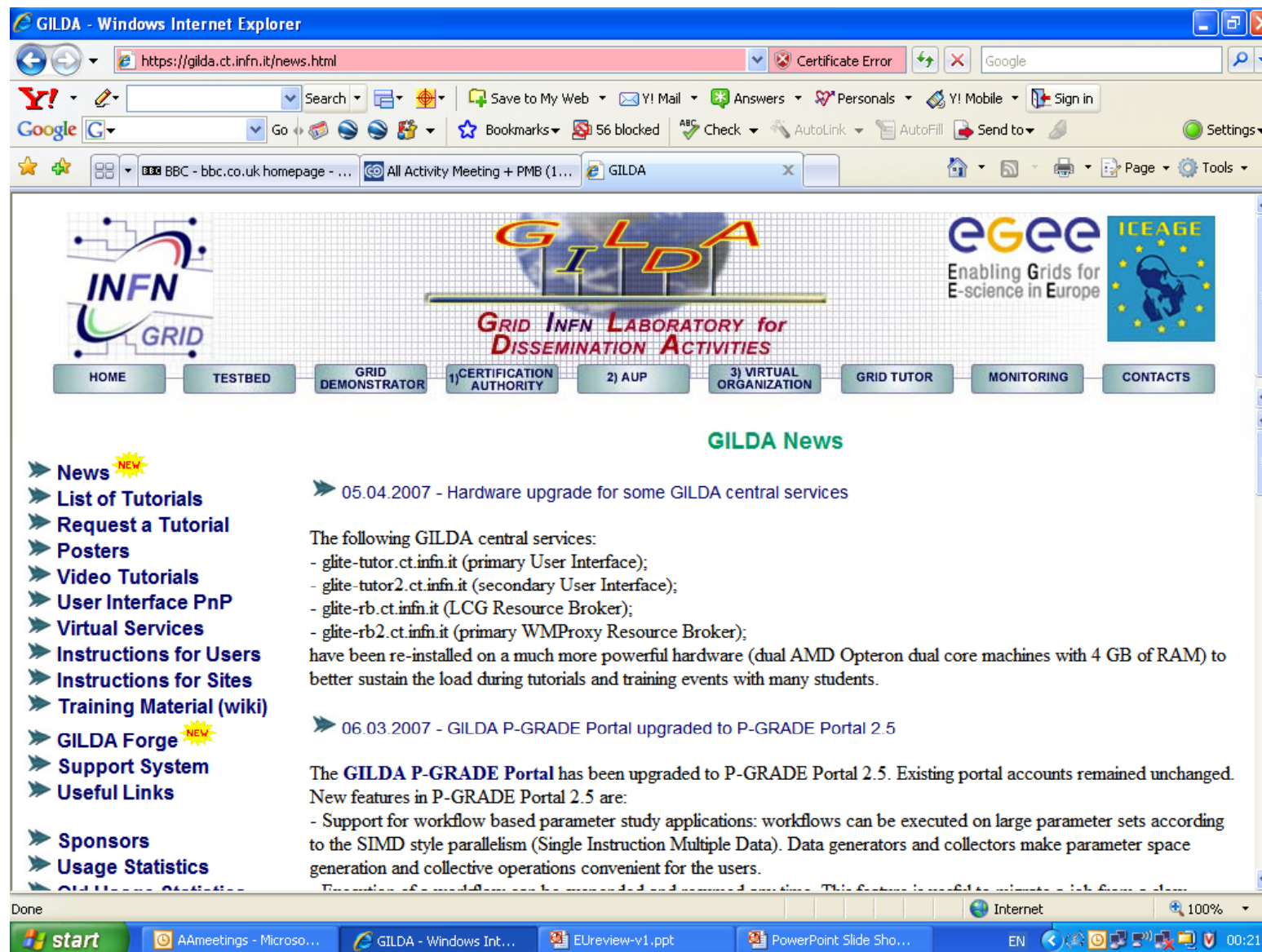
Cumulative Participant Days - EGEE-II Training Events



The Digital Library now contains over 4000 learning resources derived from EGEE events

- 73 articles
- 13 courses
- 316 events
- 53 modules
- 3926 presentations
- 70 tutorials
- 97 videos
- 27 ETF Exemplars

- Improved searching and sorting functionality
- Help system (“how to” articles)
- Web-content authoring service (> HTML files)
- Federated content support
- More multi-lingual content
(Russian, French, Greek, Bulgarian, Spanish)



INFN GRID

GILDA

EGEE Enabling Grids for E-science in Europe

ICEAGE

HOME TESTBED GRID DEMONSTRATOR 1) CERTIFICATION AUTHORITY 2) AUP 3) VIRTUAL ORGANIZATION GRID TUTOR MONITORING CONTACTS

GILDA News

- **News** ^{NEW}
- List of Tutorials
- Request a Tutorial
- Posters
- Video Tutorials
- User Interface PnP
- Virtual Services
- Instructions for Users
- Instructions for Sites
- Training Material (wiki)
- GILDA Forge ^{NEW}
- Support System
- Useful Links
- Sponsors
- Usage Statistics
- Old Home Statistics

➤ 05.04.2007 - Hardware upgrade for some GILDA central services

The following GILDA central services:

- glite-tutor.ct.infn.it (primary User Interface);
- glite-tutor2.ct.infn.it (secondary User Interface);
- glite-rb.ct.infn.it (LCG Resource Broker);
- glite-rb2.ct.infn.it (primary WMProxy Resource Broker);

have been re-installed on a much more powerful hardware (dual AMD Opteron dual core machines with 4 GB of RAM) to better sustain the load during tutorials and training events with many students.

➤ 06.03.2007 - GILDA P-GRADE Portal upgraded to P-GRADE Portal 2.5

The **GILDA P-GRADE Portal** has been upgraded to P-GRADE Portal 2.5. Existing portal accounts remained unchanged. New features in P-GRADE Portal 2.5 are:

- Support for workflow based parameter study applications: workflows can be executed on large parameter sets according to the SIMD style parallelism (Single Instruction Multiple Data). Data generators and collectors make parameter space generation and collective operations convenient for the users.

Done

start AMeetings - Microso... GILDA - Windows Int... EUreview-v1.ppt PowerPoint Slide Sho... EN 00:21

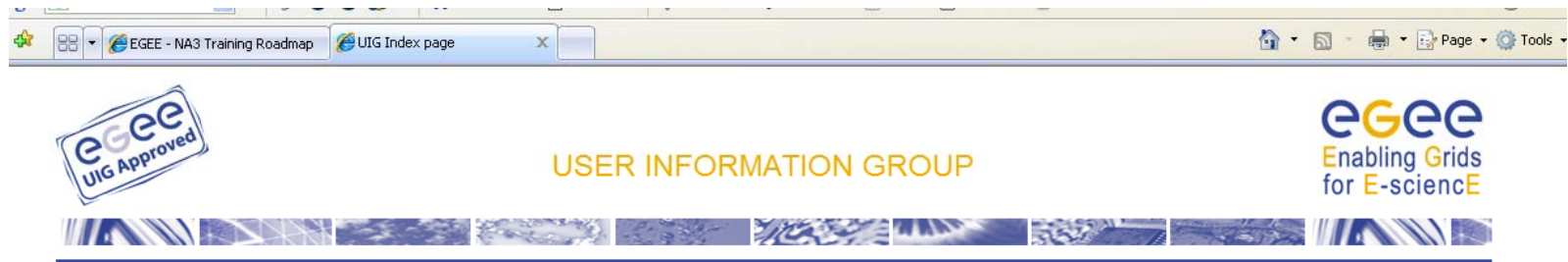
- **GILDA is an effective t-Infrastructure for EGEE and other European projects, providing resources and knowledge for training events**
- **Besides training events, GILDA is available around the clock for grid novices, with dedicated facilities**
- **The GILDA t-Infrastructure is currently supported by 12 sites, mostly managed on a best-effort basis**
- **Major efforts since EGEE'06 have been on improving the quality level of services offered, by installing monitoring tools**
- **Efforts have been made also on documentation and facilities offered to grid beginners**

- **GILDA is also available for applications porting using dedicated facilities**
- **Virtual/Plug'n'Play User Interfaces: preconfigured UIs installable on the majority of machines, freeing users from the requirement of an account on a “real” UI**
- **Support System : <http://gilda-support.ct.infn.it/>**
- **GILDA News: <https://gilda.ct.infn.it/news.html>**
- **Improved integration between GILDA and the P-GRADE grid portal from SZTAKI**

- **To improve reliability of the t-Infrastructure, standard EGEE monitoring procedures have been implemented:**
 - SAM (Service Availability Monitoring) has been installed
<https://sam.ct.infn.it/sam/sam.py>
 - Test results are summarized on a Google MAP page
https://gilda.ct.infn.it/google_maps/mysam.html
 - GILDA is also monitored by GStat
<http://goc.grid.sinica.edu.tw/gstat/gilda/>
GStat summarizes information published by the Information System, providing a compact view of data published in it, and spotting when sites have network or efficiency problems

- **Editorial Task Force (ETF):** intra-NA3 group, peer-reviewing and repurposing existing training materials (mainly presentations and tutorials) for online delivery.
- **User Information Group (UIG):** cross-activity group, performing an editorial and commissioning function in order to ensure provision of essential user information, certified as up to date. Providing a “one stop shop” for documentation on commonly-used processes in EGEE.

- **Phase 1 (completed September 2006)**
 - Set up ETF wiki and web-pages, commenting initially on induction-level courses
- **Phase 2 (completed January 2007)**
 - Established exemplars for Induction, Sys Admin, Installation, Training Trainers (27 exemplars now complete)
 - Started on Application Developer courses
- **Phase 3 (future)**
 - All trainers to submit updated modules to improve exemplars and increase App. Dev. material



Site Index

The table below lists the titles of the current set of User Information Group Pages. Click on any title in the table to view the corresponding page. You may also view an abstract of each page by clicking the adjacent link.

<http://www.egee.nesc.ac.uk/uiig>

Page No	Title	
1-01	Getting an account on a User Interface	abstract
1-02	Getting a certificate	abstract
1-03	Registering with a Virtual Organisation	abstract
1-04	Setting up the UI environment	abstract
1-05	Proxy certificates	abstract
1-06	Preparing a simple job	abstract
1-07	Running a job	abstract
1-08	Monitoring a job	abstract
1-09	Getting back the output	abstract
1-10	Retrieving job output	abstract
1-11	Retrieving job history	abstract
1-12	List resources compatible with a job	abstract
1-13	Simple data management	abstract
2-01	Using the proxy renewal service	abstract
2-02	Job requirements on data	abstract
2-03	Advanced sandbox management	abstract
2-04	Preparing complex jobs	abstract
2-05	Running complex jobs	abstract
2-06	Querying the Information System	abstract
2-07	Service Discovery	abstract
3-01	Advanced data management	abstract
3-02	Using the Short-Deadline Job (SDJ) configuration	abstract



Getting a certificate



UIG Page No	Version No	Last review date	Next review date	Contact
1-02	1.01	10/01/2007	09/07/2007	uig-support@nesc.ac.uk

X.509 Certificates

The first requirement the user must fulfill is to be in possession of a valid X.509 certificate issued by a recognized Certification Authority (CA). The role of a CA is to guarantee that a user is who she claims to be and is entitled to own her certificate. It is up to the user to discover which CA she should contact. In general CAs are organised geographically and by research institute. Each CA has its own procedure to release certificates.

The following URL maintains an updated list of recognised CAs, as well as detailed information on how to request certificates from a particular CA:

<http://lcg.web.cern.ch/LCG/users/registration/certificate.html>

For many purposes it may be useful to install the root certificates of Grid CAs in a web browser and/or email client, as this will enable the validation of Grid certificates used in web servers and to sign email. (The way to do this is specific to each piece of software and hence cannot be covered here.) In particular users should usually install the root certificate for their own CA. The root certificates can be obtained from this URL:

<https://www.tacar.org/certs.html>

Requesting the Certificate

In order to obtain a certificate, a user must create a request to a CA. The request is normally generated using either a web-based interface or console commands. Details of which type of request a particular CA accepts can be found on each CA's website.

For a web-based certificate request, a form must usually be filled in with information such as the name of the user, home institute, etc. After submission, a pair of private and public keys are generated, together with a request for the certificate containing the public key and the user data. The request is then sent to the CA, while the private key stays in the browser, hence the same browser must be used to retrieve the certificate once it is issued.

The user must usually install the CA root certificate in her browser first. This is because the CA has to sign the user certificate using its private key, and the user's browser must be able to validate the signature.

For some CAs the certificate requests are generated using a command line interface. The following discussion describes a common scenario for command-line certificate application using a hypothetical `grid-cert-request` command. Again, details of the exact command and the requirements of each CA will vary and can be found on the CA's website.

- **11 Milestones & Deliverables completed**
- **4 Milestones & Deliverables due in year 2**
- **Only significant change from Description of Work:**

DNA3.2 Commercial grid training survey

postponed from M8 to M15 due to difficulty in identifying suitable contractors - survey now in progress

- **Collaboration with related projects (e.g. BEinGRID)**
- **Market survey of potential for commercial Grid training being performed by external consultants (Qi3, Cambridge, UK) – results due end July 2007**
- **Analysis of participants in past training events showed ~13 came from industrial backgrounds**
- **Grid School for Industrial Applications scheduled for July 2007, Catania, Sicily (not an EGEE event but will involve EGEE partners)**
- **Ongoing collaboration with Industry Task Force on training provision for industrial partners**

- **UIG**
 - *level 1 pages complete, level 2 & 3 pages will be more complex and require greater expertise to generate content*
- **Middleware releases**
 - *last gLite release required some reworking of course materials*
 - *next release should facilitate more advanced courses*
- **Site administrator training**
 - *curriculum being developed (with SA1) for new courses*
- **New related projects**
 - *may impact on travel costs in year 2 (e.g. EUIndiaGrid)*
- **VO/external project support**
 - *plan drafted, but lacking resources to implement it*
 - *synergy with site admin training*

- **NA3 partners have delivered >100 training events in the first year of EGEE-II, surpassing targets for the whole project and with wide geographical coverage**
- **e-Learning and t-infrastructure provision have been continuously enhanced during EGEE-II**
- **Deliverables and milestones all on schedule**
- **Participating in inter-partner and cross-activity collaborations (ETF, UIG)**
- **Expanding numbers of trainers by running “Training trainers” events, especially in new or distant NA3 partners**