



Enabling Grids for E-science

Training and Induction

Malcolm Atkinson, Head of NA3, UEDIN

EGEE 1st EU Review

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www.eu-egee.org

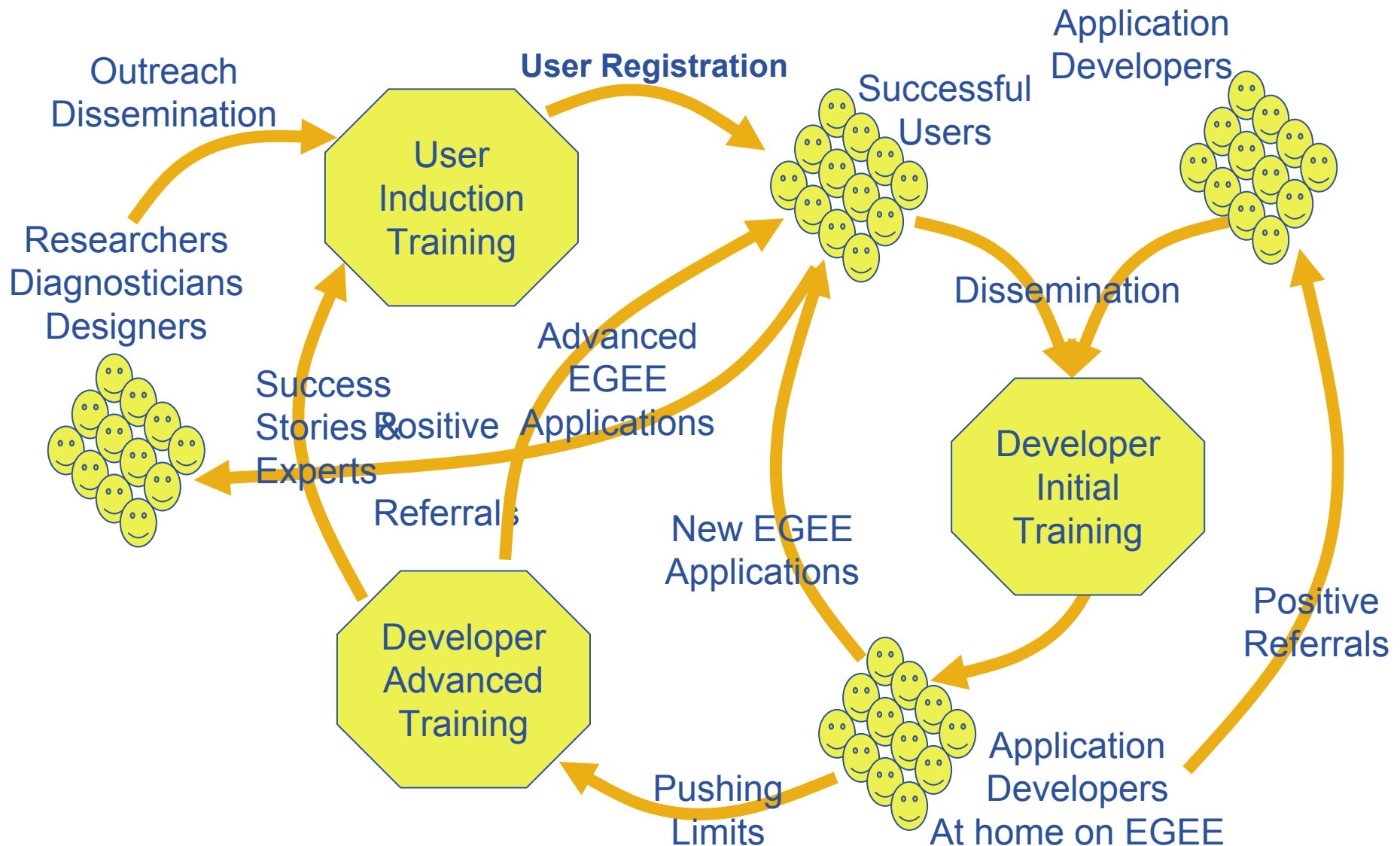


- **Who are the trainers and what are they for?**
- **Highlights of the Training Year**
- **Training Achievements**
 - Exceeding planned targets
 - Effective federation and collaboration
 - Pioneering new training infrastructure
- **T-Infrastructure Provision**
 - GILDA/GENIUS
 - Operations training
 - Training Repository & Course Support
- **Future Training & Issues**
- **Conclusions**

- **The EGEE training programme is built on a federation of 22 partners and close collaboration with other activities**
- **EGEE training has delivered well above planned targets**
 - raising grid awareness
 - gaining users
 - building teams
 - empowering developers

What do trainers do?

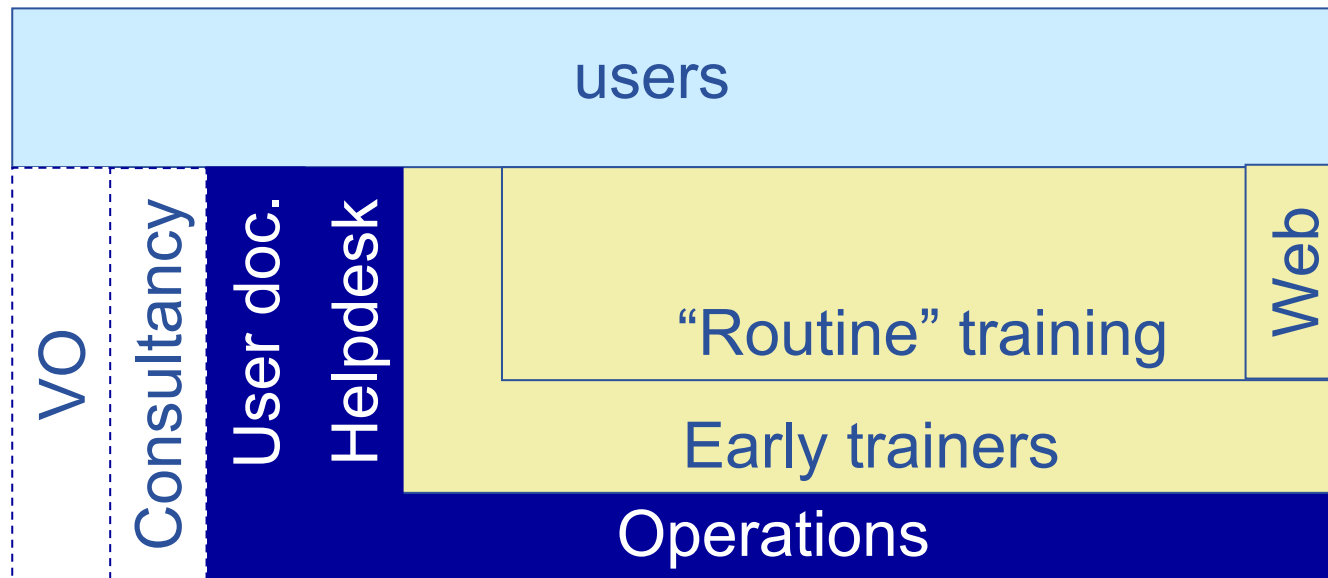
Trainers power Virtuous Cycles



Why do we train?

What are trainers for?

- **EGEE Goal**
 - many effective and active users in many locations
- **Technology is supported by a small number of people**
- **Training helps to make this feasible and scalable**
 - EDG demonstrated the necessity of training

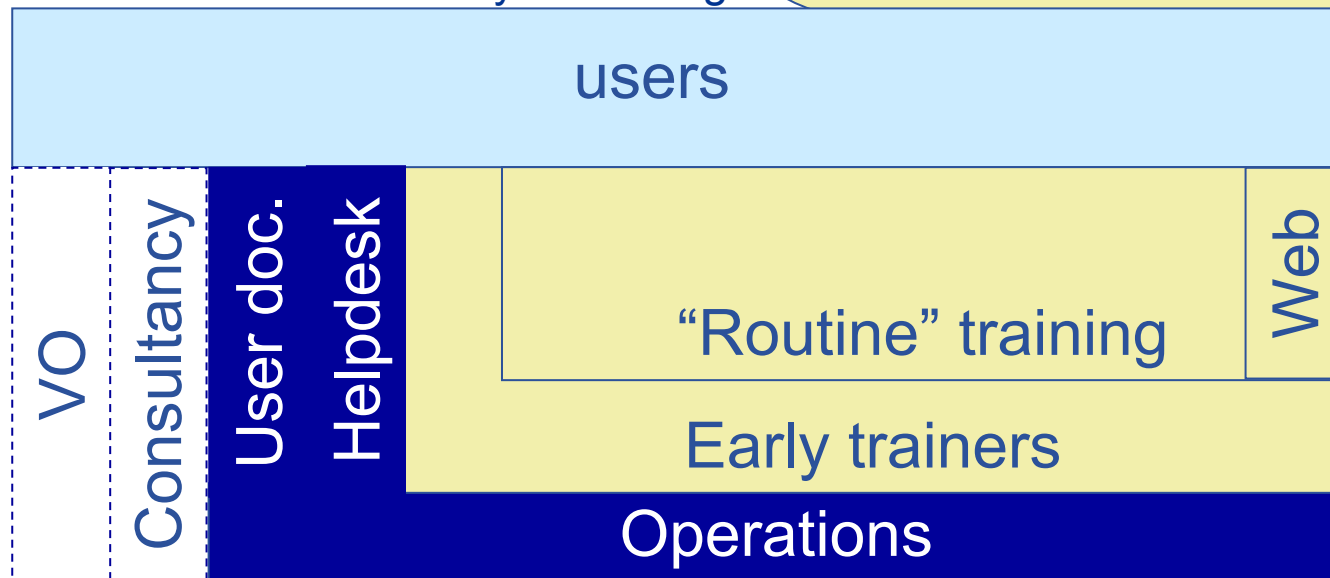


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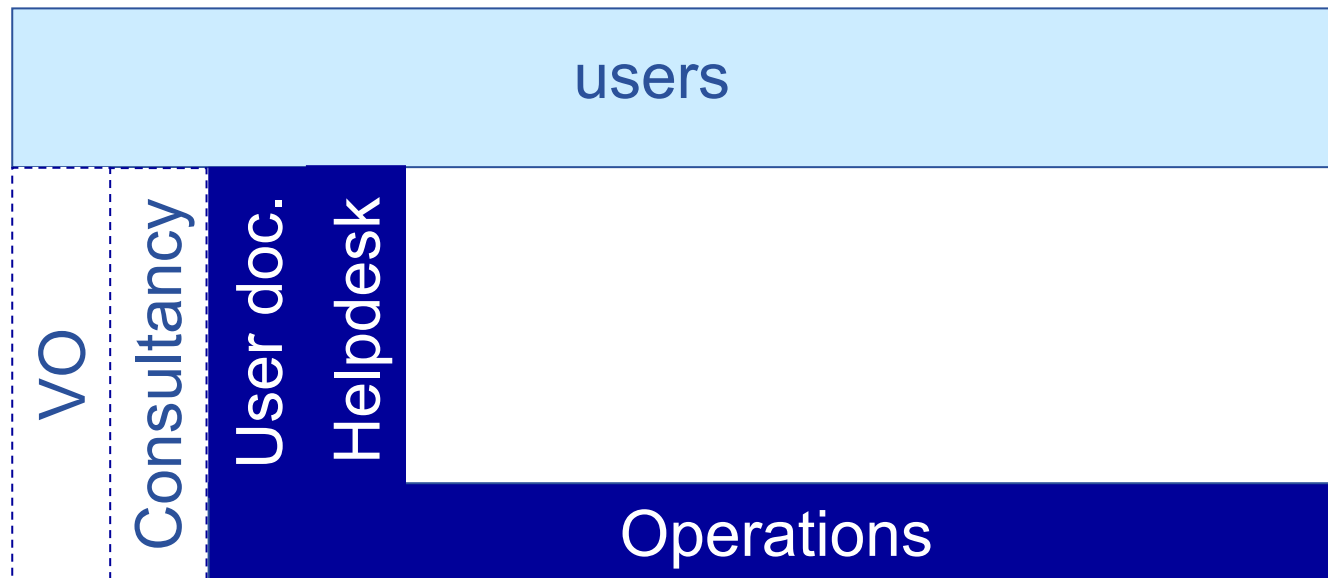
Increase trainer effectiveness

- Repository of Training Material
- Courses to train new trainers
- Self-paced Learning support



Poor training ⇒

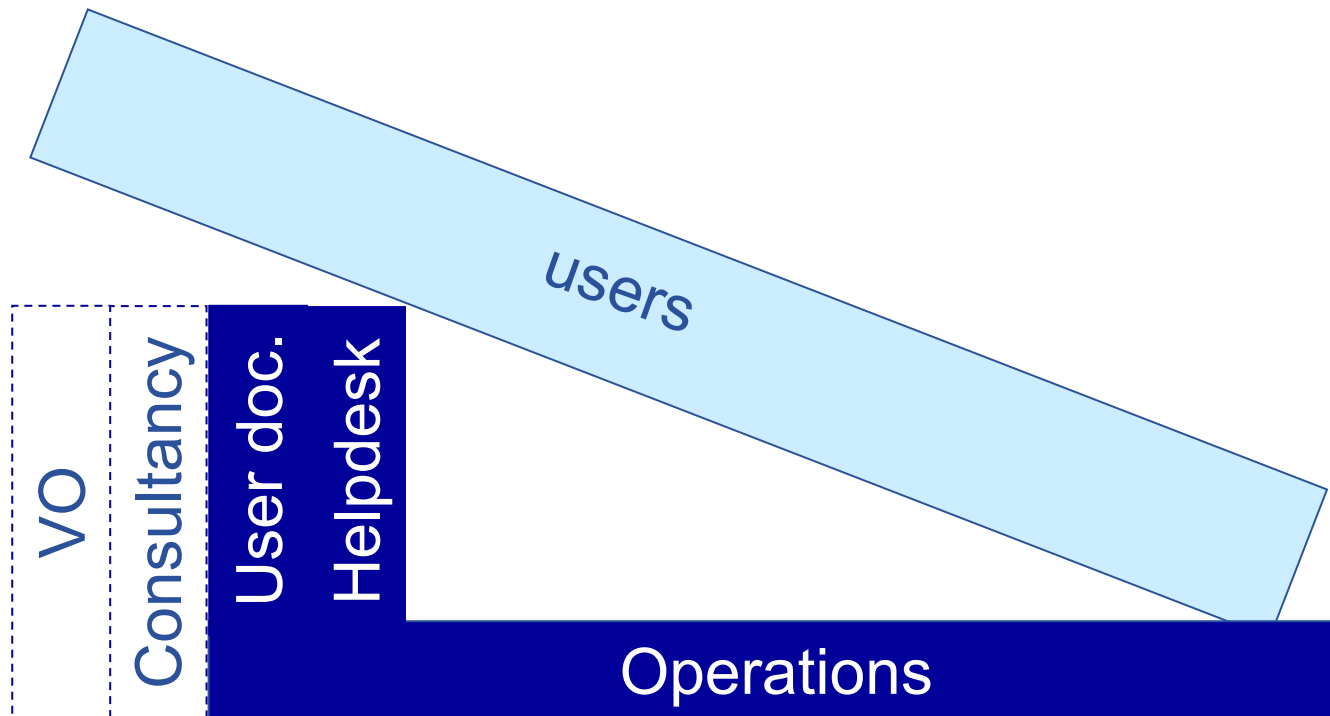
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 - Unproductive and dissatisfied
- Support staff overloaded
 - With mundane questions



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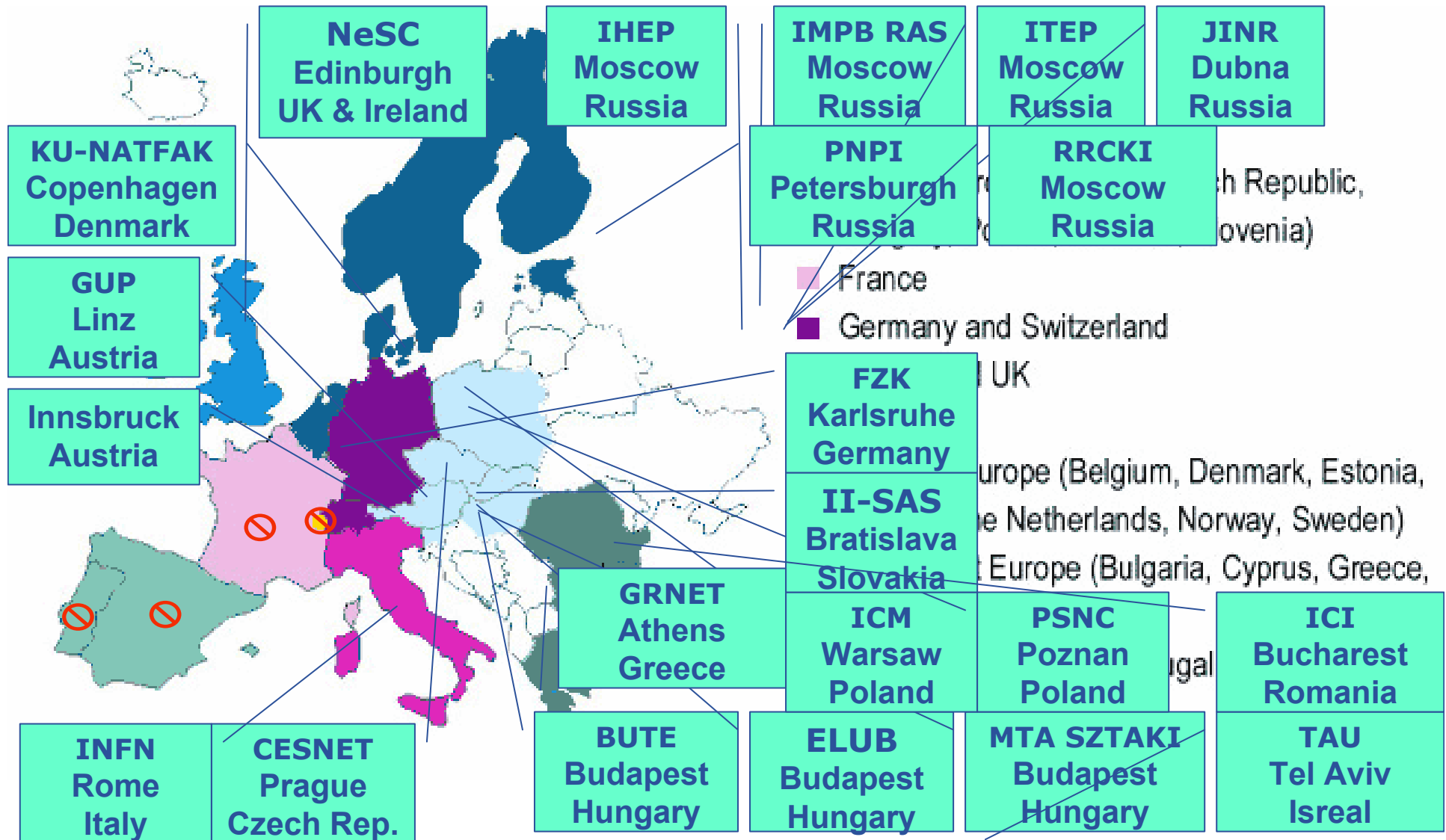
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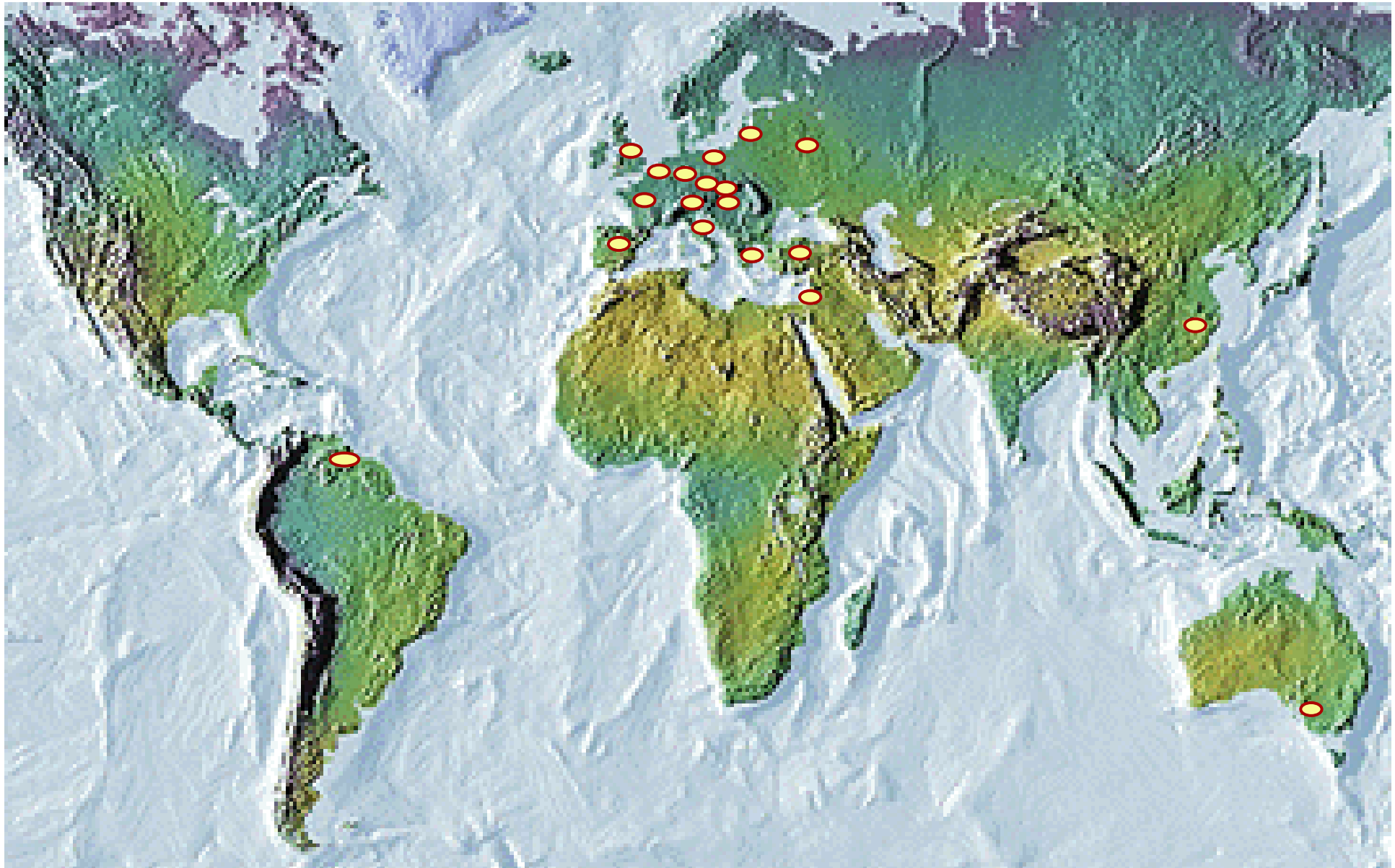
If you think training is expensive,
try ignorance
Roy Crock, Founder of M^cDonalds



Who are the trainers?

EGEE 22 Training Partners





One of the smallest activities – 4% of budget

| Federation | Effort in FTEs |
|---------------------|----------------|
| South East Europe | 3.44 |
| Russia | 4.13 |
| Northern Europe | 1.33 |
| Italy | 1 |
| Germany/Switzerland | 1 |
| Central Europe | 5.29 |
| UK/Ireland | 6 |
| TOTAL | 22.19 |

~ 1 FTE per partner in NA3 (22 partners)

~ 0.3 FTE per partner within EGEE (given 70 partners).

- Each of the NA3 federations has delivered at least two courses during the period under discussion.
- The first training plan (DNA3.1.1) calls for a total of 26 training events per year, whereas 39 have actually been delivered.
- The courses delivered have averaged almost exactly two days each across all of the federations.
- The total number of attendees so far reported is 1033.

Highlights of a training year

NA3 produces courses based on commitments in the execution plan and training requests which have been received

👉 from SA1, NA4 & NA2

- Induction
- LCG2 installation
- LCG2 APIs
- gLite preparation
 - Web Services
 - WSDL
 - WSRF
 - GT4



GT Course, Edinburgh

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Biomed Application Developers Course, Madrid



NA3 contributed

- planning
- organisation
- courses

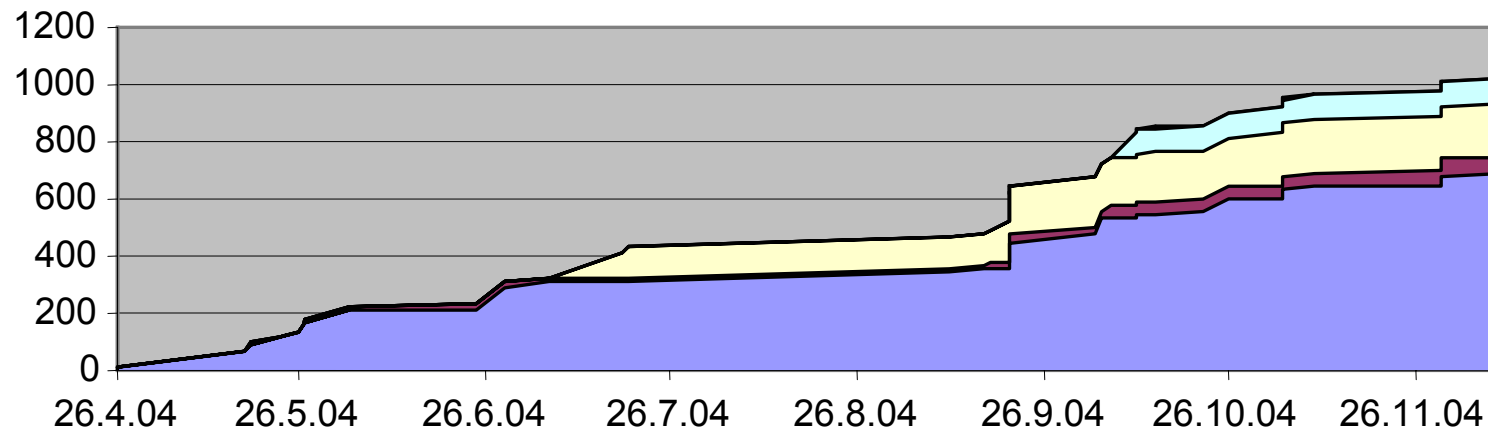
Presentations

- Grid applications – a portal-based approach
- Introduction to Web Services
- Introduction to GENIUS and GILDA
- An Introduction to Data Services & OGSA-DAI

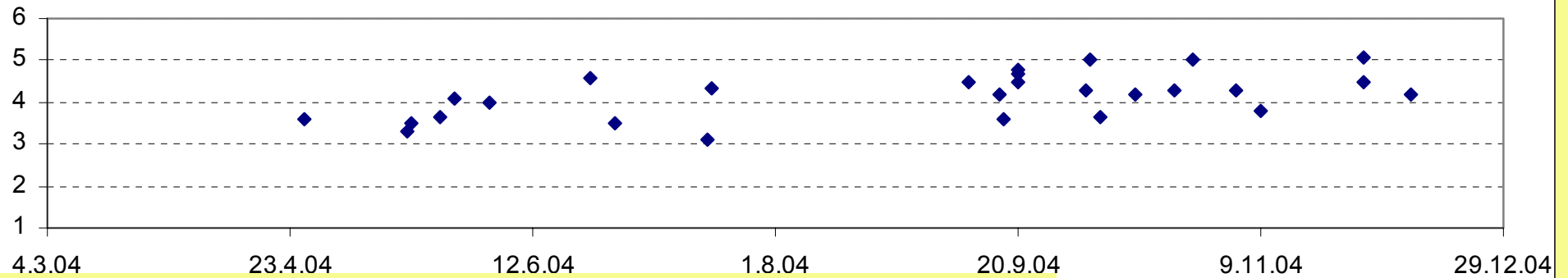
The event was attended by 84 *selected* advanced international students

Training Achievements

Total number of trainees



Overall feedback assessment



Trainers review grades and revise course material and training plans

Targets for year 1, **but demand exceeds original estimates**

| Course type | No of Attendees | % of 1-year target | No of courses | % of 1-year target |
|-----------------------------|-----------------|--------------------|---------------|--------------------|
| Induction | 479 | 96 | 40 | 400 |
| Application Developer | 48 | 24 | 10 | 125 |
| Advanced | 109 | 200 | 8 | 400 |
| Technical Activity Retreats | 481 | 267 | 19 | 317 |

Total trained >1033 so far – 2 year target 1500, so 2/3 target in 3/8 time

| | Event Type | | | | | | | |
|----------------------------|-------------------|----|--------------------------------|----|------------------|----|-----------------------------|----|
| | Induction Courses | | Application Developer Training | | Advanced Courses | | Technical Activity Retreats | |
| Number per Year | 10 | 40 | 8 | 10 | 2 | 8 | 6 | 19 |
| Average Attendance | 50 | 23 | 25 | 10 | 25 | 37 | 30 | 30 |
| Course Length (days) | 2 | 2 | 4 | 2 | 5 | 5 | 2 | 2 |
| Course Equipment | Web Access | | Workstations | | Workstations | | | |
| Num. of EGEE Staff | 2 | | 2 | | 2 | | 2 | |
| Number of non-EGEE Experts | 0 | | 1 | | 3 | | 0 | |

Planned in TA per year

Actual in first 9 months

| <u>Participant Days</u> | <u>Target</u> | <u>% of year 1 target</u> | |
|-------------------------|---------------|---------------------------|-----------|
| 11,584 | 1000 | 1158% | Induction |
| 286 | 800 | 36% | Developer |
| 3,732 | 250 | 1493% | Advanced |
| 481 | 360 | 134% | Workshops |

Subset of courses run – for which data is available

>1200 Gilda Certificates issued – 10% renewed

- **Resources per course higher than initially estimated**

- reduced number of days per course
- more administration per participant day
- fewer participants per course
- greater numbers of trainers required
- increased e-Infrastructure requirements

**Demand is rising
EGEE is responding
Response is limited
by availability
of experts**

- **Reduced numbers of participants per course**

- necessary for training quality

- **Shorter courses**

- necessary to fit with participants' constraints

- **More courses & Participants**

- **because so many work on or want to use EGEE**

Delivered already but not included in reported statistics

Induction, France (NA4)
 Grid conference tutorials, Russia
 Operations & Trainers training, Athens
 Induction, France (NA4)

20-21st Jan
 18th Jan

Induction, Grid Conference Amsterdam
 Induction for NA2
 WSRF, UK
 GATE tutorial, Germany
 Web Services (with AG), Germany
 Induction, France (SA1)
 Application Developer course, Spain
 GT4 week, Edinburgh
 DILIGENT training, Athens
 Courses at Athens Conf, Athens
 PPARC Grid Summer School, UK
 Tutorial, Grid conference, Russia
 Regional Grid Summer School, Budapest
 International Grid Summer School, Italy
 Induction, Austria
 Plus 7 UK regional events

16th February
 28th Feb-1st Mar
 23 - 24 Feb
 7- 9th March
 16 - 18th March
 22 - 23rd March
 late Mar/Apr
 4- 8th April
 16th April
 17th April
 10 -13th May
 11-15th July
 11-16th July
 July
 Sept

Many additional courses expected matching Commitments & Requirements

- **Top 3 training achievements**
 - achieved by NA3 working with NA4, SA1 & JRA1
- **An effective and federated collaboration for training**
 - across the whole of the EGEE geographic area
- **Significantly exceeding first year goals**
 - in the provision of training and induction
- **Pioneering t-Infrastructure provision**
 - GILDA
 - Hands-on operations training
 - Shared training resources repository

- **Contribution to Outreach & Dissemination**
- **Training extended to many other countries**
 - bringing new communities to EGEE

- Rapid response to unanticipated need
 - **advanced installation/administration course**
 - **SA1 identified requirement**
 - **SA1 provided initial courses**
 - **Required hands-on system**
 - **Several computers + network / learning group**
 - **Full systems-administrator access**
 - **Must be a free-standing system**
 - Course in Oxford
 - Course in Karlsruhe
 - Training trainers
 - T-Infrastructure investment now underway

T-Infrastructure provision

Training often requires special e-Infrastructure

- **T-Infrastructure emulates e-Infrastructure**
 - technical, operational & management aspects required by courses
- **T-Infrastructure may anticipate a future platform**
 - Preparing for gLite
 - Preparing for next scheduled release
- **Authentication at (or just before) a course**
 - Flexibility, light-weight – don't frighten the participants
- **Authorisation may restrict imposed loads**
 - Limit student & course impact – e.g. from errors
- **T-Infrastructure may be operated in isolation**
- **Guarantees of availability and response**
 - Student exercises generate peak loads
 - Pedagogical requirement for a quick response

- **GILDA provides a prototyping mechanism to bring applications and communities to EGEE**
- **GENIUS provides a user friendly portal for introducing users to grids**
- **GILDA/GENIUS provide support to training activities**
 - Demo mode, no certificates required
 - Certificated users – special VO, portal access to many applications
 - Developer access to GILDA

- **Metadata**
 - Date, course topic, module, author, location, language, version, file type, practical resources, external resources, comments, course level
 - used to search for material through query interface
- **Archive now has**
 - over 100 presentations, over 300 files, 34 modules
 - 7 course topics
 - EGEE induction
 - Globus ToolKit
 - LCG2 APIs
 - LCG2 Installation and Administration
 - UML for developing web services
 - Web Services
 - <http://www.egee.nesc.ac.uk/trgmat/index.html>
- **Web-based centralised registration & scheduling of courses**
 - Supported by UEDIN
 - Integrated support using database infrastructure

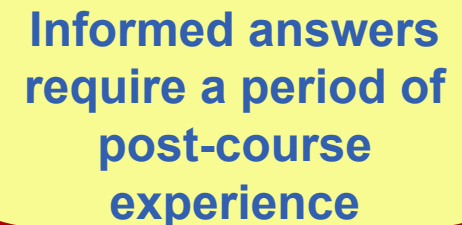
Revision and refinement of material improves its quality

Issues and Plans

The training team's primary concerns are

- **Sustain high-quality training across the region needs**
 - Continuous collaboration
 - Focus
 - Leadership
 - Communication
 - Resources
- **Experts under heavy demand needed**
 - to inform planning, preparation and delivery of new courses
 - Consequence of rapidly developing e-Infrastructure
- **Demand for training is growing rapidly**
 - expands with each new community and operational advance

- All deliverables and milestones met for first 9 months
- Next milestones and deliverables:
 - MNA3.3 External review of User Training and Induction
 - External technology experts, educators & students
 - Independent view to influence planning
 - Follow up survey – what impact does our training have
 - Do people now use EGEE?
 - Work with other e-Infrastructure?
 - Work more effectively within EGEE?
 - ...
 - DNA3.1.3 Training Plan revision
 - DNA3.3.2 Training Progress Report update



**Informed answers
require a period of
post-course
experience**

- **Focus on Application Developer courses**
 - Support new application domains brought in by NA4
 - Partners have been asked for new commitments in this direction
- **The limitations of *ad hoc* t-Infrastructure recognised**
 - UEDIN physical resources to address this requirement.
- **Expansion of the materials archive**
 - Improvements to structure and interface
 - Based on feedback from trainers and self-paced learners

- **Use grid-based technology to present courses**
 - Tried Access Grid at UEDIN
 - Expect to increase the use of video conference in courses
- **GRNET explored SMIL extensions to XHTML**
 - Associating presenter's audio & video with slide presentations
 - Expect to use extensively for e-Learning
- **Expand e-Learning technology and materials**
 - To provide increased support for training
 - To support self-paced learners
 - New staff member appointed at UEDIN
- **Established User Information Group (UIG)**
 - To improve the provision of information to all EGEE users
 - Accessible, consistent, well-organised for new users
 - Spanning NA2, NA3, NA4, and SA1

- **Established an effective and *federated* collaboration for training**
 - Across the whole of the EGEE geographic area
- **Significantly exceeding our first year goals**
 - In the provision of training
- **Identified and met the requirement for t-Infrastructure**
 - Pioneering its provision with GILDA
 - Establishing shared training material repository
- **Training has been extended to many other countries**
 - Bringing new communities to EGEE
- **Plans**
 - Focus on application developer and advanced courses
 - Further develop training support mechanisms
 - t-Infrastructure, e-Learning & gLite migration support
 - Respond adroitly to new requirements

Comments and Questions Please