eGee

Enabling Grids for E-sciencE

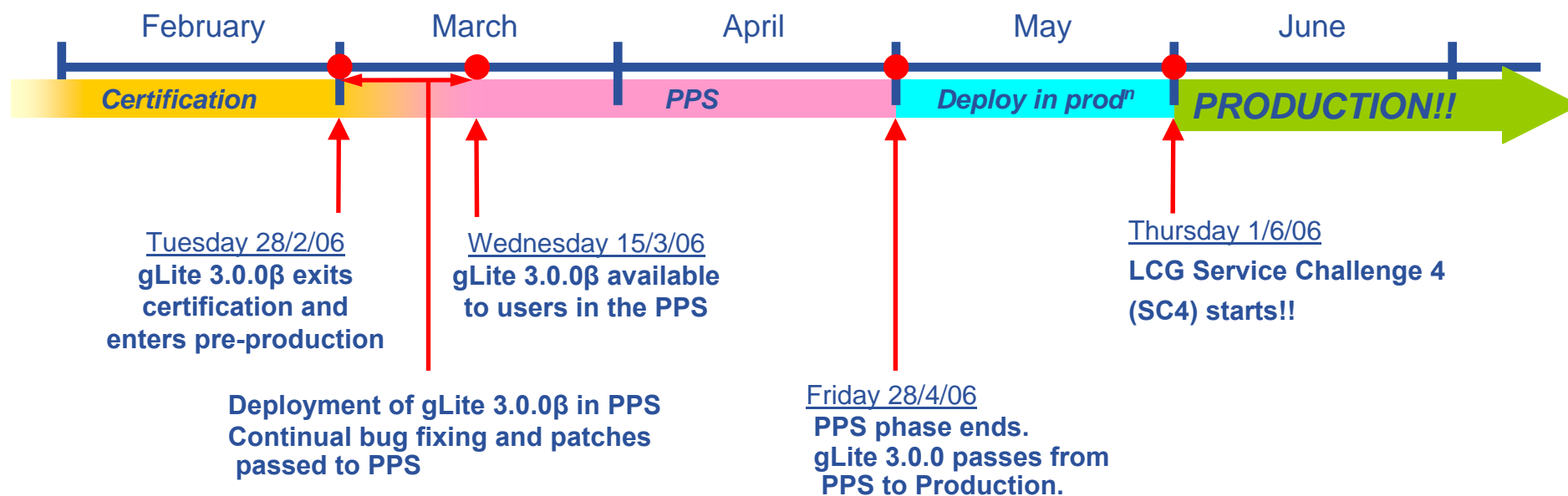# Further information

Mike Mineter,
National e-Science Centre
mjm@nesc.ac.uk

www.eu-egee.org

Information Society

- **This presentation can be re-used for academic purposes.**

- **However if you do so then please let training-support@nesc.ac.uk know. We need to gather statistics of re-use: no. of events, number of people trained. Thank you!!**

eGee

Enabling Grids for E-sciencE

| February | March | April | May | June |

Certification | **PPS** | **Deploy in prod^n** | **PRODUCTION!!**

Tuesday 28/2/06
gLite 3.0.0β exits certification and enters pre-production

Wednesday 15/3/06
gLite 3.0.0β available to users in the PPS

Thursday 1/6/06
LCG Service Challenge 4 (SC4) starts!!

Deployment of gLite 3.0.0β in PPS
Continual bug fixing and patches passed to PPS

Friday 28/4/06
PPS phase ends. gLite 3.0.0 passes from PPS to Production.

After gLite 3.0.0:

- March 31st: code freeze for development release gLite 3.1.0
- April 30th: end of integration
- May 31st: end of certification. Deployment on PPS
- July 31st: release of production version gLite 3.2.0. Start deployment at sites
- September : gLite 3.2.0 installed at sites and usable.

- **Following gLite summary slides from Claudio Grandi – JRA1 Activity Manager - INFN**

VOMS and VOMSAdmin	Provide a way to add attributes to a certificate proxy. Enables VO policies	In gLite 3.0
Other Security components	See JRA3 presentation	

DGAS	Collects, stores and transfers accounting data. Compliant with privacy requirements	Not in gLite 3.0. Will be deployed during the summer
APEL	Uses R-GMA to propagate and display job accounting information for infrastructure monitoring and reporting	In gLite 3.0

BDII	Information System <u>by LCG</u> based on LDAP.	In gLite 3.0
R-GMA	Provides a uniform method to access and publish distributed information and monitoring data	In gLite 3.0 used for job monitoring
Service Discovery	Provides a standard set of methods for locating Grid services. Currently supports R-GMA, BDII and XML files as backends	In gLite 3.0 used by WMS and DM components
CEMon	Web service to publish the status of a computing resource and of running jobs.	In gLite 3.0, but the WMS uses the BDII

eGee

Enabling Grids for E-sciencE

| LCG-CE	Computing Element based on GT2, by LCG. To be replaced by gLite-CE	In gLite 3.0
gLite CE	Computing Element based on GSI enabled Condor-C. Deployed in parallel to the LCG-CE	In gLite 3.0
CREAM	Lightweight Computing Element with web service interface	Not in gLite 3.0
BLAH	Layer between the CE and the local batch system	In gLite 3.0, in the gLite CE
Storage Elements	Use solutions developed by LCG and other projects: DPM, dCache, Castor all with SRM interface	In gLite 3.0
GFAL	Posix-like file access by LCG	In gLite 3.0
gLiteIO	Posix-like file access. To be replaced by GFAL	Limited support in gLite 3.0

LFC	File Catalog by LCG	In gLite 3.0
FiReMan	File Catalog. To be replaced by LFC	Limited support in gLite 3.0
AMGA	General purpose Metadata Catalog. Developed with NA4	Limited support in gLite 3.0. Full support foreseen
Hydra	Key-store for data encryption. Used by gLiteIO, will be used also by GFAL	Limited support in gLite 3.0. Full support foreseen
File Transfer System	Reliable, scalable and customizable File Transfer System. Supports "retries", *channel* management (authZ, VO shares) and VO plug-ins	In gLite 3.0. Used under stress for Service Challenges!

LCG-RB	Resource brokering, input/output management based on GT2, <u>by LCG</u>. To be replaced by gLite-WMS	In gLite 3.0
gLite-WMS	Resource brokering, input/output management, workflow management). Web service interface (WMProxy) Deployed in parallel with the LCG-RB	Is in gLite 3.0.
ICE	Submission to CREAM CEs in the gLite WMS.	Is not in gLite 3.0
Logging and Bookkeeping	Tracks jobs during their lifetime	In gLite 3.0
Job Provenance	Long term job information storage. Allows job re-run	Is not in gLite 3.0
GPBOX	Manages and distributes VO policies for resource access based on VOMS	Is not in gLite 3.0

- **DGAS**
  - Collects Grid accounting information (*User, JobId, user VO, VOMS FQAN(role,capabilities), system usage (cpuTime, ...), ...)*
  - Secure storage and transfer of accounting records

- Stores information in a site database (HLR) and optionally in a central HLR. Access granted to user, site and VO administrators
- **Soon to be included in gLite release**

Enabling Grids for E-sciencE

- **The Server Side contains :**
  - **Price Authority (PA)**
    - **An entity that assigns the prices to the resources.**
    - **The prices, that are kept in a historic price database, can be assigned manually or using different dynamic pricing algorithms.**
  - **Home Location Register (HLR)**
    - **Responsible for keeping the accounting information.**
  - **High Availability Daemon (HAD)**
    - **Responsible for monitoring the status of the service.**
    - **In case of failure it restarts the daemon avoiding long down periods due to service failures.**

A simplified view of DGAS within the WMS context.
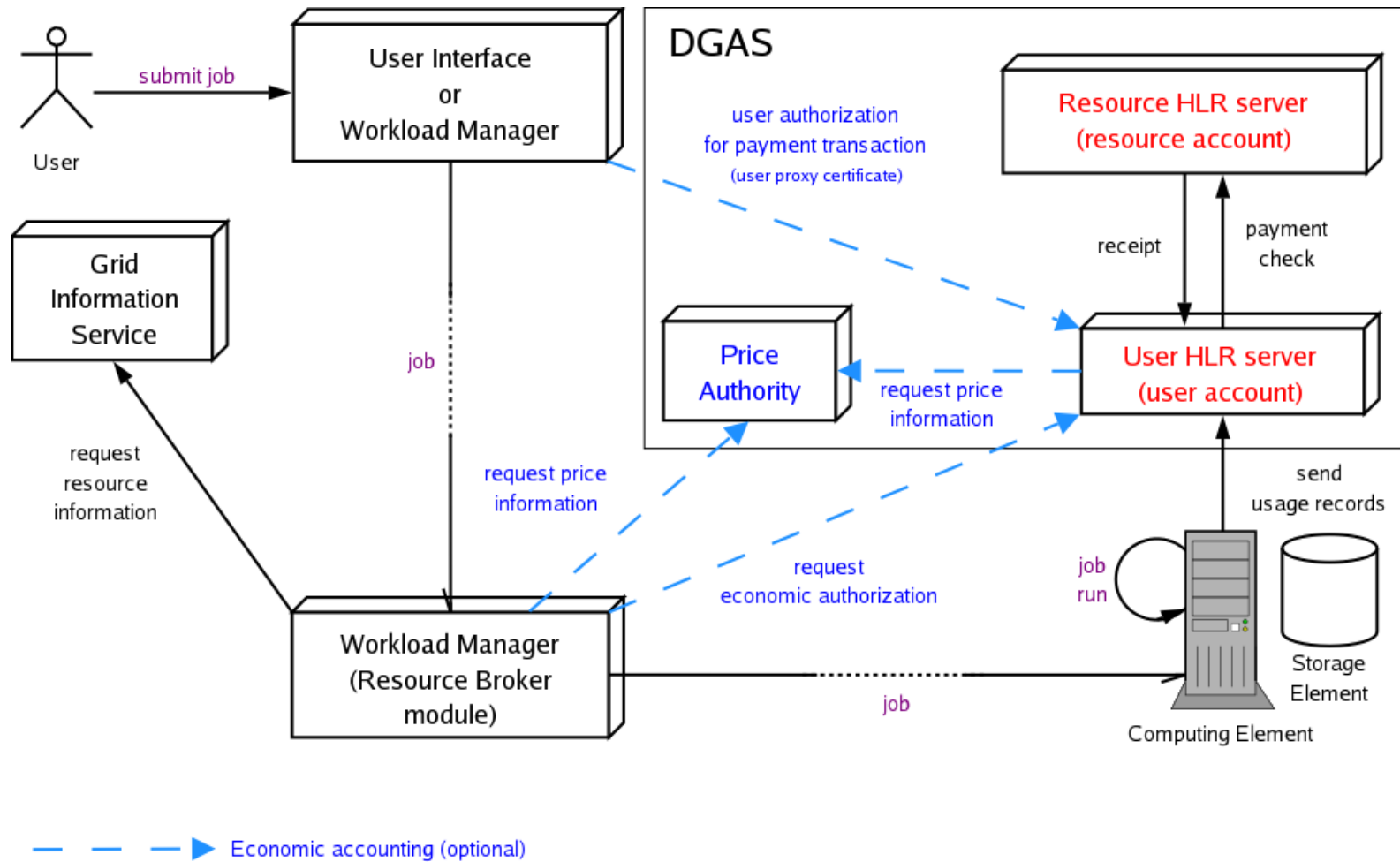
dgas-check-balance

User: EDINBURGH19
E-mail: mjm@nesc.ac.uk
Subject: /C=IT/O=GILDA/OU=Personal
   Certificate/L=EDINBURGH/CN=EDINBURGH19/Email=mjm@nesc.ac.uk
Assigned credits (0=infinite): 0
Booked credits: 0
Used credits: 0
Used wall clock time (sec): 0
Used CPU time (sec): 0
Accounted jobs: 0

[edinburgh19@glite-tutor edinburgh19]$ **dgas-check-ce-price**
   grid010.ct.infn.it:2119/jobmanager-lcgpbs-short

Price Authority queried at: Fri Jun 23 08:44:37 CEST 2006
Computing Element: grid010.ct.infn.it:2119/jobmanager-lcgpbs-short
Price (credits for 100 CPU secs): 130

Enabling Grids for E-sciencE

- **Not across admin domains, which would require**
  - Outbound connectivty (not all sites)
  - More sophisticated scheduling of processors across sites

- **Are run with mpi_ commands**

- **Send a script that:**
  - Compiles code
  - Distributes the exe to allocated nodes
  - Runs it

If you wish to continue using GILDA:

- **You can apply for an account**
- **From the web-site**
- **Two-week certificate, renewable**
- **Same environment we have used in this course**

- **https://gilda.ct.infn.it/**

eGee

Enabling Grids for E-sciencE

Options for this morning

- **Port your applications!**

- **"self-programmed" supported exploration**
  - MPI jobs
  - Workflow – DAG – Directed acyclic graphs
  - User Guide
    - PDF https://edms.cern.ch/file/722398/1/gLite-3-UserGuide.pdf
    - PS https://edms.cern.ch/file/722398/1/gLite-3-UserGuide.ps
    - HTML https://edms.cern.ch/file/722398/1/gLite-3-UserGuide.html
  - EGEE User Forum

http://indico.cern.ch/conferenceTimeTable.py?confId=286

Includes middleware overview

http://indico.cern.ch/materialDisplay.py?contribId=21&sessionId=18&materialId=slides&confId=286