eGee

Enabling Grids for E-sciencE

Technical Overview

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Information Society
and Media

- **So far received: NA2, NA4, NA5, JRA1, JRA2, JRA3, JRA4, SA2**

- **Missing: SA1**

- **Goal: success story of EGEE**

- **First start with:**

  – Size of the infrastructure, usage, application domains, industry

- **Then**

  – Summaries of the individual activities

Successful teamwork:
- 29 partners in 21 countries
- NA2 team worked closely together to drive Dissemination Plan

Building the brand:
- Easily recognisable EGEE brand and style
- EGEE Style Guide
- Templates for posters, fact sheets, presentations, websites etc.

Publicity material developed:
- Glossy brochure
- 18 information and 2 leaflets (updated regularly)
- EGEE folders to contain information sheets
- Sheets available in 13 different languages
- Multimedia video
- A range of posters
- Business cards
- EGEE stickers
- Bi-monthly newsletters

Websites:
- 21 websites (public and local)
- Over 16,000 unique visitors visit an EGEE website every month

Events
- EGEE promoted and presented at 461 events all over the world
- A wide-range of events targeted with EGEE publicity material
- Four successful project conferences held

Media relations:
- 145 news releases about EGEE issued across Europe and beyond
- Resulted in 360 press cuttings, 11 television interviews and 5 radio interviews
- Equivalent in paid advertising of over 500K euros

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gLite
Lightweight Middleware for Grid Computing

- **Provides a complete middleware stack**
- **Developed according to a well defined process**
- **Tested, Documented, with installation and release notes**
- **Many releases with increasing functionality**
- **Components have been gradually deployed on the production infrastructure and have been used for applications challenges**

Daily Averaged Throughput From 11/04 to 17/04 From CERNCI to ALL SITES
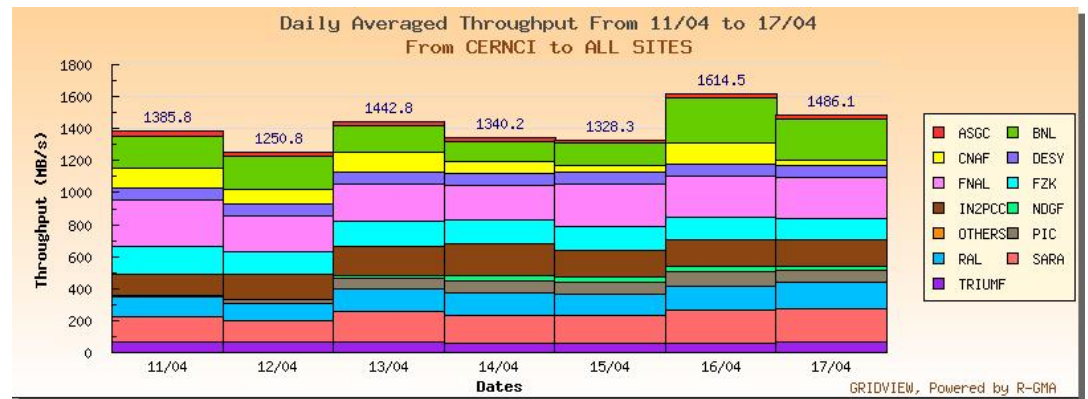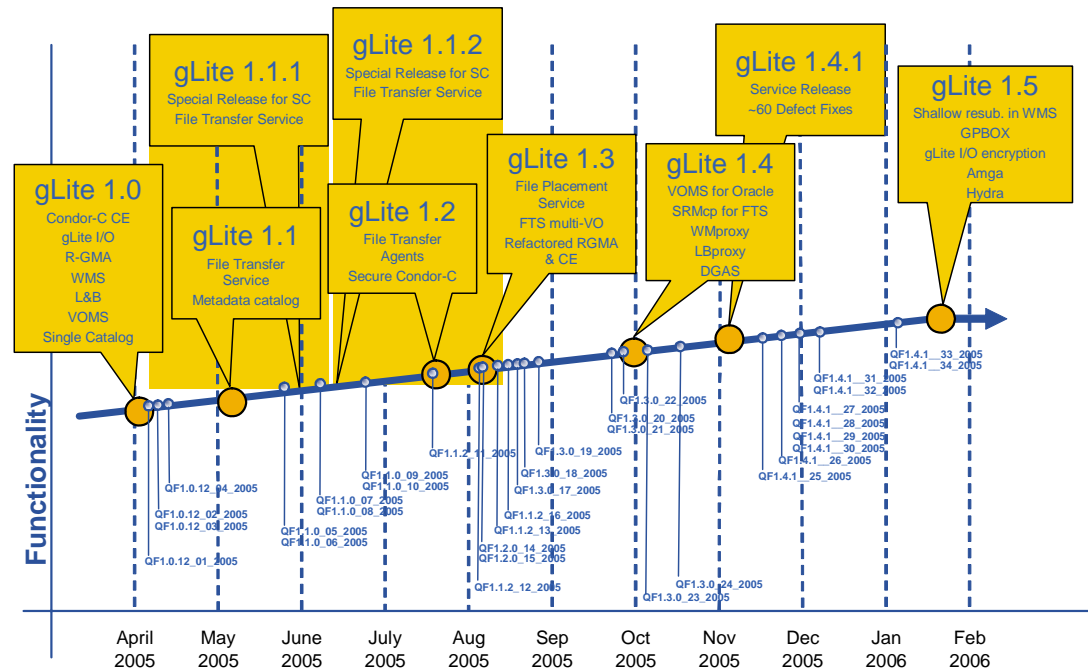
- **gLite 3.0 represents an important milestone**
  - Will be deployed on the Production System (in June)
    - with the only exception of a few components
  - The definition of the release has been controlled by the Technical Coordination Group with the contribution of the EGEE applications
  - The release has been produced using the new project structure
    - merged JRA1 testing and SA1 certification teams
- **The experience of the Integration Team lead to the creation of the new ETICS project**
  - gLite 3.0 uses a prototype of the ETICS build system
- **Important role of the Design Team in the definition of the functionalities**
  - With significant contributions by the Globus and Condor teams
- **Development is continuing to provide increased robustness, usability and functionality**

Latest update: 2006-05-03

Summary - Security services

EGEE

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Requirement	In architecture	Solution/ Technology/Service	Component Available	Implemented	Integrated
Single sign-on	Yes	Proxy certificates and a global authentication infrastructure	Yes	Yes	Yes
User Privacy	Partially	Pseudonymity services	Yes	No	No
Data Privacy	Partially	Encrypted Storage	Yes	Yes	Yes
Audit ability	Partially	Meaningful log information	Yes	Yes	Yes
Accountability	Yes	All system interactions can be traced back to a user	Yes	Yes	Yes
Combining policy from different administrative domains	Partially	Authorization framework	Yes	Yes	Yes
VO managed access control	Yes	VOMS	Yes	Yes	Yes
Support for legacy and non-WS based software components	Yes	Modular authentication and authorization sofware suitable for integration	Yes	No	No
Non-homogenous network access	Yes	Dynamic Connectivity Service	No	No	No

Overall achievements EGEE

Module	Component available	Implemented	Integrated
AuthZ framwork (java)	Yes	gLite1.0	Yes
Grid enhancement for OpenSSL	Yes	No	Yes, in openssl-0.9.7g
glexec	Yes	gLite3.0	No
Jobrepository	Yes	gLite1.5	No
Security test utils	Yes	gLite1.3	Yes
Trustmanager	Yes	gLite1.0	Yes
LCAS	Yes	gLite1.0	Yes
LCMAPS	Yes	gLite1.0	Yes
Gatekeeper	Yes	gLite1.0	Yes
Delegation	Yes	gLite1.2/1.5	Yes
gsoap plugin	Yes	gLite1.2(not JRA3)	Yes

- **NA4 Steering Committee**
- **EGEE EU Review (CERN)**
- **May 23, 2006**

- **HEP**
  - Data and Service Challenges
    - SC 3: file transfer, very successful
    - SC 4: in preparation
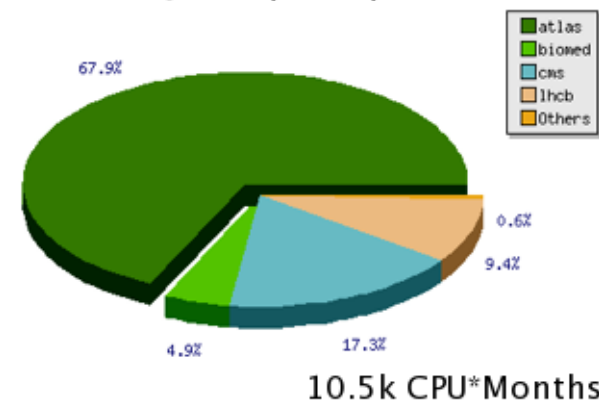   - Continuous productions continuing

  - Since last review, analysis growing fast:
    - See GANGA demo.
   - E.g. CMS: 10k jobs/day (10k jobs/week 1 year ago!)

- **Biomed**
  - Mature VO doing production work on the grid.
  - Mgt. of sensitive medical data with new gLite services (demo).
  - Large-scale molecular docking computations (malaria, avian flu).
  - Grid docking work engenders new scientific collaboration.

Fraction of Normalized CPU Time
January – May 2006

atlas
biomed
cms
lhcb
Others

67.9%
0.6%
9.4%
17.3%
4.9%

10.5k CPU*Months

NA4 Achievements

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- **Generic Applications**
  - GILDA used successfully to bring new apps. onto grid.
  - Earth science, comp. chemistry, astrophysics, … using grid.
  - MoU process for 'selected' applications.

- **Overall**
  - Users' Forum (90+ contributions; 250+ participants).
  - User Survey to capture user satisfaction and requirements.
  - Active VOs growing: 25+ VOs using > 1 CPU*day/week.

- **Ongoing**
  - Developing light-weight registration for VOs.
  - Setting up VO Managers' Group.

Number of Active VOs June 2005 - May 2006

Enabling Grids for E-sciencE
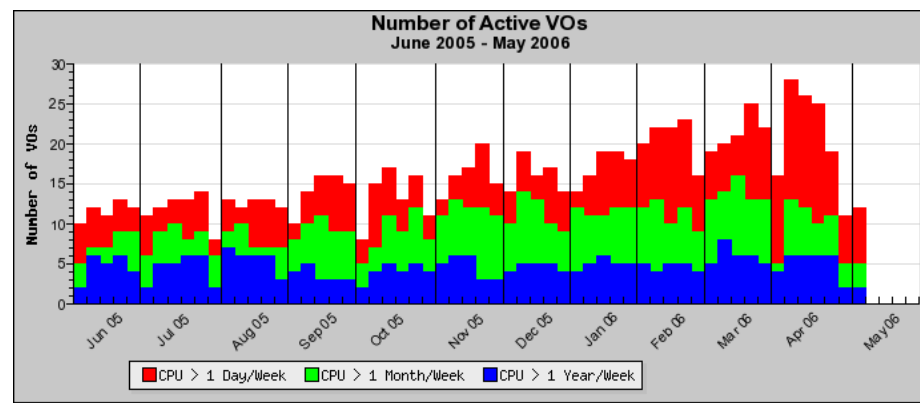
- **Hep matrix → CAL**
- **HEP activity → Erwin**

- **Spring 2005, the HEP community set up a working group to prioritise the grid services**
- **LCG Baseline Working group: http://lcg.web.cern.ch/LCG/peb/bs/**
  - Lead by I. Bird
- **Final report June 2005: http://lcg.web.cern.ch/LCG/peb/bs/BSReport-v1.0.pdf**

- **These findings are an important input for the EGEE TCG activity**

Service	ALICE	ATLAS	CMS	LHCb
Storage Element	A	A	A	A
Basic transfer tools	A	A	A	A
Reliable file transfer service	A	A	A/B	A
Catalogue services	B	B	B	B
Catalogue and data management tools	C	C	C	C
Compute Element	A	A	A	A
Workload Management	B/C	A	A	C
VO agents	A	A	A	A
VOMS	A	A	A	A
Database services	A	A	A	A
Posix-I/O	C	C	C	C
Application software installation	C	C	C	C
Job monitoring tools	C	C	C	C
Reliable messaging service	C	C	C	C
Information system	A	A	A	A

A= High priority and mandatory
**B=Standard solutions are required but expts could select different implementations**
C=Common solution desirable but not essential

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- **Data and Service Challenges**
  - Service Challenge 3 (file transfer, very successful)
  - Service challenge 4 (in preparation)
  - Continuous productions continuing

Normalised CPU time (Excluded dteam VO)
January 2006 - May 2006

- atlas
- biomed
- cms
- lhcb
- Others

67.9%

0.6%

9.4%

4.9%

17.3%
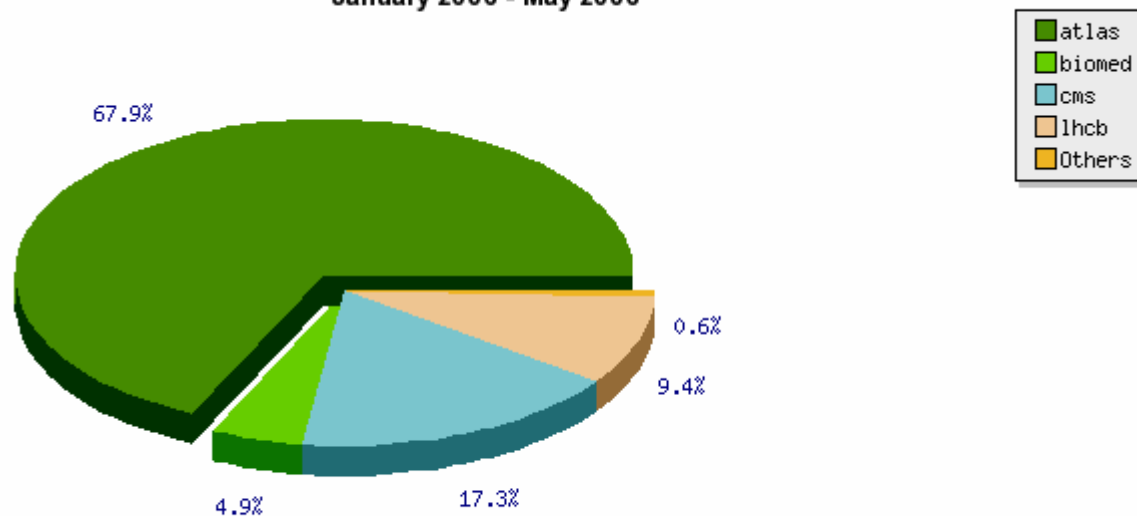
- **News since last review:**
  - Fast growing analysis on the grid
  - Examples:
    - See Ganga demo
    - CMS: 10^4 jobs per day (was 10^4 per week less than 1 year ago!)

Overview of the EGEE infrastructure between March 2005 and February 2006. This plot is provided by the EGEE accounting system.

- Policy-related activities :
  - Coordinated support to the e-Infrastructures Reflection Group (e-IRG) defining grid policies across Europe and beyond
    - During 6 presidencies, funded or unfunded (Italian, Irish, Dutch, Luxembourg, UK, Austrian)
      - *Including a "Virtual Support Office" for e-IRG Workshops and Meetings and White Papers coordination*
  - During 1Q 2006 started working on sustainability aspects
    - One dedicated PMB meeting on sustainability and related regional workshops
- International cooperation activities:
  - "Concertation" with other EU projects
    - Participated and contributed to many concertation-type events
      - *2 eConcertation events, 3 TERENA NREN-GRID Workshops, EGEE-related projects session in EGEE Pisa with 12 Grid projects*
    - Proposed a table of cross project working groups to be negotiated during EGEE-II
    - In total 2 MoUs (GN2, SEEGRID), Joint deliverables and/or events (DEISA, DILIGENT, SEE-GRID) and 14 Letters of Support given to RI and IST projects
  - Reinforced cooperation with other geographical areas (in middleware, operations, training and dissemination)
    - USA-OSG, Japan-NAREGI, South Korea-KISTI, China, Taipei, India
      - *Also as part of the GGF Grid Interoperability Now (GIN) effort*
  - Preparing an inventory of EGEE contributions to standardisation efforts
    - Also a list of standards related to EGEE
  - Participation to major conferences and workshops
    - SC and ISC, GGF, other events including major networking conferences
      - *Booths planned for 2006 onwards*

- **The QA approach adopted by the project in merging academic and industrial best practices has proven successful to the project and ensured its processes, services and deliverables are of high-quality**

- **QA is active across all activities**
  - Set of procedures
  - Automated tools
  - Metrics programme periodically refined

- **The project has met many of the targets set for the first 2 year phase**

- **A recent survey on CMMi conduced by JRA2, concludes:**
  - There is no significant weakness in our QA process

- **Given the size of the EGEE-II collaboration (more than 90 partners), a metrics programme has been initialised in order to measure the performance of each partner through the project activities and their contribution to the programme of work**

- **Creation of the EGEE Network Operations Centre:**
  - Act as an end-to-end NOC,
  - Operation interface for the NRENs,
  - Network support unit for EGEE,
  - LCG will likely delegate partially its networks operations to the ENOC.
- **Network SLAs for the EGEE infrastructure:**
  - Creation process inline with BAR and GÉANT2,
  - Creation and Follow-up done by the ENOC.
- **Network Operational Database:**
  - An operational tool for many of the ENOC tasks: SLAs creation, troubleshooting, assessment of the impact of network incident on the EGEE infrastructure,
  - Schema to give a logical view of the network in terms of interconnection of administrative domains.

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- **Forged unique working relationship with GÉANT2 through both BAR and NPM**
  - Relationship continues with fixed monthly meetings during EGEE-II to set common course

- **Using standard interfaces, we demonstrated the world's first single-point access to heterogeneous NPM data**

- **Performed the world's first inter-domain, software-based, BAR requests**

- **Published, pioneering work, adopting and contributing to GGF standards**
  - Gridnets, RIPE, CESNET, TERENA
  - GGF-13, GGF-15 NM-WG demonstrations