JRA1
Middleware Re-engineering Status Report

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EGEE-III Final Review, 23-24 June, 2010

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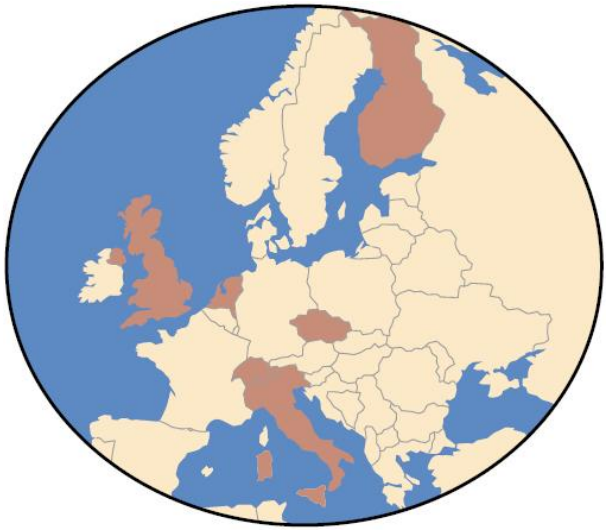
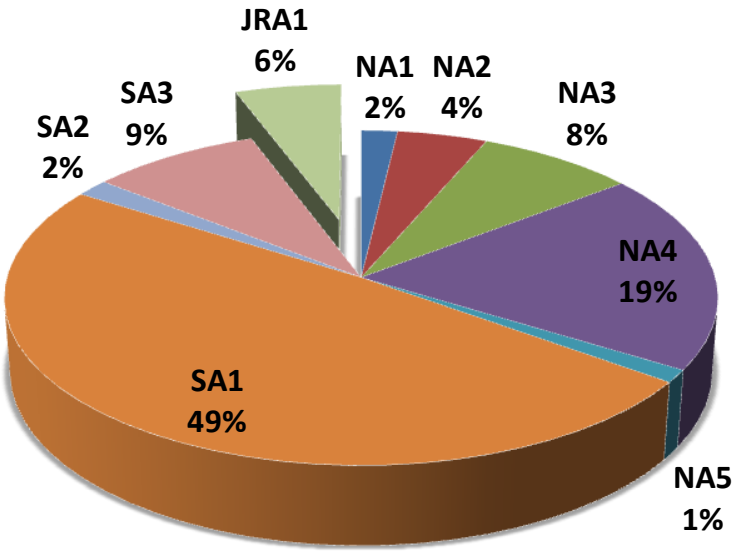
e-infrastructure

Activity Overview





Country	Total PM planned at M24	Total FTE
CERN	78	3.3
Czech Republic	48	2.0
Finland	48	2.0
Italy	256	10.7
Netherlands	35	1.5
Switzerland	36	1.5
UK*	30	1.3
Total	**531**	**22.1**

* Includes 18PMs of voluntary effort

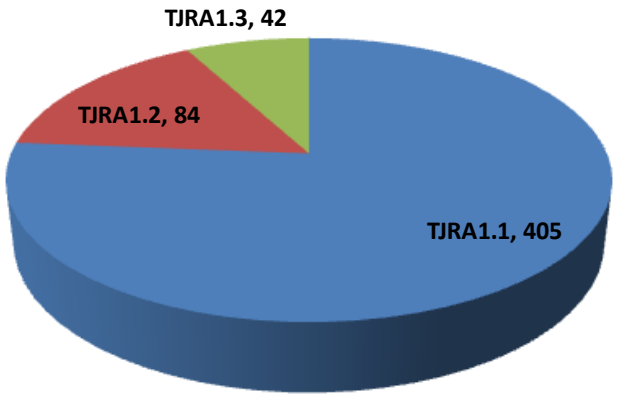
Usage of Resources at M24

Country	PM Planned	PM Consumed	Deviation
To be updated			
CERN	78	95.4	+22.3%
Czech Republic	48	48.2	+0.4%
Finland	48	55.2	+15.0%
Italy	256	259.9 (?)	+1.5%
Netherlands	35	?	?
Switzerland	36	43.6	+21.1%
UK	30	50.7	+69.0%
Total	**531**	**?**	**?**

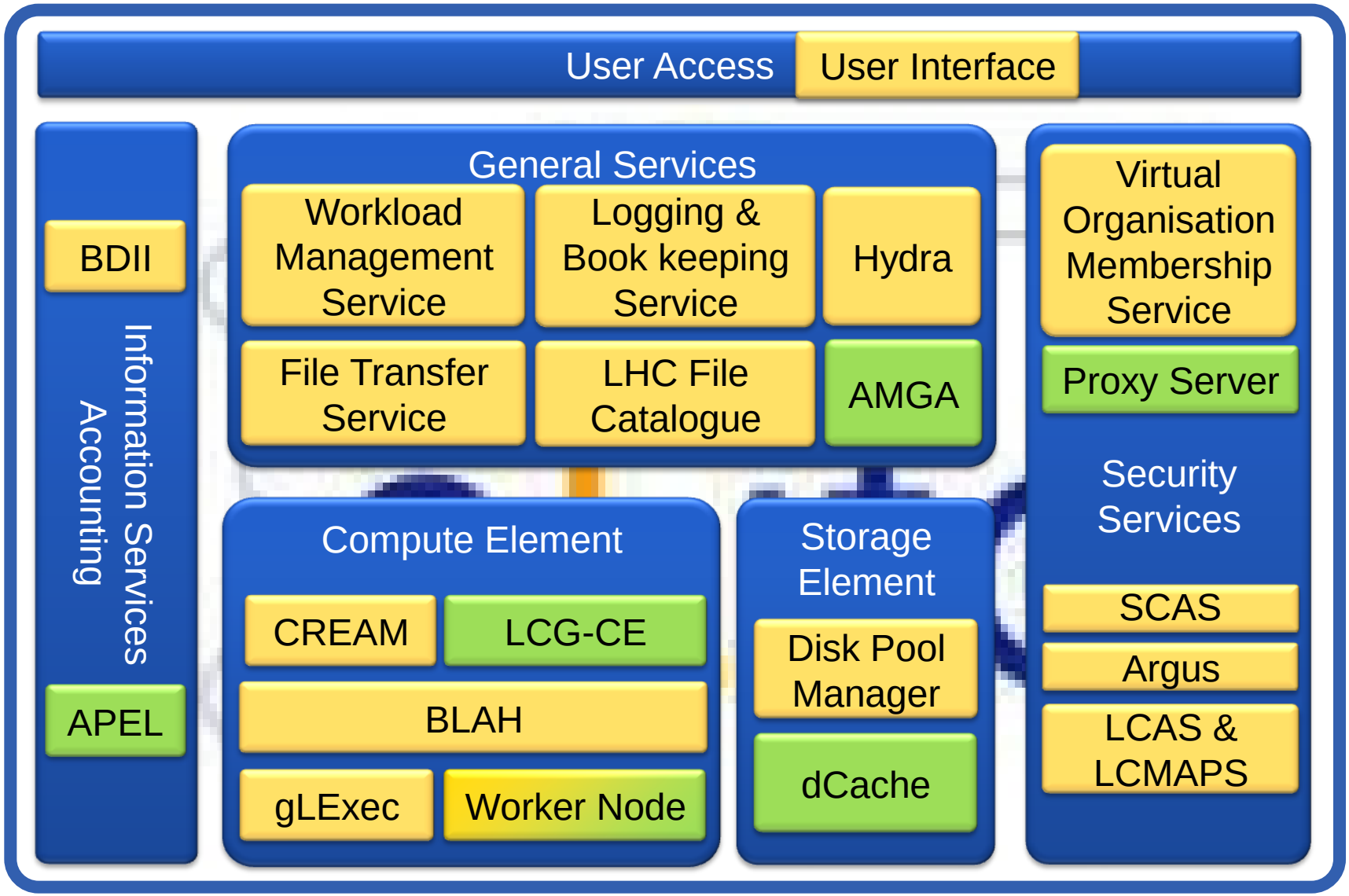
- **Effort exceeded estimates already at M12, mainly due to anticipation of work**
- **Changes foreseen in Y2 didn't allow to lower the effort in the second part of the project**

Tasks

- **TJRA1.1 Middleware support**
  - *"maintain and gradually improve the reliability, performance, usability, and manageability of the existing services"*
  - Subset of gLite
  - Support via product-specific mailing lists, the gLite bug tracker (Savannah) and the general EGEE ticketing system (GGUS)
- **TJRA1.2 Research & development and standardisation**
  - *"development of components needed for an effective usage of the production resources and [...] adoption of consolidated international standards"*
  - Main development is a coherent Authorization Framework (*Argus*)
  - VOMS-SAML
- **TJRA1.3 Activity Management**
  - Includes Security Architect



gLite Middleware



Achievements

- **Middleware Support**
  - Goal: to keep a growing infrastructure running
  - Releases for all the services/components have been delivered to certification and production
    - Bug fixes
    - Steady stream of improvements in terms of reliability, performance, usability, and manageability
    - Minor functional enhancements
- **Development**
  - Argus (new Authorization Service) is in production
    - Addressing gLExec-on-the-Worker-Node and global banning use cases
    - Integration on CREAM on-going
  - VOMS can issue SAML Assertions
  - Hydra (Encripted Data Storage) is in production (already in Y1)

Achievements /2

- VOMS is the de-facto standard as Attribute Certificate Authority
- BDII is the de-facto standard as Information Service
- FTS is used in all major sites to manage large data transfers
- CEMon (the monitoring counterpart of the CREAM CE) is used also in OSG and CREAM itself is under evaluation
- gLExec and its LCAS/LCMAPS dependencies are used everywhere pilot jobs are employed, especially if identity switch is required
- Argus is under evaluation in ARC and UNICORE
- Several components are maintained (in some cases by third-parties) into major Linux distributions

Changes in Y2

- **Based on**
  - Transition to EGI
  - Reviewers' recommendations
- **Main affected aspects**
  - Software process
  - Interoperability
  - Multiple-platform policy
  - IPv6 support
  - Intellectual Property policy

Software Process

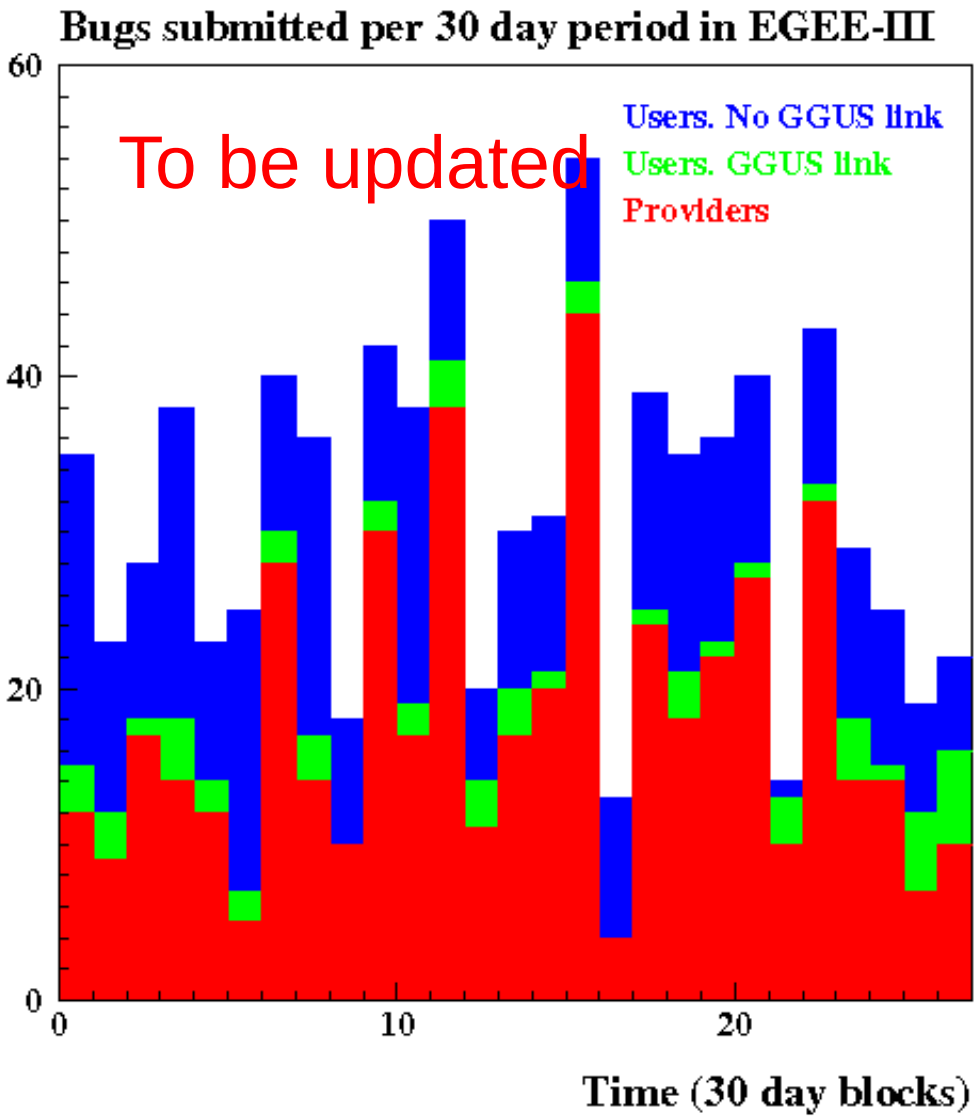
- **The goal is a seamless transition to the software provisioning model foreseen in the EGI era**
- **SA3 responsibility with contribution from JRA1**
- **Introduction of the concept of Product Team**
  - A PT is fully responsible for the provision and support of a software product
  - Lightweight central validation of software releases
- **All procedures have been reviewed and fully documented, including the use of supporting tools**
  - *gLite Developer's Guide*
  - *Product Team Integration Guide*
  - *Definition and documentation of the revised software life-cycle process*
  - *Updated software life-cycle process*
  - *Problem Management and Change Management in gLite*

Software Process Highlights

- Inspired by ITIL v. 3 best practices
- Suited for a distributed development model
- Continuous improvements to the process itself
- Priority-driven development
- Better separation between the defect tracker (Savannah) and the incident tracker (GGUS)
- Planning and tracking of next releases
- Further integration of ETICS
- More discipline

- Metrics have been defined to monitor the implementation of the process

GGUS and Savannah



Interoperability & Standardization

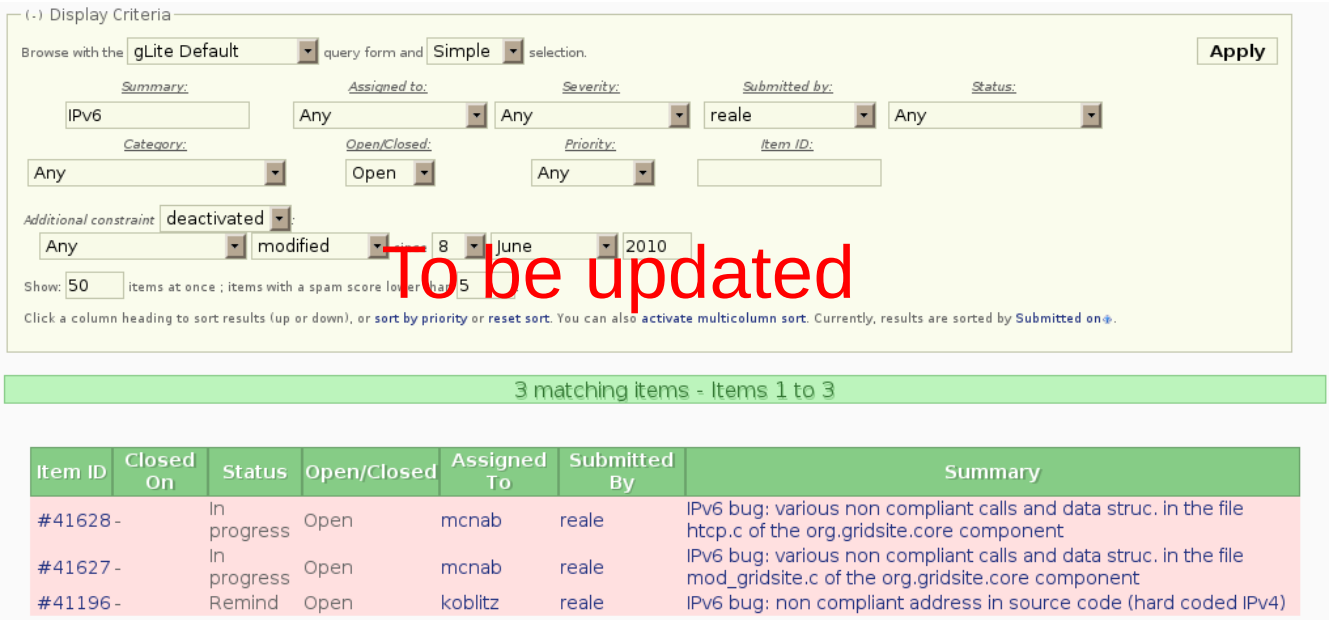
- **Primary goal and constraint of the gLite development**
- **Close links with OSG and NDGF**
- **Interoperability with HPC environments not directly addressed**
  - But application workflows exist that successfully use both environments
- **Support for Shibboleth-based AAIs**
  - SLCS and VASH
- **Some standardization successes**
  - GLUE
  - SRM
  - VOMS Attribute Certificates (coming soon)
- **Standardization is difficult**
  - Work in the OGF PGI WG is not converging

Multi-Platform Policy

- ***"a stable version of gLite should be made available on at least one reference platform"***
- **gLite 3.1 available on Scientific Linux (CERN) 4, 32 bit**
  - Some selected services available on 64 bit
- **gLite 3.2 available on Scientific Linux 5, 64 bit**
  - Some selected services available on 32 bit
- **A procedure exists for the deprecation of a gLite 3.1 service once the corresponding one coming with gLite 3.2 has demonstrated sufficient maturity**
- **Other platforms are addressed on an experimental basis, with low-priority**
  - Limited demand
  - Limited available resources

IPv6 Support

- **Collaboration with SA2**
  - They ran the IPv6 static checker as an ETICS plugin and submitted 111 bugs
    - 75 for JRA1 components

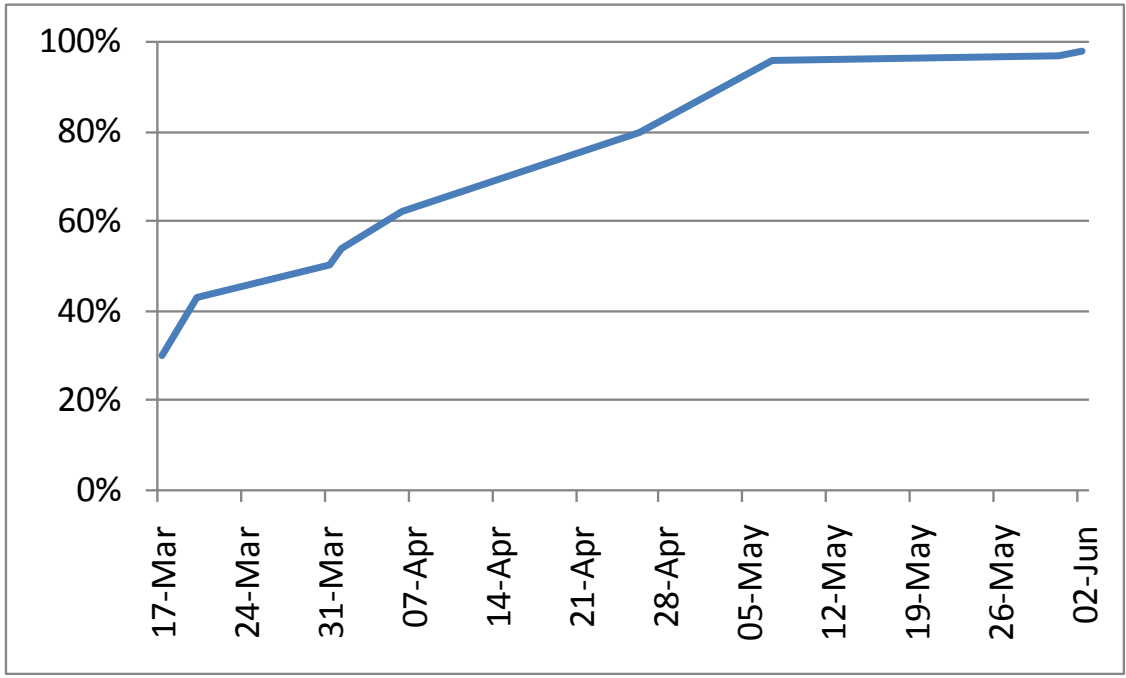


Item ID	Closed On	Status	Open/Closed	Assigned To	Submitted By	Summary
#41628 -		In progress	Open	mcnab	reale	IPv6 bug: various non compliant calls and data struc. in the file htcp.c of the org.gridsite.core component
#41627 -		In progress	Open	mcnab	reale	IPv6 bug: various non compliant calls and data struc. in the file mod_gridsite.c of the org.gridsite.core component
#41196 -		Remind	Open	koblitz	reale	IPv6 bug: non compliant address in source code (hard coded IPv4)

- **Final testing to be done by SA2 on their IPv6 testbed**
  - Some services are IPv6 ready

IPR Policy

- **All the source code should include the copyright and license attributions agreed-upon by the project members**
  - Copyright “Members of the EGEE Collaboration”
  - License Apache v. 2
- **Check is part of the validation of a new release**



gLite Beyond EGEE

- **gLite Open Collaboration established among the institutes involved in the development of gLite**
- **Main objectives:**
  - Maintain the gLite brand, related names and software products
  - Provide other projects with a single interface to the gLite providers
  - Coordinate the maintenance and evolution of the gLite middleware in response to requirements from its user communities
  - Provide support to the user communities
  - Provide the gLite middleware in an open and accessible manner to the user communities, allowing and encouraging community contributions to address problems, port to new platforms, and improve the overall software quality

Partners of the gLite OC

- ASGC (Taiwan), CERN (Switzerland), CESGA (Spain), CESNET (Czech Republic), CSIC (Spain), GRNET (Greece), HIP (Finland), INFN (Italy), KISTI (South Korea), NIKHEF (Netherlands), PNPI (Russia), STFC (UK), SWITCH (Switzerland), TCD (Ireland), UAB (Spain) and UCY (Cyprus)
- Almost all partners joined
- (to be replaced by a map)

Existing gLite Releases

- **Managed by the gLite Open Collaboration within the EMI project**
- **Support and maintenance of gLite 3.1 and gLite 3.2 until needed, to avoid disruption of the existing production infrastructure**
- **Only address *important* change requests**
  - According to the workplan
  - The rest will be pursued in the context of EMI releases

#9884	[VOMS-Admin] Release 2.6	Assigned	2010-03-30 22:00
#9781	[WMS] Release 3.3	Assigned	2010-03-31 00:00
#10097	[WMS UI] Release 3.4	Assigned	2010-03-31 00:00
#13146	[SAGA SD GUI] Release 1.0.0	Assigned	2010-03-31 00:00
#14394	[CREAM CE] Release 1.6 for the client for gLite 3.2/sl5_x86_64	Done	2010-03-31 00:00
#14518	[DPM, LFC] LFC/DPM 1.7.4 release	In progress	2010-03-31 00:00
#14875	[WMS] release 3.2.14	In progress	2010-04-07 00:00
#14876	[FTS] FTS 2.2.4 release	In progress	2010-04-07 00:00
#10116	[hydra] Release 1.3	In progress	2010-04-22 00:00
#9425	[LB] release 2.2.0-1	Assigned	2010-04-29 22:00
#9735	[CREAM CE] Release 1.7	In progress	2010-04-30 00:00
#14391	[CREAM CE] Release 1.6 for gLite 3.1/sl4_i386	Done	2010-04-30 00:00
#14519	[DPM, LFC] LFC/DPM 1.7.5 release	In progress	2010-04-30 00:00
#14935	[CREAM CE] Release 1.6 for the client for gLite 3.1/sl4_i386	Done	2010-04-30 00:00
#9152	[FTS] FTS 2.3 release	In progress	2010-04-30 22:00
#9336	[DPM, LFC] LFC/DPM 1.8.0 release	Assigned	2010-05-30 00:00
#9366	[DPM, LFC] LFC/DPM release 1.9.0	On hold	2010-07-01 00:00
#9875	[WMS] release 3.4	Assigned	2010-07-01 00:00
#10114	[LCAS] Release 1.4	Assigned	2010-11-01 00:00

To be updated

Status of the workplan

- **Enhancements still present in the workplan**
  - Argus-based authorization in all the services and its integration with the Execution Environment Service
  - Support for bulk operations in the CREAM CE
  - Support for CREAM jobs in the Logging&Bookkeeping Service
  - Full migration to the GLUE v. 2 specification
  - Provision of a Web Service interface for VOMS
  - Integration of VOMS-Admin with external organizational DBs
  - Web management interface and improved monitoring in FTS
  - Support for banning users and groups in DPM and LFC
  - Support for bulk lookup in LFC
  - Generation of DPM usage information to support quotas

Issues

- **Manpower in other Activities**
  - Depending on other Activities generates expectations
  - Situation has improved with the introduction of Product Teams
    - Allocation of resources is more certain
- **Changing habits is challenging**
  - New process
  - New organization
  - More constraints

Transition to EGI Era

- **JRA1 tasks directly map to EMI WPs**
  - TJRA1.1 (Middleware Support) → SA1 (Maintenance and Support)
  - TJRA1.2 (Research & development and standardisation) → JRA1 (Middleware Development, Evolution and Integration)
- **Lessons learnt**
  - Move responsibility as close as possible to who is in charge of performing a task
  - Define the process (rules, guidelines, constraints, etc.) early in the project
  - Both applied to the EMI project

Conclusions

- **All Activity tasks have performed according to the plan**
  - Including the changes introduced in the second year
- **Achievements**
  - The gLite software is used, also outside EGEE
  - The gLite Open Collaboration has been established
  - gLite is a major contributor to the future middleware initiatives

DELETE SLIDE ON SUBMISSION

- **Complete the activity overview slide and major tasks**
  - You can reuse the same slides from the first year review since no budget was moved between partners or activities http://indico.cern.ch/conferenceTimeTable.py?confId=53198#all
- **Structure your slides & presentation time with:**
  - 50%: Goals and achievements of the activity:
    - Pictures showing metrics are better than slides of bullet points
    - Mention key tasks within the activity
      - *i.e. What's done, how managed, lead partner, involved partners, ...*
    - Changes to Y2 in response to the EGI Blueprint, Reviewer's comments
  - 10%: Any deviations from the workplan in year 2 - if there were any!
  - 20%: Any issues and how they have been addressed
  - 15%: Tasks handed over to EGI & lessons learnt
  - 5%: Summary slide highlighting the achievements
    - This slide to be left up during Q & A