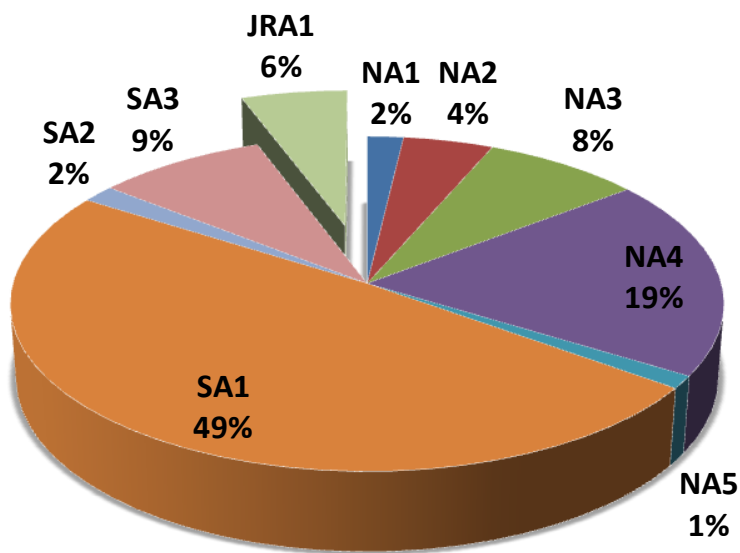
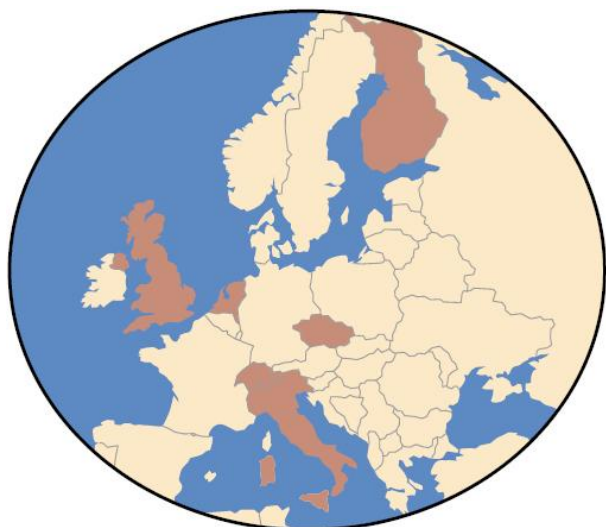


# JRA1 Middleware Re-engineering Status Report

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*INFN*

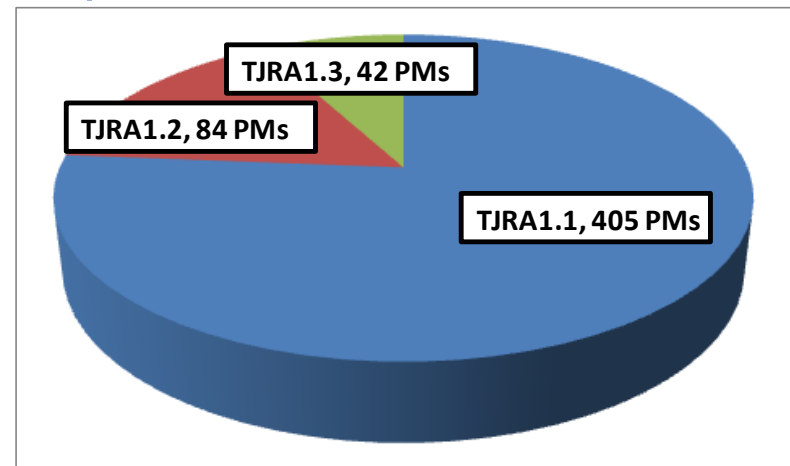
*EGEE-III Final Review, 23-24 June, 2010*

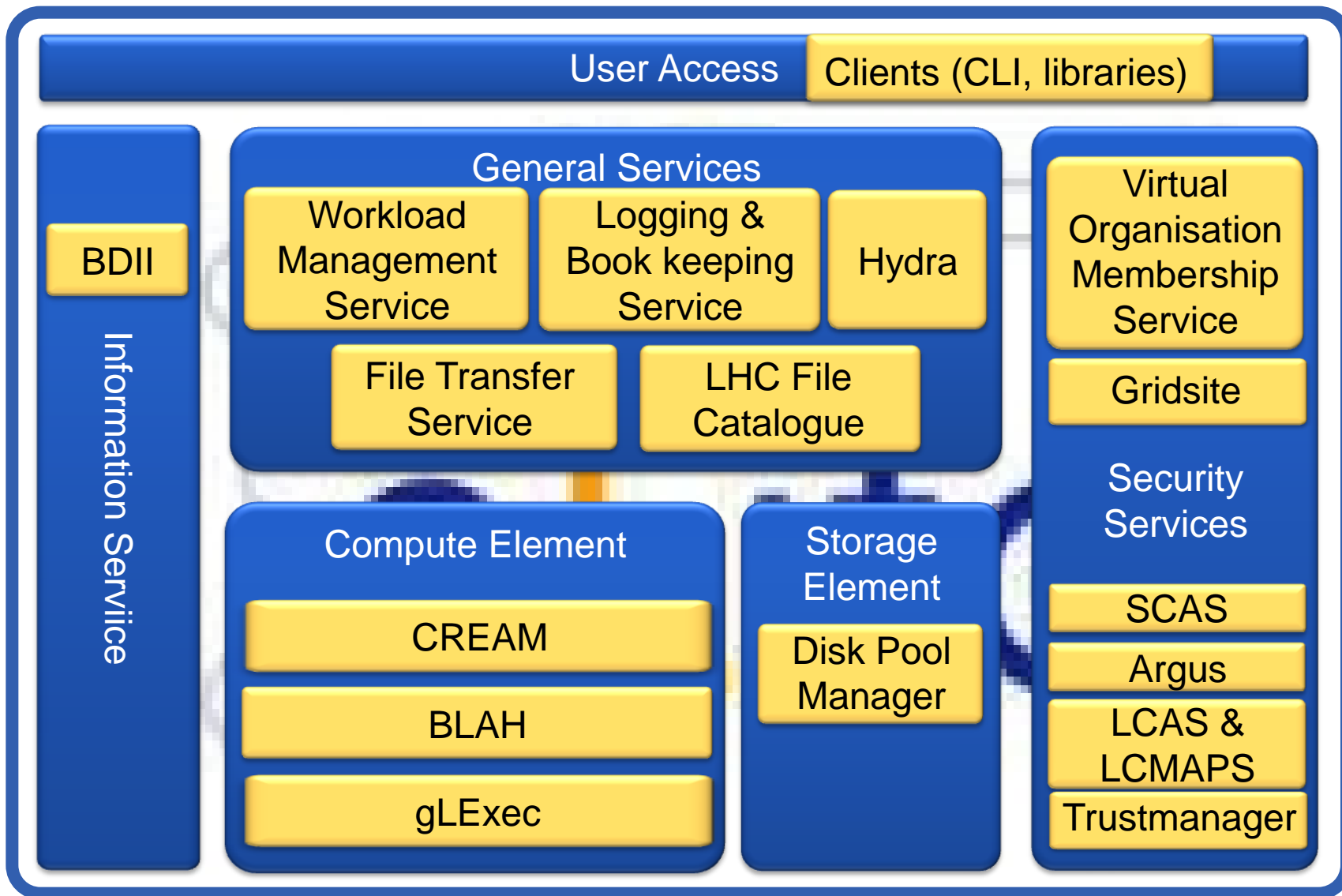


Country	Total PM planned at M24	Total FTE
CERN	78	3.3
Czech Republic	48	2.0
Finland	48	2.0
Italy	256	10.7
Netherlands	35	1.5
Switzerland	36	1.5
UK*	30	1.3
<b>Total</b>	<b>531</b>	<b>22.1</b>

\* Includes 18PMs of voluntary effort

- **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





## Goal: to keep an expanding infrastructure running

- **Middleware Support**

- 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 (Encrypted Data Storage) is in production (already in Y1)

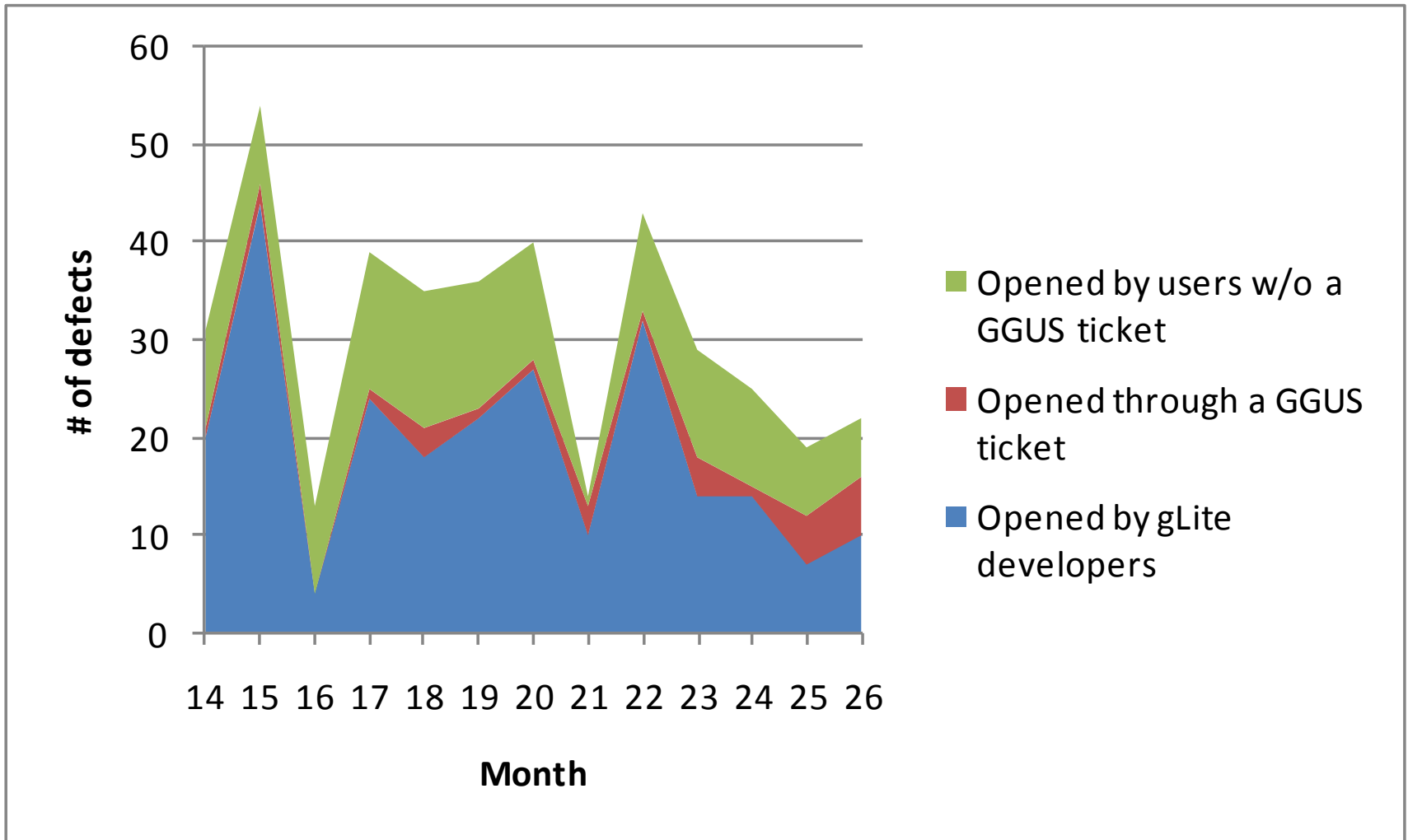
- **VOMS is widely used as Attribute Certificate Authority**
- **BDII is widely used as Information Service**
- **FTS is used in all major sites for large data transfers**
- **CEMon (the monitoring counterpart of the CREAM CE) is used also in OSG and CREAM itself is under evaluation**
- **gLExec and LCAS/LCMAPS 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 into the Debian and Fedora Linux distributions in collaboration with third-parties**
  - **BDII and GLUE, LFC and DPM, VOMS, Trustmanager, Gridsite**

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

- **The goal is a seamless transition to the software provisioning model foreseen in the EGI context**
- **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*



- **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**



- Separation policy in place, applied with flexibility

- **Primary goal and constraint of the gLite development**
- **Close links with OSG and NDGF**
- **Application workflows exist that successfully use both Grid and HPC environments**
  - Without any change in the middleware
- **Support for Shibboleth-based AAls**
  - SLCS and VASH
- **Some standardization successes**
  - GLUE
  - SRM
  - VOMS Attribute Certificates (coming soon)
- **Standardization is difficult**
  - Work in the OGF PGI WG is still in a phase of discussions and consensus building

- ***“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

- **Collaboration with SA2**

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

(-) Display Criteria

Browse with the **gLite Default** query form and **Simple** selection. Apply

Summary: IPv6  
 Assigned to: Any  
 Severity: Any  
 Submitted by: reale  
 Status: Any  
 Category: Any  
 Open/Closed: Open  
 Priority: Any  
 Item ID:

Additional constraint: deactivated

Any modified since 8 June 2010

Show: 50 items at once ; items with a spam score lower than 5

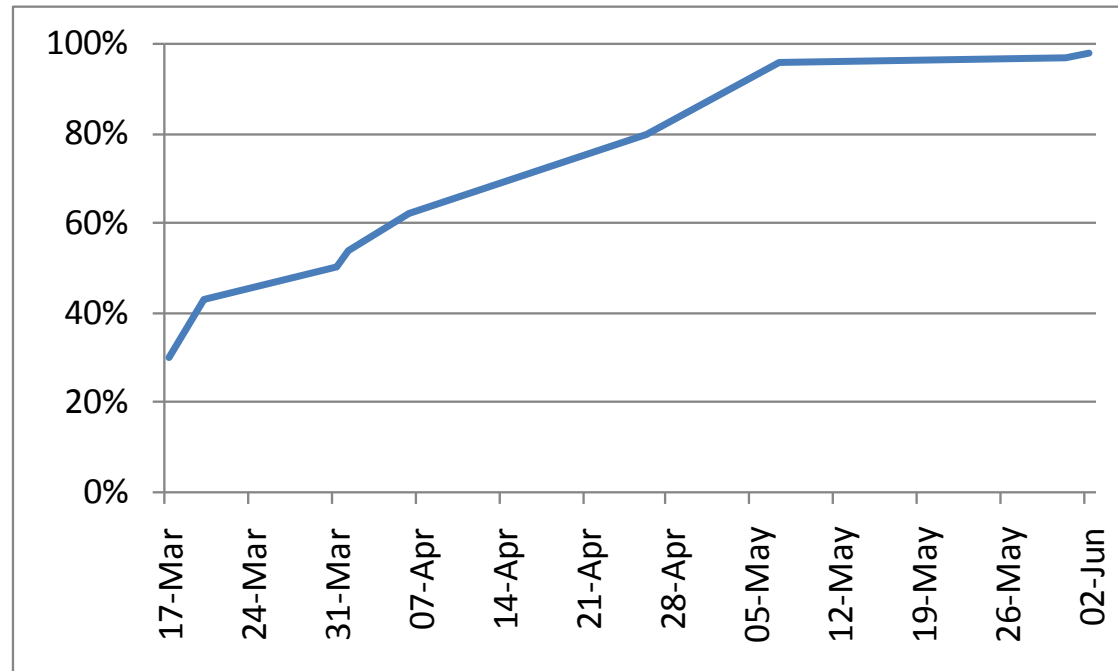
Click a column heading to sort results (up or down), or **sort by priority** or **reset sort**. You can also **activate multicolumn sort**. Currently, results are sorted by **Submitted on**.

3 matching items - Items 1 to 3

Item ID	Closed On	Status	Open/Closed	Assigned To	Submitted By	Summary
#41628-		In progress	Open	mc nab	reale	IPv6 bug: various non compliant calls and data struc. in the file http.c of the org.gridsite.core component
#41627-		In progress	Open	mc nab	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 performed by SA2 on their IPv6 testbed**
  - Some services are IPv6 ready

- **All the source code should include the copyright and license attributions agreed-upon by the project members**
  - Copyright clarified in source code
  - License Apache v. 2
- **The check is part of the validation of a new release**




- **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





- **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**
  - The rest will be pursued in the context of EMI releases

Item ID	Summary	Status	Should Be Finished On 
#14518	[DPM, LFC] LFC/DPM 1.7.4 release	Done	2010-03-31 00:00
#14391	[CREAM CE] Release 1.6.1 for gLite 3.1/sl4_j386	Done	2010-06-15 00:00
#14875	[WMS] release 3.2.14	Done	2010-06-20 00:00
#16045	[ lcg-CE ] release 3.1.41	In progress	2010-06-30 00:00
#16047	[ glite-CLUSTER ] release 3.1.0-1	In progress	2010-06-30 00:00
#9366	[DPM, LFC] LFC/DPM release 1.9.0	On hold	2010-07-01 00:00
#16027	[ WN ] release 3.2.8	Done	2010-07-01 00:00
#16170	[ FTS ] release 2.2.5	In progress	2010-07-01 00:00
#16171	[ WN ] release 3.2.9	In progress	2010-07-01 00:00
#16029	[ UI ] release 3.2.8	In progress	2010-07-15 00:00
#14045	[ARGUS] Release 1.2	Assigned	2010-07-18 00:00
#9424	[LB] release 2.1	In progress	2010-07-31 00:00
#10116	[hydra] Release 1.3	In progress	2010-07-31 00:00
#16030	[ VOBOX ] release 3.2.5	Assigned	2010-07-31 00:00
#14519	[DPM, LFC] LFC/DPM 1.7.5 release	In progress	2010-08-01 00:00
#16172	[ UI ] release 3.2.9	Assigned	2010-08-15 00:00
#9731	[VOMS] Release 2.0	In progress	2010-09-30 00:00
#9735	[CREAM CE] Release 1.7	In progress	2010-09-30 00:00

- **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**
- **Complete implementation of the EGEE MPI WG recommendations**
- **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**

- **Relationship with other Activities**
  - Especially SA3
  - Coordination of effort and workflow across activities is complicated
  - Situation has improved with the introduction of Product Teams
    - Allocation of resources is under more control
- **Changing habits is challenging**
  - New process
  - New organization
  - New context
  - More constraints

- **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 and control where they belong
    - E.g. development and testing should stay in the same administrative domain
  - Adopt simple and enforceable rules – and keep to them
  - Software development is never finished
    - New requirements from users
    - Environment keeps changing
    - Priorities keep changing

- **All Activity tasks have performed according to the plan**
  - Including the changes introduced in the second year
- **Achievements**
  - All gLite services have evolved to address the needs of a growing infrastructure
  - The gLite software is widely used, also outside EGEE
    - OSG, NDGF, BalticGrid, SEE-GRID, Health-e-Child, eNMR, D4Science, EELA, etc.
  - New process and new organization are in place
  - The gLite Open Collaboration has been established
  - gLite is a major contributor to the future middleware initiatives