**EGI-InSPIRE**

**QUARTERLY REPORT 10**

**EU MILESTONE: MS111**

|  |  |
| --- | --- |
| Document identifier: |  |
| Date: | 05/11/2012 |
| Activity: | **NA1** |
| Lead Partner: | **EGI.eu** |
| Document Status: | **FINAL** |
| Dissemination Level: | **PUBLIC** |
| Document Link: | https://documents.egi.eu/document/513 |

Abstract

The template that must be followed after PM18 by all activities to generate the project's quarterly report.

1. Copyright notice

Copyright © Members of the EGI-InSPIRE Collaboration, 2010-2014. See [www.egi.eu](http://www.egi.eu) for details of the EGI-InSPIRE project and the collaboration. EGI-InSPIRE (“European Grid Initiative: Integrated Sustainable Pan-European Infrastructure for Researchers in Europe”) is a project co-funded by the European Commission as an Integrated Infrastructure Initiative within the 7th Framework Programme. EGI-InSPIRE began in May 2010 and will run for 4 years. This work is licensed under the Creative Commons Attribution-Noncommercial 3.0 License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/3.0/> or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, and USA. The work must be attributed by attaching the following reference to the copied elements: “Copyright © Members of the EGI-InSPIRE Collaboration, 2010-2014. See [www.egi.eu](http://www.egi.eu) for details of the EGI-InSPIRE project and the collaboration”. Using this document in a way and/or for purposes not foreseen in the license, requires the prior written permission of the copyright holders. The information contained in this document represents the views of the copyright holders as of the date such views are published.

1. Delivery Slip

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Partner/Activity** | **Date** |
| **From** | <<The lead author/editor>> |  |  |
| **Reviewed by** | **Moderator:**  **Reviewers:** |  |  |
| **Approved by** | **AMB & PMB** |  |  |

1. Document Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Issue** | **Date** | **Comment** | **Author/Partner** |
| 1 |  | First draft |  |
| 2 |  |  |  |
| 3 |  |  |  |

1. Application area

This document is a formal deliverable for the European Commission, applicable to all members of the EGI-InSPIRE project, beneficiaries and Joint Research Unit members, as well as its collaborating projects.

1. Document amendment procedure

Amendments, comments and suggestions should be sent to the authors. The procedures documented in the EGI-InSPIRE “Document Management Procedure” will be followed:  
<https://wiki.egi.eu/wiki/Procedures>

1. Terminology

A complete project glossary is provided at the following page: <http://www.egi.eu/about/glossary/>.

1. PROJECT SUMMARY

To support science and innovation, a lasting operational model for e-Science is needed − both for coordinating the infrastructure and for delivering integrated services that cross national borders. The EGI-InSPIRE project will support the transition from a project-based system to a sustainable pan-European e-Infrastructure, by supporting ‘grids’ of high-performance computing (HPC) and high-throughput computing (HTC) resources. EGI-InSPIRE will also be ideally placed to integrate new Distributed Computing Infrastructures (DCIs) such as clouds, supercomputing networks and desktop grids, to benefit user communities within the European Research Area.

EGI-InSPIRE will collect user requirements and provide support for the current and potential new user communities, for example within the ESFRI projects. Additional support will also be given to the current heavy users of the infrastructure, such as high energy physics, computational chemistry and life sciences, as they move their critical services and tools from a centralised support model to one driven by their own individual communities.

The objectives of the project are:

1. The continued operation and expansion of today’s production infrastructure by transitioning to a governance model and operational infrastructure that can be increasingly sustained outside of specific project funding.
2. The continued support of researchers within Europe and their international collaborators that are using the current production infrastructure.
3. The support for current heavy users of the infrastructure in earth science, astronomy and astrophysics, fusion, computational chemistry and materials science technology, life sciences and high energy physics as they move to sustainable support models for their own communities.
4. Interfaces that expand access to new user communities including new potential heavy users of the infrastructure from the ESFRI projects.
5. Mechanisms to integrate existing infrastructure providers in Europe and around the world into the production infrastructure, so as to provide transparent access to all authorised users.
6. Establish processes and procedures to allow the integration of new DCI technologies (e.g. clouds, volunteer desktop grids) and heterogeneous resources (e.g. HTC and HPC) into a seamless production infrastructure as they mature and demonstrate value to the EGI community.

The EGI community is a federation of independent national and community resource providers, whose resources support specific research communities and international collaborators both within Europe and worldwide. EGI.eu, coordinator of EGI-InSPIRE, brings together partner institutions established within the community to provide a set of essential human and technical services that enable secure integrated access to distributed resources on behalf of the community.

The production infrastructure supports Virtual Research Communities (VRCs) − structured international user communities − that are grouped into specific research domains. VRCs are formally represented within EGI at both a technical and strategic level.

1. EXECUTIVE SUMMARY

The document structure is describes the overall Quarterly Report (QR) sent to the European Commission (EC). The QR is structured around the different work packages within the project and the different activities within them (national operations & user support, European wide coordination, domain specific support, etc.). **The completed documents from each Activity will then be assembled into a complete report by the Project Office (PO).** For each section we will indicate who will provide the required information. The AMs (Activity Managers) should complete their relevant sections with input from the ROCs/NGIs/Partners as required.

The schedule is described below with reference to days after the end of the quarter and is different from the normal deliverable/milestone review schedule:

* Day + 10: All activities to provide their contributions to the QR using this template.
* Day + 20: The contributions will be assembled and edited by the PO. Issues requiring clarification will be identified and communicated to the AMs.
* Day + 25: PO circulates a final version to the AMB for review with an Executive Summary and having had responses from the AMs to the clarifications.
* Day + 30: Submit to EC.

**Table of contents**

1. Introduction 9

2. Operations 10

2.1. Summary 10

2.2. Main achievements 10

2.2.1. Security 10

2.2.2. Service Deployment and Integration 10

2.2.3. Help desk & Support Activities 10

2.2.4. Infrastructure Services 10

2.2.5. Tool Maintenance and Development 10

2.3. Issues and Mitigation 10

2.3.1. Issue 1 10

2.3.2. Issue n 10

2.4. Plans for the next period 10

2.4.1. Operations 10

2.4.2. Tool Maintenance and Development 10

2.5. NGI Reports 11

3. User Support 12

3.1. Summary 12

3.2. Main achievements 12

3.2.1. User Community Support Team 12

3.2.2. User Support Services 12

3.2.3. NGI User Support Teams 12

3.2.4. Shared Services & Tools 12

3.2.5. Domain Specific Support 12

3.3. Issues and Mitigation 13

3.3.1. Issue 1 13

3.3.2. Issue n 13

3.4. Plans for the next period 13

4. Software Provisioning 14

4.1. Summary 14

4.2. Main Achievements 14

4.2.1. Quality Criteria 14

4.2.2. Criteria Verification 14

4.2.3. Deployed Middleware Support Unit 14

4.2.4. Support Infrastructure 14

4.3. Issues and Mitigation 14

4.3.1. Issue 1 14

4.3.2. Issue n 14

4.4. Plans for the next period 14

5. External Relations 15

5.1. Summary 15

5.2. Main Achievements 15

5.2.1. Dissemination 15

5.2.2. Policy 15

5.2.3. Events 15

5.3. Issues and mitigation 15

5.3.1. Issue 1 15

5.3.2. Issue n 15

5.4. Plans for the next period 15

6. Consortium Management 16

6.1. Summary 16

6.2. Main Achievements 16

6.2.1. Project Management 16

6.2.2. Milestones and Deliverables 16

6.2.3. Consumption of Effort 16

6.2.4. Overall Financial Status 16

6.3. Issues and mitigation 16

6.3.1. Issue 1 16

6.3.2. Issue n 17

6.4. Plans for the next period 17

7. Project Metrics 18

7.1. Overall metrics 18

7.2. Activity metrics 18

7.3. Country metrics 18

8. ANNEX A1: Dissemination and Use 19

8.1. Main Project and Activity Meetings 19

8.2. Conferences/Workshops Organised 19

8.3. Other Conferences/Workshops Attended 19

8.4. Publications 20

9. ANNEX A2: Operations Report – Applicable to SA1 Only 21

10. References 22

# Introduction

*Completed by the PO by editing the introductions provided by each AM.*

# Operations

## Summary

*Please provide a short summary of the Operations’ progress globally over the last quarter. It will be included in the Executive Summary.*

## Main achievements

*This is a more detailed account of progress over the previous quarter, can be by task. Drawn up by the SA1 & JRA1 AMs based on NOC/ROC input in Annex A2.*

### Security

*TSA1.2*

### Service Deployment and Integration

*TSA1.3*

### Help desk & Support Activities

*TSA1.6 & TSA1.7* ***including highlights from both the NGI Operations and User Support Teams****.*

### Infrastructure Services

*TSA1.4, TSA1.5 & TSA1.8*

### Tool Maintenance and Development

*Report by the JRA1 AM. Sub-section for each tool.*

## Issues and Mitigation

*Summarised by the SA1 AM from the ROC ‘Issues and Mitigation’ sections and the JRA1 AM.*

*Please provide corrective actions taken for each issue reported and provide updates from unresolved issues from the previous QR.*

### Issue 1

### Issue n

## Plans for the next period

### Operations

*Summarised by the SA1 AM from the ROC ‘Plans’ sections.*

### Tool Maintenance and Development

*Summarised by the JRA1 AM.*

## NGI Reports

# Domain Specific Support and Shared Services & Tools

## Summary

*Please provide a short summary of the shared services and tools activity over the last quarter. It will be included in the Executive Summary.*

## Main achievements

### Dashboards

#### HEP Dashboard Application

During QR10 substantial progress was made in the development of various Dashboard applications, in particular in the area of data management monitoring

#### Job monitoring

The new job monitoring historical view dedicated to the CMS production team was prototyped and deployed on the test server. The new application is being validated by the CMS production team.

The prototype of Analysis Task monitoring which includes the ability to kill jobs from the Task monitoring user interface was deployed on the test server and is being intensively tested in order to make sure that user privileges are properly handled by the application.

Following the feedback of the user community, 19 feature requests were implemented in the Production Task monitoring and 17 feature requests were implemented in the Job Monitoring Historical View application.

#### Data Management monitoring

#### WLCG Transfer Dashboard

During the last quarter major effort was directed to extend the functionality of the WLCG Transfer Dashboard. The latency monitoring functionality was prototyped. The new version of the WLCG Transfer Dashboard allows one to detect various inefficiencies in the data transfers performed by the FTS servers.

Another important development area was enabling monitoring of the data traffic of the xrootd federations. The monitoring of the xrootd transfers of ATLAS and CMS were enabled in the new version of the WLCG Transfer Dashboard which is currently undergoing validation. Current effort is focused on integration of monitoring of the xrootd transfers performed by the ALICE VO.

#### Monitoring of data transfer and data access in the xrootd federation

The LHC experiments are actively investigating new data management scenarios and xrootd federations start to play an important role in enabling transparent data access for job processing. For that reason, monitoring of data access and data transfers in the xrootd federation becomes an important task. The Experiment Dashboard aims to provide a common solution for monitoring of the xrootd federations. Two prototypes with similar functionality but different persistency implementations are being developed. ORACLE is used as a database backend for the first prototype. Foreseeing a per-federation deployment model of the xrootd monitor, the Experiment Dashboard offers another solution with Hadoop/Hbase used for implementation of the monitoring data repository. The user interface based on the xBrowser framework developed for transfer monitoring applications is shared by both prototypes and has a common core part with the WLCG Transfer Dashboard and ATLAS DDM Dashboard.

#### ATLAS DDM Dashboard

During the last quarter the following new features were deployed on the ATLAS DDM Dashboard production servers: Consolidation of transfer plots, Addition of registration error samples and plots and numerous UI tweaks. The following new features were deployed on the test server with a production release scheduled for November: Combined efficiency statistics, Addition of staging statistics, error samples and plots.

#### ATLAS DDM Accounting portal

The ATLAS DDM Accounting portal was prototyped in the beginning of summer 2012. During the reference period the application was validated by the ATLAS community. More than 30 feature requests had been submitted and were implemented. The application was deployed in production in the end of September and is being intensively used by the ATLAS community, in particular by managers of the ATLAS computing projects.

#### Monitoring of the sites and services

The Site Usability Monitor (SUM) which provides visualization of the results of the remote tests submitted via the SAM/Nagios framework and site availability based on these results is heavily used by the LHC experiments for monitoring everyday operations. The data visualized in SUM is retrieved from the SAM repositories using the SAM APIs. Therefore validation of the new SAM releases should include validation of the SAM APIs. The set of tests aiming to check the content and format of data retrieved with SAM APIs has been developed and is being used for validation of the new SAM releases.

#### Life Science Dashboard Design

The LSGC (“Life Sciences Grid Community” VRC) technical support team continuously monitors grid resources allocated to Life Sciences users. It works in close collaboration with NGIs' operation teams and with the developers of VO-level monitoring tools, to improve the tooling available for troubleshooting and operating resources, and therefore to improve the quality of service delivered to the users. In particular, it interacts with the development team of the VO Operations Dashboard.

The technical support team has developed new tools and web reports to allow the monitoring of VRC resources. Together, they form a set of LSGC Dashboard tools, integrating:

* Life Sciences applications Web gadget interfaced to the Applications Database ;
* Web gadget for Community requirements posted to the Requirement Tracker system;
* Web gadget for Life Sciences trainings interfaced to the Training marketplace ;
* A dedicated Nagios server deployed by the French NGI;
* Community files management gadgets to monitor storage space consumed VRC-wise, anticipate problems of storage resources filling up, handle SEs decommissioning, file migration procedures;
* Centralized view of VO resources that are currently not up and running (downtimes, not in production...);
* Miscellaneous tools for facilitating daily follow-up of issues, manual checks, etc.

More effort is currently invested in the monitoring of the computing resources used and needed by the community.

### Tools

#### Ganga

During PQ10 Ganga development has included multiple bug fixes, feature requests and efficiency improvements.

Most notably, the GangaTasks package saw significant improvements, including:

* Phased job submission, which ‘drip-feeds’ jobs to the executing backend to avoid adversely affecting a user’s priority ranking.
* Automatic transfer of output data to local or Grid-hosted storage.
* Automatic and complete bookkeeping of output data.
* Chaining of transform tasks was added, to allow sequential work flows to be configured.

Introduction of the new, lightweight, GangaService package provides the ability to run Ganga either as a daemon (i.e. Ganga will run until the specified input script has completed), or in a client/server mode, wherein Ganga responds to commands passed via an *application programming interface* (API) on a given port.

The Ganga test framework was extended to identify internal object schema changes which were non-backwards compatible. The effect of such incompatibilities is that a user creating a job or task object in a particular Ganga release would not be able to load the same object in a version with an incompatible schema. Thus, the test framework generates Ganga objects for each production version and verifies that all objects created with previous releases can be loaded into the current release candidate.

Furthermore, Ganga was updated to utilise the latest releases of the experiment-specific tools, such as ROOT, the ATLAS Panda client and LHCbDirac. Finally, a fix was deployed to ensure Ganga remains compatible with the latest version of the EMI JDL specification.

### Services

#### Hydra

The Hydra service relies on the fact that the Hydra client software be (i) installed on all sites where Worker Nodes may be required to access the Hydra service (presumably all sites accessible to the LS HUC VOs), or (ii) installed and published by means of runtime environment tags on those sites that wish to support the service. However, a survey has revealed that lots of production sites were misconfigured, not having deployed the Hydra client, having deployed an older version of the Hydra client, or publishing Hydra tags that are not consistent with the deployed client if any. Consequently, during this period a negotiation was led with each site publishing Hydra tags, or providing Hydra client without tags, to clear off the situation.

However, along with sites migrating their WNs to EMI2 (see more information in 3.4.1), and as long as Hydra is not officially released in EMI2, the service cannot be used for production. Instead, the service delivered today remains a test service that gives the opportunity for the validation of the functionality delivered and the testing of the deployment procedures.

#### GReIC

During PQ10, the following activities have been carried out:

1. The first implementation of the DashboardDB Monitoring service view has been completed and released in the official DashboardDB application.
2. Extension of the DashboardDB registry to include new community-based features.
3. A web-desktop application (DashboardDB Desktop) including the DashboardDB registry and monitoring gadgets has been designed, implemented and released.
4. Dissemination activities.
5. An initial plan for the GRelC service software towards EMI.

Concerning point 1 (DashboardDB service view), the monitoring module focusing on a single GRelC service instance has been implemented and released. This new view provides information about the status of each single GRelC service instance deployed at the EGI level. Starting from the DashboardDB global monitoring, the user can now exploit this new view to drill-down into a specific service instance. The GUI part was implemented during PQ10 and released in the DashboardDB application.

Concerning point 2 (DashboardDB registry) a new release of the grid-dabatase registry gadget has been deployed. The improvements are related to a bug fixed in the list of the discussions and a new community-based feature to add a “like/dislike” flag for the messages posted in the discussions. The number of posts for each discussion and the user who posted the last message are now available in the summary view listing all the active discussions.

Concerning point 3 (DashboardDB Desktop), a web desktop application including the two gadgets released in the last months has been designed and implemented. The DashboardDB Desktop represents a flexible environment joining the pervasiveness and platform independence of a web-based application with a superior user experience and responsiveness related to a desktop-based application. It includes all of the gadgets implemented during the project and new ones related to well-known social networks such as Twitter and Youtube.

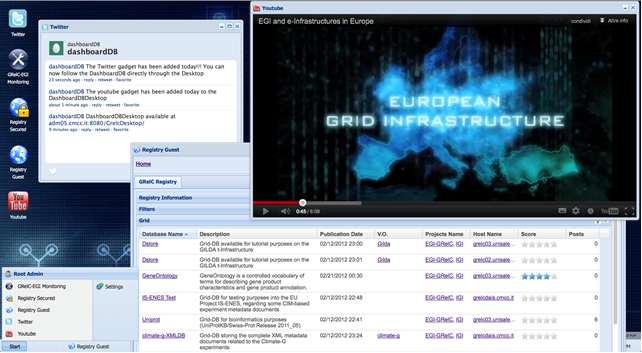


Figure 3‑1: DashboardDB Desktop environment showing the Registry, Twitter and Youtube gadgets.

Examples include:

* The DashboardDB registry (both secured and guest-based).
* The DashboardDB monitoring (from global to service based views).
* The Twitter gadget to follow the activities related to the DashboardDB application (the “DashboardDB” account has been created during PQ10).
* The Youtube gadget for dissemination purposes. The current version includes just one video, but in the next months it will be extended to allow the users to choose one item among a set of multimedia resources related to the GRelC software for training, communication, dissemination, etc.

The DashboardDB Desktop is very extensible, easy to use and new gadgets can be straightforwardly included as new “apps”. Moreover the desktop approach provides the ability to maintain several “apps” active at the same time in separate windows (see Figure 3-1). It is important to note that the DashboardDB Desktop provides both secured (through login/password) and guest-based gadgets (grid-certificates are not needed to carry out the authentication step). Finally, the DashboardDB Desktop aims to integrate in a web-desktop based environment all of the resources related to the GRelC software (GRelC website, DashboardDB gadgets, dissemination material, community-based gadgets, etc.)

Concerning point 4, (dissemination activities) some grid-database services and data providers have been contacted to register/publish their own data resources/services into the DashboardDB system. This process will continue until the end of PY3. In this regard, as a preliminary result, two sites (one in Catania - INFN-CATANIA - and another one in Naples - GRISU-SPACI-NAPOLI), will respectively to update and install the gLite 3.2 version of GRelC, publishing these new resources into the DashboardDB system. Another activity related to the dissemination task has been the preparation of a short overview related to the two main gadgets (DashboardDB Monitoring and Registry) to be posted on the EGI website. This document has been prepared in recent months jointly with the NA2 representatives and validated at the end of PQ10. This material will be soon available from the EGI website, jointly with a new entry under 'Support Services' about 'Scientific databases'. Finally, dissemination material (1-minute video) about the GRelC software (www.grelc.unile.it), the DashboardDB application (http://adm05.cmcc.it:8080/dashboardDB/) and the DashboardDB Desktop (http://adm05.cmcc.it:8080/GrelcDesktop/) has been prepared for the IGI booth at the SC2012 (Salt Lake City, November 10-16, 2012) to be included in a video presenting all the IGI activities.

Concerning point 5 (GRelC & EMI), a preliminary study regarding the compatibility of GRelC software with the EMI distribution has been carried out. More effort in this direction is needed and it will be devoted during PQ11.

### Workflow & Schedulers

During PQ10 work related with Serpens (Kepler) has been focused on :

* Integration of Kepler with GridWay services. This includes the development of the actors and workflows for interacting with GridWay using the GridSAM BES interface implementation.
* Small fixes of the Astrophysics workflow in response to user requests.
* Extension of the Astrophysics workflow usecase, developed and reported in previous deliverables.
* Preparation of Fundamenta Informatica, JoCS journal publications describing the work performed to date.

### SOMA2

During the first month of PQ10, work consisted of developing general improvements into SOMA2. The aim was to stabilize the code for a version release. However, starting from September 2012 CSC has totally used the allocated EGI SA3 funding. This work is therefore now unfunded and the development effort is focused primarily at the national level. CSC will however support the existing SOMA2 services and it is foreseen that this will also suffice for the needs of the international SOMA2 service (SOMA2 EGI pilot). During PQ11 CSC aims to publish yet another public release of SOMA2 (1.5.0 Silicon) which will contain all the development efforts of PQ9 and PQ10

### MPI

### High Energy Physics

#### LHCb Dirac

The DIRAC framework provides a complete solution for using the distributed computing resources of the LHCb experiment. DIRAC is a framework for data processing and analysis, including workload management, data management, monitoring and accounting (for further details see [MS610]). The LHCbDIRAC framework is the DIRAC extension specific to the LHCb experiment, which has been formally separated from DIRAC in order to streamline the implementation of features requested by the LHCb community. EGI-InSPIRE support of LHCbDIRAC began in October 2010.

During PQ10 activity focused on the following.

* The first version of the popularity service, developed during the previous quarters of the current year and put in production during July, was exposed to users. Their feedback triggered some feature requests that have been implemented and carefully tested during PQ10. The Popularity service should provide metrics to assess the data-sets popularity and provide a ranking of the most popular data-sets (i.e. data most frequently accessed by users). The plots produced by the Popularity service also provide useful information about the usage pattern by users, thereby guiding strategies for data production activities.
* The new version of the LHCbDIRAC agent, which provides accounting plots for storage resources usage, is undergoing a thorough validation. Some improvements have been validated and put into production during PQ10. Other features, which required more fundamental changes, are still under validation and will be released during PQ11.
* General support for LHCb computing operations on the grid, both for production and private user activity. In particular, during the last quarter, significant effort has been dedicated to the finalisation of old productions that were nearing completion, but still active in the system, causing an overload for the production system. Many pathological cases due to bugs in the systems or rare race conditions were identified and fixed. The cleaning campaign has concluded and the objective of reducing the load on the production system by 50% attained. The second part of the exercise consists of exploiting the experience gained during the cleaning campaign, and proposing and implementing improvements in the production system in order to streamline the process of finalising productions. The objective is to reduce the person-power needed for production management and to make the whole system more sustainable. This second phase of the task was started during the last quarter and will be continued during the following months.

#### CRAB Client

During PQ10 a new version of the CRAB2 Client was released. This was intended to:

* Increase the reliability of job execution on worker nodes by adding a watch dog system during the job execution.
* Support CVMFS deployed at sites.
* Support remote glidein.
* Fix a series of bugs.

On the development side the main functionalities added to the CRAB3 generation of tools were:

* Support of the input lumi-mask to enable the capability for the user to select the input data to be analysed at a finer granularity.
* Automate data publication through the AsyncStageOut service and the newly developed DBSPublisher component.
* Introduce the ability to perform a manual resubmission of failed jobs, respecting the security constraints.
* Other required functionalities to manage the workflow (to produce reports, monitor transfers and the publication status) and to perform troubleshooting in the event of failures (i.e. retrieve log file, kill pending jobs etc.)
* Improve web monitoring to track the progress of all workflows and in order to have an overview on the distributed system activities.
* Various fixes have been added, including improvements to the command line interface on the client side.

During Q10 two distinct versions of the services providing these functionalities were released: 3.1.1 (July) and 3.1.2 (1st October). In both cases there was intensive testing performed by the CMS Integration group, which included the participation of beta-users. In both test campaigns useful feedback was provided and a solution implemented in subsequent releases. Another aspect of the work conducted has been the refactoring of the deployment scripts. These were improved in order to automate the deployment of CRAB3 services on the CMS Cluster (cmsweb.cern.ch), allowing for the deployment of dedicated redundant services on which CRAB3 relies on.

#### Persistency Framework

During PQ10 activity focused on development and debugging of the CORAL frontier monitoring package.

At the moment the latest version available to the experiment does not allow any client side monitoring for the CORAL Frontier application due to a bug in a specific class of the package. Furthermore it does not allow multi-thread monitoring as the structure of the log in the cache enables just a simple chronological list of operations without any other element to distinguish the particular session the operation belonged to. In other words, the output needs to be modified to enable assignment of each operation to a specific session and transaction.

Therefore, a new hierarchical structure was implemented. To achieve this, a fake session and transaction identification (ID) is assigned to each session and transaction. Subsequently the structure of the cache was modified to allow the inclusion of these new elements. Finally a map was implemented to sort the database operations by session and transaction ID. This new structure is now able to cope with the multi-thread applications used by the experiments. A test suite was implemented to validate all the modifications. However, currently, a problem of dead-lock due to some mutex is still present. This issue is still under investigation.

At the same time, detailed documentation covering CORAL Frontier monitoring has been prepared using UML. Uses case, Sequence, Collaboration and Class diagrams are already available.

#### ATLAS and CMS Common Analysis Framework

For the past two years of LHC data taking, the distributed analysis frameworks of the ATLAS and CMS experiments have successfully enabled the experiments’ physicists to perform large-scale data analysis on the WLCG sites. However, a common infrastructure to support analysis is a step in the direction of reducing development and maintenance effort and thereby improving the overall sustainability of the systems. The eventual goal of the project is for the experiments to use a common framework based on elements from PanDA, the CMS WMS and the glideinWMS.

After the feasibility study that was carried out in the previous quarter, which had a successful outcome, the work of PQ10 has focused on a Proof of Concept setup for the integration of the ATLAS workload management system with CMS specific plugins, such as the CRAB interface and the Asynchronous Stage Out tools. WP6 SA3.3 funded effort has acted as the ATLAS liaison, by initially interfacing ATLAS and CMS developers and by providing support to set up the testbed infrastructure. This activity included:

* Providing detailed instructions about how to submit jobs to PanDA and how to manually configure the environment to run a pilot that retrieves the submitted payload.
* Setting up and operating a PanDA Pilot Factory.
* Adding CMS grid sites participating in this phase to the configuration database and configuring them in the pilot factory.
* Help in debugging problems of pilots failing to run at sites.

### Life Sciences

The “Life Sciences Grid Community” (LSGC) VRC is developing management tools to provide a VRC-wise vision of the activity and facilitate the VRC administration, help VOs of the community to mutualise efforts and leverage common tools to avoid duplicating efforts. The LSGC technical support team has regular phone meetings (every one or two weeks) to coordinate its activities. It invests a significant fraction of its time in anticipating technical problems arising on the infrastructure from a VRC perspective through proactive monitoring and periodic testing of VRC resources. This continuous work aims to minimise the impact of infrastructure and middleware-related faults from a user perspective, thereby improving the grid users experience. Leveraging the experience gained, the LSGC technical team increasingly liaises with Operations and some resource provision sites to improve resources allocation and management policies and thus anticipate shortages or potential failures.

Complementarily, per-VO and VRC-wide mailing lists have been set up and are kept up to date to ensure communication within the community. Several Web gadgets customized for the Life Sciences have been added to the LSGC wiki, with the help of the User Communities Support Team (see section 3.2.1.3 for a detailed list).

### Astronomy and Astrophysics

### Earth Sciences

## Issues and Mitigation

The LSGC technical team still consumes most of its effort in performing basic monitoring of the grid resources and services accessible to the VRC. It can hardly focus on application domain-specific tasks. Discussions are continuing with Operations to improve and mutualise infrastructure monitoring tools and dashboards.

The LSGC currently faces an increasing demand for computing resources that is hardly satisfied as most sites only provide opportunistic access to their resources for this VRC. In the context of an overall computing power demand increasing over the EGI grid, many sites do not allocate any computing slots to the VO anymore in practice, although they will accept and queue biomedical computing tasks (jobs starvation). Discussions are on-going with EGI.eu, NGIs and largest site administrators to improve the VRC resources allocation policies.

## Plans for the next period

*Summarised by the SA3 AM.*

As project year 3 is the final year of the SA3 work package, the main theme is to complete all work described in the Description of Work and to hand over support to the future support teams.

### Hydra service

Several concerns hamper the deployment of the Hydra service in production: on one hand the Hydra client currently deployed on the production infrastructure is available only with gLite 3.2, for which security support will terminate by November 2012. On the other hand, there is no planned date for the delivery of the Hydra client developed as part of the EMI middleware, and first tests show that its dependencies are incompatible with the gLite 3.2 release. Hence, along with resource providers choosing to migrate their Worker Nodes to EMI before the Hydra client is released, we can expect the number of appropriate WN supporting Hydra to decrease.

A close follow-up of EMI release plans is organized to ensure that the client be integrated in a future EMI release and deployed as part of the standard distribution. This work is bound by the frequency of EMI release schedules though.

### GReIC

A key activity for the last six months of PY3 will be “community outreach” to disseminate the main results of this activity, attract new users and register new grid-database resources. During the next period, new actions in the dissemination plan (jointly defined in June with NA2 representatives) will be implemented. The DashboardDB Desktop will be extended to include new applications and it will be publicised among the user communities. A strong interaction with the end users will focus on adding new entries in the DashboardDB registry in terms both of grid-database resources and grid-database service instances. In terms of use cases, a new one (jointly defined with CMCC scientists and exploiting GRelC as a grid data interface to manage climate change datasets) has been defined and will be implemented until the end of PY3 to provide data analytics functionalities for a subset of CMIP5 climate change data in the NetCDF format.

Concerning EMI & GRelC, the initial study started in PQ10, will be completed at the beginning of PQ11. The deadline to provide outcomes on the porting activity is the end of PY3. Participation to the SC2012 is planned for PQ11 as part of the dissemination activities.

### LSGC dashboard

Increased integration of the VRC monitoring, users management and reporting tools into the LSGC dashboard is on-going, regarding in particular the following services:

1. User management tools, covering users life cycle management, interface with the VOMS and Application Database services;
2. VRC-wide accounting, needed to deliver statistics at the VRC level. The current EGI accounting portal only provides per-VO accounting information
3. Monitoring of computing resources availability to detect possible bottle necks among computing resources, and eventually address this issue at different levels, for instance in job submission policies.

Additionally, close collaboration continues with the VO Operations Portal development team, to define and test features.

### MPI

# Software Provisioning

## Summary

*Provide a short summary of the software provisioning activity over the last quarter. It will be included in the Executive Summary.*

## Main Achievements

### Quality Criteria

*Relating to TSA2.2 collected by the SA2 AM.*

### Criteria Verification

*Relating to TSA2.3 collected by the SA2 AM.*

### Deployed Middleware Support Unit

*Relating to TSA2.5 collected by the SA2 AM and describing the work undertaken for each middleware deployed in the infrastructure.*

### Support Infrastructure

*Relating to TSA2.4 specifically to the software repository, but also information non the general tools and services provided to support the project. Collected by the SA2 AM.*

## Issues and Mitigation

*Summarised by the SA2 AM.*

*Provide corrective actions taken for each issue reported and provide updates from unresolved issues from the previous QR.*

### Issue n

### Issue n

## Plans for the next period

# Community Engagement

## Summary

*Brief overview of the last quarter for marketing & communications, strategy & policy, community outreach and engagement to new communities.*

*Summarised by the NA2 AM.*

## Main Achievements

### Marketing & Communication

*Work undertaken by TNA2.2 from each partner.*

### Strategic Planning & Policy Support

*Work undertaken by TNA2.3 from each partner.*

### Community Outreach

*Work undertaken by TNA2.4 from each partner.*

### Technical Outreach to New Communities

*Work undertaken by TNA2.5 from each partner.*

### Community Activity

*Work undertaken by the virtual teams active during the last project quarter. Each VT provides a summary of their activity.*

## Issues and mitigation

*Summarised by the NA2 AM.*

*Provide corrective actions taken for each issue reported and provide updates from unresolved issues from the previous QR.*

### Issue 1

### Issue n

## Plans for the next period

*Plans for the coming quarter. Summarised by the SA2 AM based on input from each partner.*

# Consortium Management

## Summary

*Provided by the PO.*

## Main Achievements

### Project Management

*Provided by the PO.*

### Milestones and Deliverables

*Provided by the PO relating to the deliverables and milestones from the reporting period.*

| Id | Activity No | Deliverable / Milestone title | Nature (\*\*\*) | Lead partner | OriginalDelivery date(\*)[[1]](#footnote-1) | Revised delivery date(\*) | Status  (\*\*) |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

### Consumption of Effort

*Provided by the PO from the timesheet tool. AMs will be asked to provide responses to effort consumption that is significantly above or below plans.*

### Overall Financial Status

*Provided by the PO from the partner cost claims. Partners will be asked to provide responses to financial consumption that is significantly above or below plans.*

## Issues and mitigation

*Provided by the PO.*

### Issue 1

### Issue n

## Plans for the next period

*Provided by the PO.*

# Project Metrics

## Overall metrics

*Each activity should place their contribution to the overall project metrics here*

## Activity metrics

### SA3 – Support for Heavy User Communities

Entered via the metrics portal at <https://metrics.egi.eu/activity_metrics/task-sa3/QR9/>.

## Country metrics

*Provided by the PO*

# ANNEX A1: Dissemination and Use

*Note: Complete the information requested here. It will be provided on a public web page for access and kept separate from the final deliverable submitted to the commission*

*GENERAL GUIDELINES FOR ALL EVENTS REPORTED IN THE FOLLOWING SECTIONS:*

*-please do not provide a list of participants, only give the number of people that attended*

*-for outcome, please list tangible agreements, decisions instead of listing program points or presentations you made. Otherwise put: “-“*

*-include your local events only if there was any EGI-related topic on the agenda*

*-provide an indico URL to your presentation (if available) or to the event itself.*

*If your presentation is not available online, please send the slides to erika.swiderski@egi.eu.*

## Main Project and Activity Meetings

*Provided by each partner in each Activity and assembled by the AM. Regular internal management meetings within the activity do not need to be reported. Training events will be recorded in the training event registry and need not be mentioned here.*

| **Date** | **Location** | **Title** | **Participants** | **Outcome (Short report & Indico URL)** |
| --- | --- | --- | --- | --- |
| 17-21/9/2012 | Prague | EGI Technical Forum | 500 | LS VRC building and management meetings |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## Conferences/Workshops Organised

*Provided by each partner in each Activity and assembled by the AM*

| **Date** | **Location** | **Title** | **Participants** | **Outcome (Short report & Indico URL)** |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

* 1. Other Conferences/Workshops Attended

*Provided by each partner in each Activity and assembled by the AM.*

| **Date** | **Location** | **Title** | **Participants** | **Outcome (Short report & Document Server URL to presentations made)** |
| --- | --- | --- | --- | --- |
| 1-3/8/2012 | Macugnaga, Italy | N4U plenary meeting | 30 | Discussion on EGI infrastructure usage for the N4U community. |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

* 1. Publications

*Provided by each partner in each Activity and assembled by the AM (This should be detailed in the specifics QRs)*

*List all publications as bullet points, detailing: Publication title, author(s), journal title, number/issue, date.*

*Also mention any articles published further to interviews given by members of your activity.*

| **Publication title** | **Journal / Proceedings title** | **DOI code** | **Journal references**  *Volume number*  *Issue*  *Pages from - to* | **Authors**  *Initials* | **Authors**  *Surname* |
| --- | --- | --- | --- | --- | --- |
| Using Adaption Strategies to Improve Grid Operations | EGI Technical Forum 2012 |  | Prague, September 2012 | F.  J.  J.  P. | Křikava  Rojas Balderrama Montagnat Colle |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

# ANNEX A2: Operations Report – Applicable to SA1 Only

*Find it in a separate file.*

# References

|  |  |
| --- | --- |
| R 1 |  |
| R 2 |  |
| R 3 |  |
| R 4 |  |
| R 5 |  |

1. *(\*) Dates are expressed in project month (1 to 48).*

   *(\*\*) Status = Not started – In preparation – Pending internal review – PMB approved*

   *(\*\*\*) Nature =* ***R*** *= Report* ***P*** *= Prototype* ***D*** *= Demonstrator* ***O*** *= Other, Deliverable id: for Milestone attached to a deliverable* [↑](#footnote-ref-1)