EGI-InSPIRE

QUARTERLY REPORT – PQ3

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Abstract

This report describes the activity taking place during the EGI-InSPIRE project during the third quarter (PQ3) running between November 2010 to January 2011.

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I. DELIVERY SLIP

	Name	Partner/Activity	Date
From	Steven Newhouse	EGI.eu	06/03/2011
Reviewed by	**AMB & PMB**	EGI.eu	24/03/2011
Approved by	**AMB & PMB**		24/03/2011

II. DOCUMENT LOG

Issue	Date	Comment	Author/Partner
1	06/03/2011	First draft	Steven Newhouse et al.
2	18/03/2011	Second draft	Steven Newhouse et al.
3	24/03/2011	Final version	Steven Newhouse et al.

III. 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.

IV. 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

V. TERMINOLOGY

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

VI. 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.

VII. EXECUTIVE SUMMARY

PQ3 saw many of the project's activities completing their recruitment activities and settling in to routine activities across external relations, user community support and services, software provisioning and operations.

The structure and taxonomy of the EGI Operations Architecture has now been established to reflect the federated nature of the resource infrastructure providers (the NGIs and EIROs) and their resource centres. A new site Operations Level Agreement was approved and updated, and a roadmap for the extension of the existing EGI OLA has been defined. The Resource Infrastructure Provider MoU template was finalised and the signing of two MoUs with South America (under the auspices of the GISELA project) and with South Africa is progressing well.

Operationally, EGI CSIRT has handled one security incident and issued three security advisories on Linux vulnerabilities, of which one was "critical" two were "high risk". EGI CSIRT also assisted all EGI sites to mitigate the critical vulnerability (CVE-2010-4170) within the 7 days deadline; no site was suspended. The distinction between EGI (supporting international VOs) and non-EGI resources (supporting only national VOs) for monitoring and troubleshooting across the production infrastructure was established, and integrated into EGI's supported core services Eight new NGIs were created in PQ3 in conjunction with the decommissioning of the EGEE South East Europe ROC. Central Grid Oversight activities have been involved in the monitoring of the progress of the new Operational Centres in these NGIs. A newsletter is now released on a monthly basis to ensure that operational information is well and promptly propagated to the ROD teams, and the migration of EGEE operations documentation to a re-designed EGI operations wiki has started.

The development of a core service offering for the support of user communities continues. Organisational support to VOs continues through a suite of technical services for users and communities. Discussions have been progressing with a number of geographically distributed user communities with the expectation that a number of these will become VRCs in the near future. Specific technical support for Heavy User Communities continues while the initial views on future support and sustainability are now being captured. These highlight a critical need to search for additional commonality – both through the goals of the project and via the manpower that it provides – to provide critical mass to these activities.

A transparent, accessible Requirements Tracking system has been implemented into which all members of the EGI community can submit, track and comment on requirements. Requirements can relate to any aspect of the e-Infrastructure form middleware to research applications to support services. User Requirements are investigated, analysed and processed by the EGI User Community Support Team (UCST) in conjunction with support team members from the NGIs and other partners. Operations Requirements about deployed software are similarly investigated and prioritised according to their own needs. These combined requirements are then processed and discussed with the Technology Providers in the framework of the Technology Coordination Board.

The infrastructure to support the upcoming releases from EMI and IGE has been established. From the January 2011 release of the EGI Helpdesk the Support Units structure and the workflows are in place for the proper handling of the entire middleware support chain from 1st line (TPM) to 2nd line through the Deployed Middleware Support Unit (DMSU) to finally 3rd line (involving the Technology Providers). The process of Software Verification and Staged-Rollout are now integrated to provide for a more streamlined execution of the overall verification effort and is now captured in reports that are publicly available. The verification of software from a technology provider is aligned to the particular version of the Quality Criteria (derived from the UMD Roadmap) in effect at the time of software release by the Technology Providers. Reporting of Verification and Staged-Rollout are now

formalised in output and dissemination. The delayed clarification from the technology providers as to how software is released has caused major reconsideration of the overall software release process which may delay the release of software into production.

Planning for the EGI User Forum in Vilnius has advanced with an open call for participation in the technical sessions, workshops, training, demonstrations and posters taking place. The contributions were reviewed by the programme committee and a programme has been established and is avaible online – http://uf2011.egi.eu. EGI dissemination teams attended SC10 New Orleans, 8th e-Infrastructure Concertation event at CERN, and the NGS Innovation Forum, Didcot UK. MoUs with two external technology providers – the EMI and IGE projects – were signed and will be followed up with SLA before their individual releases. Documents describing the current EGI position in terms of the European Research Infrastructure Consortium, the issues relating to any migration from grids to clouds, and the EU2020 and the innovation union were produced.

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Purpose

This document describes the progress of the EGI-InSPIRE project during its third quarter of activity (PQ3) from November 2010 to January 2011.

1.2. 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.

1.3. 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

1.4. Terminology

A complete project glossary is provided in the EGI-InSPIRE glossary:
http://www.egi.eu/results/glossary/.

2. OPERATIONS

2.1. Summary

The EGI Operations Architecture [R1] and the related terminology were discussed and approved during PQ3. A requirements gathering process for collection, discussion and prioritization of requirements about deployed software, was defined and approved[1]. The requirements gathering process was adopted starting in January 2011: the requirements collected in RT during January will be processed and discussed with the Technology Providers in the framework of the TCB during PQ4. The plan of SA1 activities for year 2011 was discussed and approved by the OMB in January 2011[2].

EGI CSIRT has handled one security incident and issued three security advisories on Linux vulnerabilities, of which one was "critical" two were "high risk". EGI CSIRT also assisted all EGI sites to mitigate the critical vulnerability (CVE-2010-4170) within the 7 days deadline; no site was suspended.

The EGI implementation and policies related to the DTEAM and OPS VOs – necessary for monitoring and troubleshooting – have been defined: the DTEAM and OPS VOs will be global, and their support is mandatory in all production Resource Centres to ensure site-level troubleshooting (DTEAM) and to have a running Nagios-based monitoring infrastructure (OPS). Regional monitoring VOs will be only used for the monitoring of non-EGI sites. The DTEAM VOMS service formerly operated at CERN was migrated to one of EGI's core services.

A new site Operations Level Agreement was approved and updated, and a roadmap for the extension of the existing EGI OLA has been defined. The Resource Infrastructure Provider MoU template was finalised and the signing of two MoUs with South America (under the auspices of the GISELA project) and with South Africa is progressing well.

Nagios terminology was disambiguating and a set of related procedures (monitoring of non-production sites, downtime management of central tools, changing of the AVAILABILITY and OPERATIONS probes, changing of an existing probe and/or the integration of a new tests) were discussed, and in some cases were approved[3].

The infrastructure has been progressively migrating from R-GMA to the new APEL client based on ActiveMQ. The R-GMA central infrastructure will be decommissioned at the end of February 2011.

From the January 2011 release of the EGI Helpdesk the Support Units structure and the workflows are in place for the proper handling of the entire middleware support chain from 1st line (TPM) to 2nd line through the Deployed Middleware Support Unit (DMSU) to finally 3rd line (involving the Technology Providers).

A network support workshop has been organized in Amsterdam in January 2011[4].

Eight new NGIs were created in PQ3 in conjunction with the decommissioning of the EGEE South East Europe ROC. Central Grid Oversight activities have been involved in the monitoring of the progress of the new Operational Centre. A newsletter is now released on a monthly basis to ensure that operational information is well and promptly propagated to the ROD teams.

The EGI operations wiki has been re-designed to improve accessibility of information. In addition the migration and update of EGEE documentation has started. In addition to the Nagios-related

[1] OMB meeting, 21 Dec 2010 (https://www.egi.eu/indico/conferenceDisplay.py?confId=152)
[2] OMB meeting, 24 Jan 2011 (https://www.egi.eu/indico/conferenceDisplay.py?confId=153)
[3] https://wiki.egi.eu/wiki/Operational_Procedures
[4] Results are documented in the action plan described at http://go.egi.eu/network-workshop.

procedures mentioned above, several procedures have been drafted including the Critical Security Handling procedure, and the site certification and decommissioning procedures.

Detailed information about SA1 task and NGI activities, plans and issues is available from the respective reports on Document DB [R2].

2.2. Main achievements

2.2.1. Security

A CSIRT disclosure policy has been drafted[5]. In addition, a Critical Security operational procedure has been produced. This is a brief document describing the procedure for dealing with Critical Security Issues where action needs to be taken by a single site or multiple sites. Failure of sites to act on this or respond may lead to site suspension. Approval from the OMB is sought for this procedure [R3]. A more detailed Critical Vulnerability Handling procedure has also been drafted, this is a joint SVG/CSIRT document for handling Software vulnerabilities (whether in Grid middleware or other software) which have been assessed as critical.

EGI SVG has handled 8 vulnerabilities reported through the vulnerability issue handling process, including 2 that require patches in Grid Middleware to resolve.

EGI CSIRT has handled one security incident and issued three security advisories on Linux vulnerabilities, of which one was “critical” two were “high risk”. EGI CSIRT assisted all EGI sites to mitigate the critical vulnerability (CVE-2010-4170) within 7 days deadline; no site was suspended.

2.2.2. Service Deployment

Staged Rollout. During PQ3 a new software release workflow has been defined and integrated within the RT queue “sw-rel”, and tests of this workflow to notify teams of new releases have been performed.

Staged rollout support of gLite 3.2 products is almost complete with one or more teams, the sole exception presently are the MyProxy, dCache and VOMS_Oracle (only deployed at CERN). A resource center (WLCG T1) that will participate in the staged rollout of LFC_Oracle was recently appointed. In a collective response from ARC sites, several Early Adopter teams have volunteered for ARC components. The total number of Early Adopters now amounts to 40 (it includes a Canadian team). The report template is now used for all staged rollout tests, and uploaded into the document server [R4].

Interoperability. MS407[6] was finally published, giving a complete picture of integration of resources into the EGI production environment. A draft procedure was produced together with JRA1 on how to integrate new probes into SAM Nagios. Documentation relating to the existing probes and the related information was collected from the ARC probe developers.

A dedicated meeting was called to clear up the requirements around the features urgently needed for UNICORE integration in GOCDB. Those could be successfully delivered by re-defining existing GOCDB features and thereby mitigating the biggest issue for integration of different resources and middleware stacks defined in PQ2. A new task force dedicated to the integration of UNICORE services has been defined to address GOCDB, accounting and monitoring aspects of UNICORE resources.

[5] https://wiki.egi.eu/wiki/EGI_CSIRT_Information_Disclosure_Policy_(draft)

[6] https://rt.egi.eu/rt/Ticket/Display.html?id=168

A survey was conducted to collect information about the NGIs who are planning to deploy UNICORE and GLOBUS during 2011. According to the results of the survey:

- three countries are planning to integrate UNICORE resources: Germany, Poland and Romania, of which only Germany will integrate sites that are also part of DEISA;
- five countries are planning to integrate GLOBUS resources: Germany, Netherlands, Romania, Spain and United Kingdom (Poland and Czech Republic will integrate GLOBUS if needed by the Resource Centres).

2.2.3. Help desk & Support Teams

EGI Helpdesk. During the last quarter one of the main areas of work for GGUS was the definition and implementation of technology-related workflows, in particular of a new set of support units for 2nd and 3rd line support and the related workflows. The difficulty concerning these workflows is that they need to span various infrastructure and projects, as the 3rd line support for products used in EGI lies with the technology providers releasing the products. To secure a proper inter-project workflow it was decided to restrict assignment of tickets to support units run by the technology providers to the DMSU. Technically this was realized through a separate technology instance of GGUS. As soon as a ticket is assigned to the DMSU it will appear read-only in GGUS. Modification is only possible in the technology helpdesk, access to which is restricted to DMSU and Technology provider support staff.

In parallel the decommissioning of ROCs and creation of NGIs continued, leading to various new NGI support units opened and to others closed (ROC_SW and ROC_North).

Grid Oversight. A newsletter for ROD teams is now published on a monthly basis [R5]. This is now essential to strengthen cooperation and to ensure a flow of information between EGI oversight and the NGI support activities (ROD). This is particularly relevant to NGIs that recently started operations after decommissioning of various EGEE legacy ROCs. The purpose of this newsletter is to inform about recent and upcoming developments related to Grid Oversight and to show the metrics indicating how support activities performed in the past month. Central Grid Oversight (COD) authored three procedures: *New NGI creation process coordination, Operations Centre decommission, COD escalation procedure, and Making a Nagios test an operations test.* COD also contributed to the clarification of the Nagios test terminology: “Operations test” is used for tests raising alarms in the operations dashboard, “Availability test” is used to classify a Nagios probe whose results are considered for availability computation, while “Critical” is now only used to refer to the output of a Nagios probe.

Network Support. A network support task force was created with the participation of various NGIs and the coordination of GARR. The task force produced a proposal around seven identified Use Cases formalized, and discussed during a network support workshop held in Amsterdam on the 24th of January 2011[7]. The proposal was based on a questionnaire distributed to the NGIs[8].

[7] https://www.egi.eu/indico/conferenceTimeTable.py?confId=153#20110124

[8] Results are published on the EGI Operations Wiki at https://wiki.egi.eu/wiki/NST.

2.2.4. Grid Management

Tools for Grid Management. A revision of deployment plans of NGI instances of individual operational tools was performed. Information was collected from MS406, MS703, EGEE-III DNA1.6.2 documents and direct response from NGIs[9].

All operational tools have been assigned addresses in the egi.eu domain. It was agreed that all tools will correct URLs in their code to point to the egi.eu addresses. Decommission of gridops.org domain was scheduled for March 14th 2011 and subsequently the deadline was postponed to end of June 2011 because of top-BDII dependencies. The EMI Technical Director was contacted to gather an exhaustive list of dependencies[10].

One new NGI instance of Operations portal was deployed in Belarus (NGI_BY). At the end of the quarter four NGI instances of the operations portal were deployed: NGI_BY, NGI_CZ, NGI_GRNET and NGI_IBERGRID.

SAM/Nagios deployment of NGI instances continued. Two large ROCs finalised migration to NGI instances:

- Northern Europe: NGI NDGF finalised the validation of its NGI instance on January 25th 2011;
- Southeast Europe (9 NGIs): Romania (NGI_RO), Cyprus (NGI_CYGRID), Georgia (NGI_GE) monitoring was taken over by the Serbian NGI (NGI_AEGIS), Macedonia (NGI_MARGI), Bosnia and Herzegovina (NGI_BA), Montenegro (NGI_ME), Bulgaria (NGI_BG), Armenia (NGI_ARMGRID) and Israel (NGI_IL).

At the end of the quarter the following SAM/Nagios instances were in production[11]:

- 23 NGI instances covering 34 EGI partners
- 3 ROC instances covering 4 EGI partners
- 2 project instances covering 2 EGI partners
- 3 external ROC instances covering the following regions: Canada, IGALC and LA.

The accounting enforcement section of the accounting portal was obsoleted when new APEL tests (APEL_Pub) were integrated into SAM/Nagios.

The OPS VO deployment infrastructure was consolidated. The OMB approved the usage of the global OPS VO (regional VOs will only be used optionally for the local monitoring of non-EGI sites). The VOMS service will continue to be hosted at CERN, whilst OPS membership will be managed by EGI. The OPS policy of having just two members for each NGI was confirmed.

Work on three procedures relevant for operational tools started:

- Procedure for unscheduled downtimes of central operations tools - defines uniform way of announcing of outages of central operations tools[12].
- Procedure for adding new probes to SAM release - defines the steps needed for inclusion of new probes into SAM[13].

[9] Responses were tracked through the following RT ticket: RT #831.

[10] Further details can be found in the RT ticket: https://rt.egi.eu/rt/Ticket/Display.html?id=187.

[11] Detailed list of SAM/Nagios instances can be found on the following page: SAM Instances.

[12] Details can be found in the RT ticket: RT #537.

- Procedure for modification of Availability tests - defines steps needed for inclusion of new tests to group of availability tests used for A/R calculations[14].

The following wiki pages relevant for operational tools were created:

- Operational tools information[15] – the page contains a brief description about each tool, main links to the tools interfaces and to documentation.
- Operational tools deployment plans[16] – the page contains NGI plans regarding the deployment of regionalised versions of operations tools.

Accounting. The central service ran smoothly except for a short outage over the New Year break. The service was restored as soon as staff were back at work but the restoration of the service took longer than expected due to an increased load from sites migrating to glite-APEL. The final decommissioning of the central R-GMA accounting repositories is scheduled at the end of February 2011.

The architecture for regional and central repositories was developed. This is a necessary prerequisite for designing a regional distribution. Changes to the message format and database schema were proposed. Various components were designed and a plan for testing and deployment was defined.

No new releases of the accounting portal during this quarter. The service ran smoothly. The publication of accounting information for the Italian WLCG Tier2 federations on the accounting portal was fixed. VO information is now collected from the Operations Portal through a XML feed (instead of direct ORACLE queries). Logos were updated, and the accounting enforcement page was decommissioned.

Operational Level Agreements. Based on the work of the OLA task force in the previous quarter, a revised site-NGI OLA document was produced, presented to the OMB and finally approved in January 2011. Also a first draft of an NGI-EGI OLA was produced. This document will address three areas: a) the EGI Global Services, b) the NGI Local services and c) the Resource Centre services (based on the site-NGI OLA mentioned above).

Availability. A document has been produced to detail a set of new use cases for the advancement of the EGI OLA framework that require extensions to the availability computation framework and other operational tools. Some of these requirements were a topic of discussion at the face-to-face JRA1 meeting held in Amsterdam in January 2011[17], and were subsequently discussed with CERN in February. EGI League results were circulated for the months: November, December and January.

Core services. The mandatory support of DTEAM by all certified sites was discussed and agreed. Procedures were updated to reflect this policy. The DTEAM VOMS service – formerly hosted by CERN – was fully migrated to a new EGI VOMS servers, and the CERN server was decommissioned on the 26th of January.

Catch-all CA. SEE-GRID CA has setup a new Registration Authority (RA) at the University Chaukh Anta DIOP in Senegal and has started the procedure to setup RAs for SixSq (Partner of StratusLab project) in Switzerland and at the Helwan University in Egypt.

[13] Details can be found in the RT ticket: RT #1051.

[14] Details can be found in the RT ticket: RT #1052.

[15] https://rt.egi.eu/rt/Tools/index.html

[16] https://wiki.egi.eu/wiki/Operations_tools_deployment_plans

[17] https://www.egi.eu/indico/conferenceDisplay.py?confId=244

Operational Documentation. The documentation wiki pages were finalised. A plan for the migration of the GOC wiki pages was defined. Several procedures are in preparation: for site certification procedure, for site decommissioning, for critical vulnerability handling procedure, for the modification of the availability computation profile and for the modification of existing Nagios probes. New best practices for the deployment of core middleware services in load balancing and failover configuration are in preparation. Two new FAQs about the HEPSPEC deployment and the migration from lcg-CE and CREAM were finalised.

2.2.5. Tools

GOCDB

During PQ3 the new GOCDB developer (see Issue 4 below) had to familiarize themselves with the code and with the Oracle PL/SQL language used for the tool. Moreover after the release of the GOCDB4 a number of urgent issues were resolved. This included patching the servers to support secure SSLRenegotiation (required to support new browsers such as Firefox4 and Chrome8). Missing database columns were added. Lots of bugs were fixed, mostly regular expression and validation rules.

GOCDB status and requirements were presented at OTAG F2F[18]. Key requirements were prioritised and different options for the more important requirements were proposed. These were discussed in numerous phone conferences.

Other performed activities include:

- The database was moved to newer, more resilient hardware. The database backup/failover procedure was re-established.
- Corresponding GOCDB documentation has been updated.
- Daily user support and maintenance. GGUS ticket load has been high reflecting the many recent changes. Many instances where permissions related as many were not properly propagated between v3 and v4 and users were missing technical roles.
- ROCs have been decommissioned and new NGIs have been created.
- All development requests recorded in Savannah were consolidated and moved to the EGI RT requirements queue.

SAM

There were three updates in PQ3 quarter, two public and one internal. Update-07 was released at the end of November. Update-08 was marked internal because of the end of year holidays. The next public update containing changes from Update-08 was planned for end of January, but was postponed until the first week of February.

Update-07 major achievements:

- Use of ATP as topology provider for NCG
- First release of new CA distribution probe
- Integration of ARC probes
- Test release of ACE.

Update-08 and Update-09 major achievements:

- MyEGI standalone central instance (egee-NAGIOS-WEB)
- MyEGI web services

[18] https://www.egi.eu/indico/conferenceDisplay.py?confId=245

- Added SAM release to information provider
- Support for robot certificates
- Support for configuration of uncertified sites
- Yaim cleanup.
- Support of MPI services in topology

For more information on these SAM updates, release notes are available at: https://tomtools.cern.ch/confluence/display/SAMDOC/Release+Notes. Integration of ARC probes required additional testing and documentation was provided for Nagios administrators: https://tomtools.cern.ch/confluence/display/SAM/SAM+setup+for+ARC+services. During this quarter first Nagios instance with ARC probes was deployed by NDGF.

Work on helping technology providers to develop probes for new middleware types and to start their integration into the SAM framework continued. After successful integration of ARC probes it was decided to give higher priority to integration of UNICORE and work on Globus integration in parallel. This work is tracked through RT tickets in the JRA1 queue:

https://rt.egi.eu/rt/Ticket/Display.html?id=306

https://rt.egi.eu/rt/Ticket/Display.html?id=390

Work on creating 2nd level of support for SAM continued. GGUS support unit "Nagios" was renamed to "SAM/Nagios". Mailing list sam-support@egi.eu was created for the support unit. In PQ4 volunteers will be joined to the list and take over the handling of tickets. In addition, 3rd level of support unit for the current SAM team will be created in GGUS.

Presentation on Nagios probes and handover to EMI was presented at the EMI All Hands meeting in Prague. EMI accepted handover of Nagios probes relevant for products provided by EMI. At the end of January it was agreed to create an EGI-EMI task force which will kickoff the handover of probes. The responsibility of the EGI side is to identify which probes are needed and provide pointers to specifications and current implementation.

Additional support was provided to NGIs which started deploying VO Nagios instances (IBERGRID and France). Based on the requests new VO configuration profile was added to the Update-09.

Broker and infrastructure

On the broker side work was performed to deploy development message broker network on AUTH for testing and to enable the authorization plugin. Documentation was produced on the current production message broker network authorization needs and it was proposed the usage of authorized only topics (https://tomtools.cern.ch/confluence/display/MIG/Message+Broker+ACLs). On the infrastructure side effort was spent to maintain the development repository and the building system ant to investigate the possibility of integrating the build system with the JIRA used by SAM in order to avoid delays on the new package builds (this was unsuccessful due to the lack of information needed at the JIRA API so this was dropped).

Operations Portal

During PQ3 two new version of Operations portal were released 2.4 (17th of November) and 2.4.1 (16th of December). These developments have been mainly oriented around the migration of the CIC portal to Operations Portal:

1) VO ID CARD: A release candidate has been on-line since October. Interactions with the UCST to validate this release candidate in order to replace officially the section in the CIC portal is

ongoing. The schema of the database has evolved to support the VO life cycle and the evolution of the workflows supported by the portal. The current interfaces permit a new VO to register <https://operations-portal.egi.eu/vo/registration and to subsequently update <https://operations-portal.egi.eu/vo/update the information. An administration module has been developed in order to ease the different validation steps done by UCST. This module permits to manage the VO ID card structure (new fields, regular expression of these fields).

2) BROADCAST TOOL: Development is on-going to integrate this tool into the new Symphony framework. The feature will be in production from February 8th. Features included in this release include:
   - the possibility to add customized contact lists
   - the possibility to edit an old broadcast in order to use it as a template for a new broadcast
   - to search past broadcasts by date, target e-mail, people contacted, subject and author.

1) PROGRAMMATIC INTERFACE: A simple Programmatic Interface is now already available: https://cclavoisier02.in2p3.fr:9000/LavoisierService/view/PI. This interface is a systematic standard access to information handled by the Operations Portal. This version will be improved in the year.
2) REGIONAL PACKAGE :One important upgrade of the package has been made during PQ3. The synchronization process has been reviewed and now the regional portals are the authoritative source of information. The central instance is synchronized by pushing information from the regional instances. A new regional portal has been set-up for NGI_BY.

GGUS

During PQ3 the GGUS Product Team worked on the DMSU workflow and on the first release of the tool containing the instances of the IGE and EMI support units are hidden from normal users and assignment is possible only by DMSU. On the xGUS side four xGUS instances are now online: Germany (DE), Switzerland (CH), Serbia (AEGIS), EUMEDGrid (external). NGI integration is still ongoing:

- 28 NGIs interfaced to GGUS
- 20 as support unit
- 5 with local ticket system
- 3 with xGUS

Accounting Repository

The design of the regional APEL system has necessitated several redesigns:

1. The **Schema**: has been simplified by removing unused or duplicated fields; new fields added for MPI; fields renamed to align with OGF UR; new record primary key defined for integrity, and a new Job Summary Record defined based on the proposed extension.
2. **Message Format** and **Infrastructure**: change to use STOMP on the EGI production messaging infrastructure. This required a new encryption and authorisation model (x.509 based)
3. The **job record database** was changed to reflect changes to the schema and message format.

During PQ3 the design of the above was done and the development started.

Accounting Portal

No releases of the accounting portal during PQ3. We were working on migrating the VO information: from direct Oracle connection to XML feed in the CIC portal, and modifying the accounting scripts to obtain the data correctly. The hiring process at CESGA previously delayed due to administrative matters. Two people have been contracted at CESGA early January and a second contract was made available early February.

Metrics Portal

There were no releases of the metrics portal during PQ3. Sensors were updated to get the information for the Total slots metric using the following JSON feed from GStat production instance.
The development road-map of the Metrics Portal for the next 3 years has been created, http://www.egee.cesga.es/Metrics_roadmap/DMS0.1_EGI_Metrics_Portal_Roadmap_V1.doc .
The document includes the WBS, WBS dictionary, list of deliverables, list of milestones and the schedule. The development is based on the spiral model. Three complete cycles are defined, producing a new release of the metrics portal at the end of each cycle. Inside each cycle there are six steps, one devoted to each data source. After each step a preview release including the additional metrics created will be available in the development version of the metrics portal for internal review.
The hiring process at CESGA was delayed due to administrative matters. Two people have been contracted at CESGA early January and a second contract was made available early February.

2.3. Issues and Mitigation

2.3.1. Issue 1: ACE is under WLCG control

Follow up of an issue opened during PQ1. NGIs and operation community needs new features and improvements of the ACE component (in particular for the OLAs) but ACE is developed by CERN and BARC (the Bhabha Atomic Research Center, in Mumbai) under the WLCG hat.

Mitigation: Interaction with ACE team will be considered as part of a MoU with WLCG, in the meanwhile meetings with developers have been organised in order to find possible solutions to urgent issues. A profiles system has been added to ACE that now is able to customize some of the ACE functionalities.

2.3.2. Issue 2: Hiring process at CESGA

Follow up of an issue opened during PQ1. There is a change in the contracting law at Spain so hiring has been delayed.

Mitigation: Hiring process is now concluded for JRA1, with 3 new people participating to the activity. Two people have been contracted at CESGA early January and a second contract was made available early February. PPT details are being sent to the project office and the issue can be considered closed.

2.3.3. Issue 3: Second level support for SAM

Follow up of an issue opened during PQ2. The DMSU has agreed to have a dedicated support unit, but we need to find volunteers from the community to provide the technical effort, and to understand how this effort is reported in PPT.

Mitigation: DMSU support unit created in GGUS, the new sam-support<at>egi.eu created and attached to the SU. Currently, two volunteers have been identified through private communication

and broadcasted messages, one coming from NGI_IT and one from NGI_UK. NGI_PL has agreed to provide Nagios probes for UNICORE. At least one or two additional people are still needed, possibly from countries supporting ARC and UNICORE.

2.3.4. Issue 4: Main GOCDB developer has left RAL and JRA1

This is a follow up of an issue opened in PQ2 - He left on the 1st November 2010 and some time was needed for the substitute, already hired, to settle in. Following the release of GOCDB4 into widespread production, newly identified bugs/issues are inevitably emerging (some appearing to be of high-impact by affecting the operation of other tools). These bugs have been recorded in Savannah, but their resolution may not be as timely as before given the lack of developer expertise. Addressing these issues has now taken priority before commencing with new functional developments.

Mitigation: the new developers is quickly acquiring experience – Issue will be closed within the next quarter

2.3.5. Issue 5: Authorisation in Messaging Infrastructure

There are slight concerns over the delay in the production messaging infrastructure being able to support the authorization requirements of APEL.

Mitigation: At the EMI All Hands Meeting it was decided it was better to do authorisation on the APEL side based on the digital signing of the message with the client host certificate and then encrypt the message with the central private key so that when it is decrypted it still have the digital signature for auditing purposes.

2.3.6. Issue 6: GGUS Workflow

GGUS has many different clients coming from different projects and communities, i.e. EMI, IGE and WLCG. It is also the most exposed tool to end-user communities so USAG is also dealing with GGUS. All the involved actors are making requirements to GGUS that now has different requirement workflows. The situation is becoming difficult to handle by the product team, in particular in the prioritization part.

Mitigation: OTAG-07 (end of February or beginning of March) will be a joint meeting with representatives from all involved actors. We will try to agree on a common workflow.

2.3.7. Issue 7: Second-level support or all the tools

Issue 3 can apply to any other regionalised tools when the number of deployed instance will increase. No second level support funded by the project.

Mitigation: Same as Issue 3

2.3.8. Issue 8: Main myEGI developer is leaving CERN

The main developer of MyEGI David Horat is leaving CERN at the end of February.

Mitigation: A substitute will be identified.

2.4. Issues from QR2

2.4.1. Issue 1: Effectiveness of Staged Rollout

Solved. The project decided that different software products will undergo a staged rollout process whose duration varies depending on the criticality of the change released and on the type of

component (for some components at least two weeks are needed to identify memory leaks and scalability problems). The specific duration is defined on a case-by-case.

2.4.2. Issue 2: ARC Staged Rollout

Four sites were appointed to participate to the staged rollout of various ARC services.

2.4.3. Issue 3: End of Staged Rollout of gLite 3.1 components

In progress. For several gLite 3.1 products end of support is scheduled during PQ4 and PQ5. Staged rollout of a subset of gLite 3.1 products needs to continue until end of security support, as for a significant fraction of the infrastructure deploys them. A plan will be defined in 2011 to identify new staged rollout sites for the gLite 3.1 components that are widely used.

2.4.4. Issue 4: Messaging for accounting

After discussion at the OMB in January 2011, the final date for decommissioning of R-GMA central accounting services is now scheduled at the end of February 2011. Sites that haven't migrated before this deadline will accumulate usage records locally and will be able to publish those centrally only after migration to the new ActiveMQ APEL client.

2.4.5. Issue 5: Hiring at CESGA

Solved. Staff have been employed since January 2011.

2.4.6. Issue 6: Coordination of network support

Solved. A network support workshop was organized in January 2011 to define the support use cases relevant to EGI.

2.4.7. Issue 7: Best Practices, documentation, procedures

Solved. The wiki operations structure has been improved and the migration and update of EGEE documentation is in progress.

2.4.8. Issue 8: Integration of ARC resources into the monitoring infrastructure

Solved.

2.4.9. Issue 9: Migration to gLite 3.2

Ongoing. The impact of the end-of-support of several gLite 3.1 products will be assessed in PQ4 and PQ5.

2.4.10. Issue 10: End of operations of SEE ROC

Solved. All NGIs belonging to SEE ROC started operations by Jan 2011. In February 2011 SEE ROC started the decommissioning process.

2.4.11. Issue 11: Automating the reporting of Expected Availability Time

Solved for SA1. The activity is part of the SA2 agenda and the extension of GGUS for the automation of this process in in the activity roadmap for year 2011 of GGUS.

2.4.12. Issue 12: Sustainability of nascent NGIs

In progress. In Albania and Moldova the NGIs haven't consolidated their operations and no operational production sites are operated in these countries to date.

2.5. Plans for the next period

2.5.1. Infrastructure

Operational Security. A new version of detailed Critical Vulnerability Handling procedure to match some details of the Critical Security operational procedure. SVG will improve the handling of software vulnerabilities in the EGI RT to improve automation, including automatic reminders. Search criteria will be defined to provide input for SVG issue handling matrices, and better reporting of activities. SVG will also start holding routine monthly SVG phone meetings as planned in the SVG policy document. A security assessment plan of Grid middleware is being drafted by EGI SVG and external partners, the plan will be finalised in next quarter.

A ticketing system for incident response (RTIR) is being setup and will be in operation in next quarter. EGI CSIRT face to face meeting is being planned, the provisional date is 6-7 April 2011.

Both teams will continue handling any security issue reported and ensure the EGI security.

Deployed Software. Effort will be spent to make sure that the number of Resource Centres participating in staged rollout increases in order to have two teams per product released. Two teams are needed to handle cases of temporary unavailability, to increase the probability to catch any problems or issues in different production environments.

Before EMI 1.0 (due April 2010), the full chain of the software release workflow will be tested. It involves different stages: opening of the GGUS ticket by the Technology Provider, the creation of the RT ticket in the "sw-rel" queue for QC Verification, Staged Rollout, and final release to production. The staged rollout will be done in the RT queue "staged-rollout" with a child ticket from the one in the "sw-rel" queue.

Interoperability. Main plans are:

- To continue the works of the UNICORE task force;
- To collect more requirements for the integration into accounting;
- To collaborate with the IGE project to start with the integration of Globus resources.

Tools for Grid Management. In PQ4 the central MyEGI instance which provides access to data from all NGIs will be deployed at CERN. In addition the SAM team will provide a specific version of SAM which will enable easy installation of such central MyEGI instance at the NGI level. This activity will be finalised by the end of February 2011.

GOCDB will be migrated to new hardware on February 2nd 2011. The decommissioning of gridops.org domain is postponed until PQ5. Correct web certificates will be deployed on all central operational tools for the new egi.eu addresses in order to avoid web browser certificate warnings. This activity will be finalised before the decommissioning of gridops.org domain.

The decommissioning of the old CIC portal (cic.egi.eu) will be completed between April and June 2011, the exact schedule depends on the progress of development of the new Operations portal (the main remaining functionalities which need to be migrated to Operations Portal are the broadcast tool and the VO ID cards). Procedures related to operational tools will be finalised and presented for approval at the OMB in PQ4.

A new task force on regionalization will define a set of use cases describing desired interactions between local and global tools; once approved, this information will passed on to JRA1 for implementation. The deployment plans of the NGI tool instances will be reviewed in PQ4.

The Asia Pacific ROC Nagios instance will be finalised[19].

The progress of probe development for monitoring operational tools will be monitored for subsequent deployment and integration into ops-monitor Nagios instance.

Failover configurations of centralized tools will be tracked. The top-priority tool for this activity is GOCDB, which will implement failover in PQ4. The April 2011 release of SAM will contain an option to install a secondary instance. This solution will be optionally deployed depending on the NGI size and resources.

Accounting. The plans are:

- to complete the migration of sites to glite-APEL and close R-GMA central service (end of February 2011).
- to have a new central infrastructure in production at RAL (April 2011), this including a central server ready to receive records from new clients (April 2011).
- Resource Centers to start to migrate to the new version of glite-APEL which will use the production messaging infrastructure (April 2011).
- to review the Accounting Portal requirements.

EGI Helpdesk. During PQ4 the technology helpdesk will implement the workflow needed to manage the release of the UMD: the Technology Providers will then announce releases by submitting a GGUS ticket which will then be routed to the EGI-InSPIRE SA2 activity, and through an interface to the EGI-RT system. Feedback concerning the release will then also be handled through this ticket which will be assigned back to the TP with an "accept" or "reject". Other areas of work in PQ4 include the redesign of the GGUS report generator to make it more flexible, the review of the support units to get rid of unused legacy support units and to bring the documentation up-to-date. The integration of NGIs, which is not yet complete, will also continue.

Grid Oversight. COD will be responsible of integrating new Operations Centers within EGI. The integration of non-production resources in EGI will be investigated to streamline the process. Also, the impact of the deployment of multiple middleware stacks on existing support structures will be assessed. The improvement of availability and reliability statistics will be investigated. The use of the operational dashboard to assess release candidate products will be evaluated.

Network Support. The plans for PQ4 include: the preparation of a questionnaire for the NRENs, the support and maintenance of the HINTs tool and its early adoption by a few French sites, the live perfSONAR CD distribution for end-to-end monitoring and the corresponding GUI, the liaison with the GN3 project, and the refinement of the Use Cases related to network-related scheduled maintenances.

OLA. The EGI OLA framework will be extended to produce the first drafts of the Global Services and Local Services OLA. The possibility to automate the availability follow-up procedure will be investigated. The plan is to use the MyEGI programmatic interface and to extend the Nagios framework through new probes to consume availability statistics and raise alarms in the operations dashboard in case of performance problems.

[19] For details see GGUS #57154.

Core services. The setup of new RAs for SixSq and Helwan University will be finalised. The infrastructure for the monitoring of non-production sites, constituted of dedicated WMS and top-BDII services, will be implemented.

Documentation. Five draft procedures will be finalised. The first set of training guidelines and the dashboard how-to documents will be finalised in preparation for the EGI User Forum. The best practices section will be populated with new material and the migration of valid GOC WIKI information will start.

2.5.2. Tools

GOCDB

During PQ4 effort will be needed to respond to new requirements in agreement with OTAG. Some of them have to be discussed internally in JRA1 and related task forces to verify the impact on other tools (e.g. Regionalization and UNICORE integration TFs). The Product Team will propose/agree implementation plans for key RT tickets and prioritise/start on technical implementations:

- #939 Record Certification Status Histories (who, when, audit table) with PI/GUI updates.
- #979 Extensions to query historic (decommissioned) NGI-to-Site associations.
- #945 New kind of downtime status in GOCDB for EAs for adapted reliability metric calculations.
- #931 Clean roles in GOCDB +COO role, and broadcast from CIC portal.
- #943 Mask sites from different/entire communities (related to regionalisation).

There is still some work to be done Work on selected bug fixes (currently ~20) and to add Support Unit and integration tests where necessary.

SAM

MyEGI:

- central MyEGI instance will be deployed at the beginning of February
- the new version with all views and web services will be deployed at the central instance at 15th of February 2011 and request for feedback will be sent to users
- the final version will be part of release Update-10 scheduled for March.

ATP:

- VO feeds will be extended to support any VO and this will be part of release Update-10
- work on a history feature will start in PQ4 for a release planned for August 2011

MDDB

- work on the new version of MDDB called POEM will continue.

Nagios Config Generator (NCG):

- support for failover SAM instance
- definition of new format for describing metrics which should be part of probe packages
- integration of UNICORE and Globus probes.

Operations Portal

SECURITY DASHBOARD: The integration of the security dashboard with the Operations Portal has been requested and evaluated with the SA1.2 activity and approved by the OTAG. In PQ4 we will:

- Propose an adapted display and workflow to open tickets against sites in the Operations Dashboard
- Define/adapt/implement/ the XML (CSV,...) format of the reports for Nagios and Pakiti and make them available for Dashboard
- Correlate and consolidate Pakiti and Nagios information
- Define and implement the mechanism of passing this information to the Dashboard
- Extend the dashboard with the capability of displaying the information in the site view
- Establish the work-flow of the ticket creation (templates , assignment, RTIR ticket system integration)
- Integrate an additional ACL model: Make sure proper authorization is applied (based on GOC DB and EGI SSO) and make sure that EGI CSIRT/operations people can access all the data collected.

NEW CENTRAL VIEW for the DASHBOARD: The COD View will evolve from a site view to a NGI view with the following features available:

- Sites should be grouped by ROCs/NGIs
- COD will be creating tickets for NGIs/RODs so there should be a box where tickets will be listed
- Notepad per NGI/ROC only for COD

The Ticket creation will follow also these changes:

- New Templates
- COD shifter should have possibility to edit the mail content before it is sent

The decommission of the old CIC Portal still require:

- a Migration of the User tracking in the Operations Portal
- an Integration of external Tools in the Operations Portal: Bazaar and Yaim VO Configurator

The decommissioning will be probably fully completed in PQ5, but the main work will be done in PQ4.

GGUS

During PQ4 there will be the second release of the middleware instance. The Middleware release workflow is foreseen as follows: Technology Provider -> EGI SA2 -> Technology Provider. PQ4 will also see a redesign of the Report Generator allowing for:

- More flexibility
- Output in further processable formats, e.g. xml

Work on continuous integration of NGIs will also be performed to:

- Get the missing NGIs integrated
- Increase number of automatic interfaces (local ticket system or xGUS)

Accounting Repository

A roadmap has been defined to roll out a new infrastructure in PQ4. This will start with a test infrastructure to enable testing of a new glite-APEL in EMI and clients developed by partners in other grids who used to publish by direct database insertion and will now publish Job Summaries using

ActiveMQ. By the end of PQ4 the new infrastructure will be in production and a glite-APEL using the new features described above will have been released by EMI, and hopefully EGI.

Accounting Portal
In PQ4 the Accounting Portal requirements will be reviewed and a detailed work-plan created for the next year.

Metrics Portal
Current version (version 1.1) needs some fixing that will be done during PQ4 development according to the Metrics Portal road-map as described in section 2.2 will start.

3. USER SUPPORT

3.1. Summary

A transparent, accessible Requirements Tracking system has been implemented into which all members of the EGI community can submit, track and comment on requirements. Requirements can relate to any aspect of the e-Infrastructure form middleware to research applications to support services. Requirements are investigated, analysed and processed by the EGI User Community Support Team (UCST) in conjunction with support team members from the NGIs and other partners. NA3 continues to develop the suite of technical services for users and communities. Discussions have been progressing with a number of geographically distributed user communities with the expectation that a number of these will become VRCs in the near future.

SA3 continued to deliver concrete results in supporting the Heavy User Communities (HUCs), including clarification of the added value provided by the project to the activities that are supported. As highlighted in the Sustainability plans described in D6.2 [R6], the project provides the necessary impetus to search for additional commonality – both through the goals of the project and via the manpower that it provides.

3.2. Main achievements

The Requirements Tracking system has approximately 250 requirements spread across various work packages and drawn from various communities. The system has been swiftly adopted by the different divisions of EGI to facilitate the open tracking and processing of requirements tickets through the different areas and beyond. This has been achieved on the basis of developing strong working relationships with a number of research communities many of whom are working towards finalising their individual MoUs. Working relationships with the support teams of the NGIs have become more active as they start to see the benefits if both contributing to and making use of the technical services being developed and provided by the EGI UCST.

Building on the work of previous quarters, SA3 has begun to show tangible results in terms of additional shared solutions. This has been particularly true within the High Energy Physics task where there is additional sharing across the LHC experiments in the key areas of data management and support for analysis tools but which spreads beyond to other HEP experiments as well as different domains, where some of these tools begin to be of interest. The deliverable D6.2 on Sustainability Plans for the Activities of the HUCs [R7] has been important in helping to identify to only areas of potential commonality but also in highlighting the motivation for such work.

The main achievements of NA3 and SA3 will now be described in more detail section by section:

3.2.1. User Community Support Team

The focus of the UCST in PQ3 has been on:

- working with the research communities known to us in order to capture, analyse and investigate their requirements,
- to implement, utilise and review the requirements gathering process
- to formalise our working relationship with the research communities in the form of MoUs
- to reach out to new communities

These interrelated activities have succeeded as follows:

Implement, utilise and review the requirements gathering process

A requirements gathering process was defined and the existing EGI RT issue tracking system was configured to process requirements. The advantage of this technology was that it already existed as an EGI service, it was supported, and that knowledge acquired by both NA3 and the IT department in establishing the system could benefit EGI in other areas. A key requirement of the requirement gathering system itself was transparency across EGI and reaching out to user communities and other DCI projects.

This has been achieved. The system is working and in use and is being utilised by other work packages within EGI-InSPIRE and other DCI projects including EMI and IGE. The system has been comprehensively documented in the User Community Coordination section of the EGI wiki:

- https://wiki.egi.eu/wiki/Requirements_gathering_details

Instructions on how to use the Requirements Gathering System can be found here:

- https://wiki.egi.eu/wiki/Requirements_Tracking

During PQ4 this information will be ported to the User Community web pages and presented in a more user friendly manner.

Formalising our working relationship with the research communities in the form of MoUs

Following successful discussions with the various known communities and internal partners a template for an MoU for establishing and running a VRC was produced. This is now available to all partners. Various of our known contacts are working on tailoring this to their own needs. Chief amongst these is the Worldwide e-Infrastructure for NMR and Structural Biology (WeNMR) community. It is anticipated that this MoU will be signed by the time that this deliverable is submitted. At least three more VRCs are making good progress with developing MoUs for their communities.

Reaching out to new communities

Leads to new communities can come from various sources. These include direct requests, our own enquiries and investigations as well as introductions and suggestions from partners and other contacts. Such leads have led to on-going discussions with the following communities:

- Hydro-meteorology – through the Distributed Research Infrastructure for Hydro-Meteorology Study (DRIHMS) Project
- Digital Cultural Heritage – through the Digital Cultural Heritage Network (DC-NET) project
- Arts and Humanities – through the Arts and Humanities ESFRI project DARIAH
- Linguistics and language research infrastructure – through the ESFRI project CLARIN.
- ESFRI projects; we continue to be in touch with the following ESFRI projects, either directly or indirectly, to ascertain how we can be of assistance: Lifewatch, ELIXIR, CLARIN and DARIAH.

Training-related requirements

A Training Working Group (TWG)[20] has been convened to discuss the needs of the EGI community with respect to training and to capture and evaluate these requirements in order to support the effective development of the training 'Market Place' that will ultimately enable users and the user

[20] https://wiki.egi.eu/wiki/Training_Working_Group

community to respond to the challenges and opportunities arising from the evolution of EGI. The Group is accountable to the UCST under WP3 and its remit is as follows:

- To consider how User Support Teams from the NGIs and other partners can cooperate most effectively from the perspective of the delivery of quality training to as many members of the user community while avoiding duplication and wastage.
- To contribute and discuss training requirements and process these through the UCST Requirements Tracking System.
- To provide feedback to their organisations regarding the processing of training requirements.

3.2.2. Technical Services

Applications Database

The new version of the AppDB (v1.0) has been released following a testing phase with a few NGIs involved. Representatives from Spain, Poland, the Netherlands, Ireland, Norway, and Switzerland have given valuable feedback, and much work has been done to correct bugs and improve functionality. GGUS and the EGI RT system were proven to be useful tools in this process. The release also includes , a beta version of the AppDB API providing read-only access to all parties interested in integrating application and person profiles from the AppDB into community or other types of portals.

Training

The training services consist of the events calendar and the digital library. These are running as a service and being used. However, the UK JRU coordinator, STFC, has reported that the University of Edinburgh, who were both developing and hosting these services have withdrawn from the UK JRU. The termination of development work has taken immediate effect but the services will continue to run until a replacement partner can be found. STFC have taken immediate steps to identify and contract a replacement partner. The service will continue to operate as normal during this time.

VO Services Activities

The VO Services Unit focused activity during PQ3 on the accomplishment of the six month plan defined in November and revised in December. The main activities developed during this period were:

- Elaboration of the VO Services six month plan. Presentation[21] and discussion of the VO Services six month plan on the first EGI User Support Advisory Group meeting held in November 2010[22].
- Abstract submission and reviewing for the EGI User Forum Conference.
- Elaboration of documentation on Wiki pages, namely the VO Services Wiki[23], acting as the main source of information for this activity, and the VO Management Frequently Asked Question Wiki[24], addressing answers to questions from VO Administrators collected from several sources.
- Meetings and discussion with the TSA3.2.1 staff in order to investigate a local deployment of the dashboard framework. The current dashboard framework depends on the ORACLE database which is not available to the VO services group. Local deployment is therefore

[21] https://www.egi.eu/indico/getFile.py/access?contribId=2&resId=0&materialId=slides&confId=223

[22] https://www.egi.eu/indico/conferenceDisplay.py?confId=223

[23] https://wiki.egi.eu/wiki/VO_Services

[24] https://wiki.egi.eu/wiki/VO_Management_FAQS

blocked until the software is ported to open source databases by TSA3.2.1 (not currently planned).

- Analysis, evaluation and discussion of a job monitoring framework built on top of GANGA and DIANE job submission tools, and integrated with mini-dashboard platforms installed at CERN. Production of appropriate documentation on the overall framework to guide the discussions.
- Analysis of the regional NAGIOS framework, and study the possibility to used it as a monitoring tool for the VO infrastructure. Interactions with the regional NAGIOS developers to understand how the topology generation could be changed so that multiple VOs could be monitored under the same box, and how to generate the VO infrastructure topology instead of the NGI infrastructure topology. Deployment of a test box[25] supporting two simultaneous test VO. Documentation of the overall changes and process has started.
- Operation of the VO Services support unit in GGUS handling tickets addressed to that support unit, and linking / involving the appropriate bodies to reach a prompt solution. This specific activity has already originated some requirements to EMI. The decommissioning of obsolete GGUS support units with identical mandates from previous projects has started.

Community Software Repository

During PQ3, some preliminary discussions have been made about the implementation of the EGI Community Software Repository service. The outcome of these discussions was that, the EGI Community Software Repository service should be mainly based on already existed services offered by the EGI and the effort needed for such an implementation should be considered as a combined effort offered by both, the NA3 and the SA2 activity. Following these directions, IASA/GRNET team (the responsible team for the AppDB service and also one of the main developers of the EGI Repository) made a proposal of using the AppDB service (provided by NA3) as the front-end medium for the submission of new releases of the registered applications/tools, the RT instance (provided by SA2) for covering a lightweight release verification process and a separate instance of the EGI Repository (provided by SA2) to hold and manage the community related SW releases. This proposal it is still under evaluation.

3.2.3. NGI User Support Teams

Besides the standard operation of user support processes and the preparation of contributions for the EGI User Forum several NGIs invested work into the improvement of user support services. Particularly:

- The Portuguese NGI defined procedures for weekly support shifts and clarified user enrolment procedures for regional VOs.
- The Turkish NGI prepared manuals in Turkish about usage of OpenMPI or MPICH-2, mainly for HEP users. The MPI support is to be extended to further Turkish sites in the next period.
- The Philippine e-Science Grid (PsciGrid) prepares virtualised cluster environments.
- The German NGI extended the Gatlet portal framework with a GridFTP file upload/download portlet to avoid users' large data transfer via the portal server.
- The Italian NGI extended the CoG Java API with Smart-card based authentication for science gateways and extended the documentation of Italian sites for users and administrators[26].

[25] https://nagios01.ncg.ingrid.pt/nagios

[26] http://wiki.italiangrid.org/twiki/bin/view/Installation/WebHome

- The Hungarian NGI created flow-charts for both the NGI_HU ROD and User Support Teams on how to process requests[27].

The EGI.eu UCST currently investigates how these processes and solutions could be replicated and reused within other NGIs and user communities, contributing to more robust, more reliable and more sustainable support activities within those countries.

3.2.4. Shared Services & Tools

3.2.4.1. Dashboards

At the end of 2010, the two largest LHC VOs – ATLAS and CMS – held reviews of the monitoring infrastructure and tools used for their computing activities. The outcome of both reviews was positive for the Dashboard system and confirmed the important role of Dashboard applications in ATLAS and CMS computing operations. The outcome of these reviews also defined the priorities for Dashboard development in 2011.

During PQ3 the main development effort was focused on job monitoring and Site Status Board applications. The database queries for the generic job monitoring interactive view were completely redesigned, substantially improving the performance of the application. The new version was deployed to validation servers by the end of January. The generic job monitoring historical view was customized following the outcome of the ATLAS monitoring review.

The Dashboard team supported the ATLAS VO in evaluating the Site Status Board application as a monitoring system for distributed computing shifts. The functionality of the Site Status Board application was extended and the user interface was improved. Several Dashboard abstracts were submitted to the EGI User Forum in April 2011.

3.2.4.2. Tools

The work in Ganga Core has focused on improving job merging and resubmission features. The framework now supports configurable auto-resubmission of failed sub-jobs and the possibility of overriding backend parameters when job re-submission is done manually by a user. The automatic merging code base has been fixed to ensure consistent location of merged outputs (which was not the case of Athena-based applications). The framework now supports job submission in the (optional) “keep going” mode, to enhance support for a large number of sub-jobs (hundreds or thousands). The support for job slices has been improved such that a slice may be constructed from an arbitrary list of jobs. Compatibility problems with python 2.6, batch back-ends (Sun Grid Engine) and grid middleware (gLite) have been fixed. The GangaService package, a generalization of ATLAS skimming service implementation, has been added for possible reuse by other VOs. The ATLAS task monitoring dashboard plugins have been developed and put into production. Improvements have been made in the Ganga usage monitoring service, which now reports now the sub-jobs count and allows to better analise the VO use of Ganga. The ramp-up of usage of the Ganga-derived error reporting tool use has been observed in CMS, with 200 reports uploaded in the period of 6 weeks since the CRAB 2_7_6 release. Restructuring of Ganga documentation is in progress and is nearly completed for the development wiki pages.

DIANE has been used successfully in PQ3 for the GEANT-4 regression testing with EGI and OSG grids. Some minor bug fixes and improvements to the mini-Dashboard task monitoring have been implemented and released. The project code repositories have been migrated to SVN.

[27] https://www.mgkk.hu/wiki/index.php?title=Operation_procedures

Progress in the Ganga ATLAS module has focused on completing the features of the PanDA backend and on overall job response time improvements. Support for Athena TAG-based analyses, which allow fast indexed access to the data files, has improved significantly during PQ3. Also, support for Athena production system transformations has been enhanced; this is primarily needed so that HammerCloud can be extended in PQ4 to test PanDA production queues. General response time improvements have been achieved by removing the PanDA requirement for code compilation on the grid, and on the introduction of high-priority "express" queues in PanDA.

During PQ3, HammerCloud version 4 (HCv4) was completed and put into production for the LHCb and CMS experiment instances. HCv4 introduces a system of "experiment applications" which are composed of modules to override the HammerCloud functionality during test submission, running, and presentation. The CMS and LHCb applications are now considered complete, and the experiment computing operations teams are in the process of integrating the services into their daily grid operations. The ATLAS HammerCloud instance has been maintained at version 3 due to the increased user activity during the LHC winter shutdown; a version for instance has been deployed, is under test, and will be put into production in PQ4. Lastly, the ATLAS application is undergoing development to support testing of PanDA production queues in order to validate Athena releases and PanDA pilot software for data production and data reprocessing activities.

3.2.4.3. Services

Grid Relational Catalog (GRelC)

The design of the DashboardDB (started at the end of PQ2) and the implementation of some internal modules (Java classes) have been the main activities carried out in the PQ3. It is worth mentioning that the design of the internal modules of the DashboardDB web application performed during PQ3 has taken into account the Web2.0 paradigm. Mashup, Google Maps, permalinks, comments, are just some of the features that have been considered during the design phase.

The DashboardDB design (PQ3 activity) implements the Model-View-Controller (MVC) design pattern. This way a clear separation of concerns allowing managing the complexity of the web application is strongly provided.

A monitoring view, as part of the DashboardDB application, will give the users the proper understanding about the underlying grid-database service infrastructure. Such a view will be useful to monitor and check the network of GRelC services deployed within the EGI context. The main modules that have been designed and developed during PQ3 are related both to the monitoring part and to the grid-database registry. In particular, some packages that have been designed and implemented during this period include:

- core package (abstract classes, common modules, utility routines)
- charts package (pie, bar, etc.)
- beans package (for business objects like GRelC services or grid-databases);
- stream package (Java classes producing data streams to export data in CSV format).

For each of these modules, several unit tests have been carried out (in PQ3) to remove bugs and enhance the robustness and stability of the code.

An abstract about the GRelC activity was submitted and accepted for oral presentation at the EGI User Forum in April 2011.

Additionally, during PQ3 the "SA3 - Questionnaire – A census about database resources, related needs and future plan" took place. The questionnaire aims at providing an update in the context of the EGI-InSPIRE project of the list of databases (relational, XML-based, etc.):

- already in place but that need to be ported in grid;
- already ported in grid and so accessible;
- not yet deployed;
- available from external sources via FTP, HTTP and that would need a grid-enabled instance and interface.

The questionnaire was sent to the HUC at the end of the PQ3 (January 16, 2011) and preliminary feedback is expected to be collected during PQ4. As a follow up of this census, a preliminary static list about the available database resources in the context of EGI will be inferred starting from PQ4. The list will help to define use cases, to understand needs and to collect requirements from the HUC.

3.2.4.4. Workflow & Schedulers

KEPLER & GridWay

Possible fusion workflow scenarios, indicated in MS602 [R8], have been analysed and designed in detail. The work needed for running each of these workflows has been evaluated in detail. Basic services needed for the execution of workflows have been deployed and setup. This includes the new version of the Serpens module for Kepler, and the Roaming Access Server (RAS) web services.

In terms of workflows one of the first tasks was to build and exploit scientifically linear workflows. These workflows do not require the use of different infrastructures to be executed. An example as well as a template of such workflow has been prepared and tested. More workflows from those proposed in the list in MS602 will be built and exploited in the next months, starting from the VMEC + DKES case. The scientists involved in the different applications are currently working on the modules that will be able to convert the output of an application into the input of another.

For some of the proposed workflows, a connection between Kepler and GridWay will be required. This connection is still pending and the first actions have been taken in order to proceed with the setup of a test environment.

During the deployment and exploitation of the first test we have also found out and investigated an error in L&B API. We have found that some mandatory fields of JobStatus returned by LB servers are wrong. The bug was in incorrect mapping of missing values and incorrect WSDL specification stating that some fields are mandatory whereas they were optional. The bug appeared in production servers. We submitted a ticket to GGUS (https://gus.fzk.de/ws/ticket_info.php?ticket=65997), which was escalated to gLite developers level (https://savannah.cern.ch/bugs/index.php?77002). The bug was then confirmed and fixed, being scheduled for release in L&B version 3 or L&B version 2.2 (the latter is not yet decided). However in the meantime we had to make work around in order to be able to use these L&B's using API. The discovery and identification of this bug took some time, as well as fixing it.

As part of the possible exploitation of the currently developed workflow chemistry community have been contacted, and common meeting took place, in order to start possible collaboration in terms of usage Kepler for some of their applications. Also for forth coming EGI User Forum Kepler workshop/ hands-on tutorial has been proposed and submitted. This tutorial includes the basic Kepler usage, more advanced examples and debugging as well as the hands on showing usage of Grid middleware.

3.2.4.5. MPI

In November 2010 the MPI subtask members produced input for the EGI paper. CSIC created new MPI-Start documentation for users and sites. A supplementary trouble-shooting guide accompanies

this. See: http://grid.ifca.es/wiki/Middleware/MpiStart/. In addition, code and other developer information of MPI-Start is also hosted at IFCA now: http://devel.ifca.es/mpi-start.

An abstract entitled “MPI hands-on training” was submitted to the EGI-UF 2011. The abstract was subsequently accepted. The training event is two hours in duration and will be led by Enol Fernández del Castillo (CSIC). TCD has joined the EGI Training Working Group and the EGI-UF 2011 Programme Committee.

3.2.5. Domain Specific Support

3.2.5.1. High Energy Physics

In terms of support for High Energy Physics, PQ3 covered the end of the initial prolonged proton-proton run of the LHC, the inaugural heavy ion run and the first end-of-year shutdown during the LHC data-taking era. The WLCG service continued to operate smoothly during this period, reaching new records in terms of data rates (multi-GB/s), number of jobs (1M jobs/day) and users (1000 unique analysis users for ATLAS per month, some 500 for CMS and somewhat lower for ALICE and LHCb) and in total data volume collected (15PB excluding replicas).

As in previous quarters, the Key Performance Indicators used by WLCG of GGUS statistics, Site Usability plots and Service Incident Reports (SIRs) / Risk Assessments, continued to provide a realistic overview of the service during a given period and were used in the regular reports to the WLCG Management Board (MB). The number of GGUS tickets remained rather constant, dominated by TEAM tickets and with a small fraction of ALARM tickets to which the response continued to be within the agreed targets. The Site Usability plots showed a marked improvement since their introduction in the WLCG Service Reports at the time of STEP’09, although the number of “false negatives” due to failures of the tests themselves still needs to be improved.

In conclusion, the last quarter of 2010 was arguably the most demanding to date on WLCG services but nonetheless showed tangible improvements with respect to previous quarters. The challenge for 2011 will be to sustain this level of service with the increased load that is expected from this year’s LHC data taking.

3.2.5.1.2. ATLAS Distributed Data Management

During PQ3 the activity focused on the consolidation of recent developments in the DDM Site Services and the extension of the FTS performance monitoring to the new “Sonar monitoring table”. The Sonar is a recent tool able to provide transfer measurements on the full ATLAS site-to-site mesh.

Following developments in PQ2, the consolidation and the improvement has been accomplished on the recent developments in DDM Site Services, agent responsible for the ATLAS data placement by means of the underlying WLCG middleware. Two new deployments of the new software were scheduled opportunely during general ATLAS Distributed Computing (ADC) downtimes, necessary to update the central Oracle databases. These deployments fix minor bugs, reduce the load on tape sources and allow the configuration of the FTS job size depending on the destination site.

The support work on DDM Site Services included other operational tasks, such as restoring the services after the power cut at CERN on 18 December 2010. It revealed that DDM Site Services only restarted after a “soft” reboot of the machines. The init.d script was consequently updated to also handle the “hard” reboot of the machines after such a situation. Furthermore, after the power cut, the internal DDM Site Services databases, used as temporary cache of state information, was corrupted and thus needed to be urgently recreated.

The FTS performance monitoring in DDM Site Services (http://bourricot.cern.ch/dq2/ftsmon/) is being extended with the new “Sonar monitoring table”, able to show the full matrix of site to site transfer statistics generated by the “Sonar”. The "Sonar table", based on jquery and the Datatables plugin, allows filtering and sorting the information, easing the link commissioning in ATLAS. It will be used by the ADC Manager On Duty (AMOD) as well as by cloud support squads to follow up the status of all the links with the final goal of reducing some of the current boundaries and limitations of the ATLAS Computing Model. The same information is available to the Dashboard's Site Status Board, responsible of the study of the correlation between the transfer statistics information with other parameters, such as site downtimes.

During PQ3 some effort has also been dedicated to the service level monitoring of the different DDM subcomponents. The initial work has consisted in evaluating the current message queuing framework provided by CERN IT as a solution to ease communication between the monitoring clients, running on the different DDM machines, and a central service responsible for the publishing of the service availability to CERN IT’s Service Level Status framework. The new monitoring is running on the DDM test-bed machines and will be applied to production machines as well as to a wider variety of DDM subcomponents in PQ4.

It is worth to mention the active discussions between different experiments started during PQ3 in order to share ideas, concepts and wherever possible implementations. This initial exchange of information have resulted in the participation of several EGI-InSPIRE WP6 TSA3.3 members of the CERN IT-ES-VOS section in the CMS Storage and Data Access Evolution Workshop (Bari 24-26 January 2010) where the short term implementation of an automated site cleaning tool (based on the one existing in ATLAS DDM) has been agreed.

3.2.5.1.3. LHCb Data management system

The DIRAC system was developed in order to provide a complete solution for using the distributed computing resources of the LHCb experiment at CERN. DIRAC provides a complete framework for data production and analysis, including workload management, data management, monitoring and accounting. One of its most important components is the Data Management System (DMS), whose support in EGI-InSPIRE project started in October 2010.

The activity of support for DIRAC DMS during PQ3 aimed first of all at understanding the general structure of the framework, studying in detail all the services and agents which contribute to its overall functionality. The lack of overlap with the previous main developer (who left in October) and the absence of documentation made this task more complicated and time expensive than expected. However, after the initial period dedicated to acquire the necessary knowledge, significant progress has been done during these months:

- Documentation for new developers has been produced. An agreement with the more experienced developers on a standard procedure was necessary to set a development environment, which had never been clearly defined before. This is the first guide for new DIRAC developers and will be certainly helpful for the next members who will join the DIRAC developers’ community.
- Enhancement of the functionality of the on-line database monitoring to visualize the status of the data while they are being transferred from the on-line storage system to the mass storage system at CERN. The service has been modified in order to display some more useful parameters, like the magnetic field state and beam luminosity. Integration with the web portal of the monitoring is ongoing.

- Development of a new DIRAC agent to allow consistency checks between the content of grid storage elements and the information registered in the central file catalogue. Since the grid storage elements and the file catalogue are completely decoupled, inconsistencies often arise, which have to be periodically fixed. So far this has been a manual, and thus error prone and time expensive, procedure. The new agent aims at making the full procedure totally automatic. A prototype has been developed and is deployed in the development system. It is currently under testing and will probably move to certification during the next month.

3.2.5.1.4. Persistency framework

Two members of the Persistency Framework team at CERN are on EGI-InSPIRE funding, a PhD student and a fellow. During PQ3, they have been working on R&D about performance optimizations for conditions database access via CORAL/COOL and on functional improvements for the CORAL software, respectively.

The R&D on performance optimizations for conditions database access concentrated on solid state disks (SSDs) and related topics. After a thorough literature review, a test plan started to be prepared. SSDs are attractive with respect to hard disk drives (HDDs) because they are faster, smaller, quieter and consume much less energy. Although the cost of SSDs is falling, it is still much higher than that of HDDs, so it is important to identify where the use of SSDs would bring the most relevant performance benefit for conditions database access. Three potential use cases have been identified, and will be separately tested: using SSDs to store the database tables containing conditions metadata; using SSDs as an additional layer for the internal database cache; using SSDs for undo logs or redo logs to speed up write access. A detailed plan for the tests is being designed, in view of the availability of the relevant hardware in March or April 2011.

The work on CORAL software functionalities focused again on the CORAL handling of network and database glitches. Following the systematic studies and tests performed during the previous quarter, a first workaround for the most important bug has been implemented and included in the releases recently prepared for ATLAS and LHCb. The detailed workflow in the relevant CORAL components has been charted using a new debugging tool prepared to this effect: this has made it possible to understand the potential weaknesses and bugs in the present implementation of the communication between the CORAL client and the database server. Two more steps are foreseen to solve this issue. In a first phase, which is now essentially complete, the code has been reorganized to implement a strict check of the validity of the connection and session handles before each database interaction, in order to prevent any possible Oracle error. When this code is fully validated and released, in the next phase a new strategy will be tried out, reacting to errors rather than trying to prevent them.

The analysis of the network glitch issue also pointed out the need to improve the documentation of the CORAL software internal implementation, to ease future maintenance and functionality enhancements. Several free and commercial tools for reverse engineering have been evaluated. A possible solution could be the use of Microsoft Visio integrated in Microsoft Visual Studio 2008 or 2010. This would require a particular Windows operating system setup, which is still being analysed.

3.2.5.1.5. CMS

During PQ3, two releases of CRAB 2 were produced. The main fixes have been applied to the data discovery and the splitting part of the workflow. Known problems with user data stage out have been fixed in the new release that is in preparation during the last days of PQ3 (under testing at the time of writing). Several tags of CRAB 3 have been prepared and related testing cycles have been

done in collaboration with the CMS Integration team. Mainly during PQ3 the Credential API have been fully developed and integrated within the framework as well as the BossAir API, responsible for the middleware and scheduler interface. BossAir implements python multiprocesses in order to optimize the performances and related plugins for the actual scheduler specific implementation (gLite, LSF, condor...) have been prepared. BossAir is now fully integrated and validated. A new strategy for the user output data stage out has been also proposed and a work plan has been presented to CMS. The first prototype is now work in progress.

3.2.5.2. Life Science

To coordinate their efforts and sustain their activity, members from the Life Science community self-organized into the project-independent "Life Sciences Grid Community" (LSGC) over the first period of the EGI-InsPIRE project. The LSGC is currently representing three Virtual Organizations (biomed, lsgrid, and vlemed). It receives support from six NGIs (Dutch, French, German, Italian, Spanish and Swiss NGIs), the HealthGrid association[28]. During PQ1 and PQ2, the LSGC described and agreed on internal governance rules[29]. It developed internal communication channels (monthly phone conference, mailing list, wiki[30]). The LSGC receives support from the NGIs involved and the HealthGrid association in term of manpower and grid resources. Part of this manpower is used to operate the Technical Team of members from the biomed VO[31] to support the community. During this quarter, the LSGC contributed to the identification and publication of stringent community requirements in collaboration with NA3's UCB. User application porting support is now also provided through the Grid Application Support Service of the University of Westminster and the Grid Application Support Center at MTA SZTAKI.

The Technical Team is addressing daily problems reported by the community, usually through the GGUS front-line support system. The support is performed using duty shifts. The technical team also anticipates problems by actively probing the most critical services for the proper VO operation through a Nagios server[32] dedicated to VO-level infrastructure monitoring. Procedures have been defined to react to regular maintenance events such as SE decommissioning operations. Work is also on going to replicate the critical biomed VOMS server and thus avoid that it becomes a single point of failure.

The LSGC is also currently designing a user management database, which will facilitate liaising with hundreds of users registered in the affiliated Virtual Organizations. This user database will interface to Virtual Organization Membership Service (VOMS) servers as well as the EGI Applications Database, to avoid replicating existing information. It will complement the VOMS and application database with extra-information on the users and their affiliations. The development roadmap of this user database was introduced in MS602 [R9]. The following steps have been completed in this quarter:

- Design of the LSGC user database
- Analysis of the "VO admin tool" capability
- Implementation of the file access control to the VO LFC (notion of user home directory)

The implementation of the database has just started.

[28] HealthGrid association, http://www.healthgrid.org

[29] LGC purpose and rules document, https://dav.healthgrid.org/lsvrc/LSVRC_proposition_09-08-2010-final.pdf

[30] LSGC wiki. http://wiki.healthgrid.org/LSVRC:Index

[31] Biomed technical team, http://wiki.healthgrid.org/Biomed-Shifts:Index

[32] LSGC nagios monitoring server, https://grid04.lal.in2p3.fr/nagios/

The LSGC will also be active in supporting the Life Science community through specific VOs, supporting in the negotiations and OLAs with EGI, the NGIs and the grid sites, using the already well-established communication channels provided by the partnering organizations involved in the Life Science VRC (LSGC). This support will materialize in the establishment of Memoranda of Understanding (MoUs) with the grid sites and the NGIs but also with the development and maintenance of specific tools and services to support the community. Several partners of the LSGC are also partners in the SA3 work package of EGI-InSPIRE.

3.2.5.3. Astronomy and Astrophysics

VisIVO is a suite of software tools aimed at creating 3D customized views of many type of wide used data sets. To complete its porting to gLite and its use in EGI a software layer has been designed during PQ3 and is now under development to allow VisIVO to be used directly from an applications using the internal arrays without having to use intermediate files. Once the VisIVO Library has been deployed the next stage will be MPI enabling the server.

Collaboration with HPC resources is being explored by trying to identify significant A&A use-cases and test-beds and in planning a coordinated activity in the context of EGI.eu and of NGIs. As cosmological simulations represent one of the most important classes of A&A applications requiring HPC resources, we identified the following applications: FLY (INAF-OACT Cosmological code) and Gadget + Flash, as the most common cosmological codes in Astrophysics that could benefit from these resources. We are now in the process of collecting requirements from these applications following this schema: a) preparation of the initial dataset; its size is of several hundreds of Gigabytes; b) data production phase, generally performed through parallel code whose execution involves hundreds of CPU/cores. We are now starting the design of some preliminary tests to run in gLite.

After the freeze of the development of GDSE (a tool to integrate Databases in Grid proposed by A&A) due to the lack of the necessary resources, the A&A community is now evaluating tools and services currently in place to integrate Grid infrastructures and databases to use them in the context of A&A applications. Tools and services currently under evaluation include AMGA, GRelC, Spitfire, OGSA-DAI and others. A report will be shortly issued concerning all evaluated tools and services and the outcome of this evaluation process (those selected to be used for A&A applications). The report will also clarify the selection criteria.

3.2.5.4. Earth Sciences

In PQ3 we analysed aspects of job submission to EGI using OGC services for ES users. One of the main difficulties are the security mechanisms. This work was ongoing in PQ3 and results in an activity with the French NGI and climate community to interface between Earth System Grid (ESG) and the EGI infrastructure. We started to prepare a development roadmap and the implementation will start in PQ4.

In case of the GENESI-DR interface, EGI-ES users now have access to theoretically 5 million data products in the GENESI-DR infrastructure. Problem is still that the required registration and access is not automatic yet, but this is work for the GENESI project itself. We tested it with two categories of files.

In PQ3 the support of the ES catch all VO was ongoing.

3.3. Issues and Mitigation

3.3.1. Issue 1: End of support for LCG-CEs

When and how LCG-CEs will be deprecated and replaced with CREAM CEs in the infrastructure is still not known and concerns some NGIs and user communities. The UCST with the Operations team is preparing an information page in the EGI Wiki to summarise the situation concerning the transition from LCG-CE to CREAM CE and to help communities to prepare for the transition process.

3.3.2. Issue 2: Utilisation of technical services

There is a visible drop in the utilisation of the training event registry and training material repository since the end of the EGEE project. We have to understand what is the reason of this drop and what impact it can have on the user communities. The UCST will interview the NGIs to find out why they are using this central service less intensively and review the training services and processes if required.

3.3.3. Issue 3: Replacement of UEDIN as training services provider

UEDIN has withdrawn from the UK JRU and the work will be reallocated within the JRU. It is expected that the existing training services will continue to be operated without interruption, but delay in the delivery of new features is certain.

3.3.4. Issue 4: Dependence of experiment Dashboard on commercial software

The Experiment Dashboard that should be one of the services offered by the VO services team is dependent on commercial Oracle database and this prohibits the usage in the support of emerging communities. Alternative services have been reviewed and potential replacements have been identified by the VO services team. This caused delay in the setup of services for VOs.

3.3.5. Issue 5: Lack of Torque/Maui support for MPI

The lack of support for the prevalent batch system “Torque/Maui” in EGI increases the chances of delays to the timely production of updated MPI related RPMs.

3.3.6. Issue 6: Problems with gLite-CLUSTER node type

TCD intended to deploy a gLite based sub-clusters using the new gLite-CLUSTER node type. These clusters will include a GPU based cluster, and a PS3 Cell/broadband based processor cluster. Several problems were reported with this node-type, so this planned deployment was postponed.

3.3.7. Issue 7: Insufficient notifications about service downtimes

Scheduled service downtimes are sometimes not properly reflected in the BDII, causing undue errors happening because the non-available resources are tentatively being used. Better updates of the BDDII are expected in the future.

3.3.8. Issue 8: Critical Services for LS

The VOMS server and the LFC remain VO-wide critical services subject to single point of failures. Technical discussions are continuing to identify how to deploy backup servers. A backup VOMS server will be hosted by the HealthGrid association.

3.4. Plans for the next period

3.4.1. Life Sciences

The implementation of the LSGC user database tooling, its web front-end and the link with the applications database will continue in PQ4. A first release is scheduled in PQ5.

Work is ongoing to replicate the critical biomed VOMS server and thus avoid that it becomes a single point of failure. A deployment of the replicated service is expected in PQ4.

Concerning the GRelC service task, the implementation of the DashboardDB application will continue in PQ4. A preliminary version (v0.1) with the home page will be available at the end of PQ4 just to highlight the main goal of the DashboardDB and to start collecting feedback. Some internal modules, such as the project and registry management will be also developed during PQ4. A preliminary static list about the available database resources in the context of EGI will be inferred in PQ4, as a follow up of the SA3 Questionnaire sent to the HUC during PQ3. The list will help to define use cases, understand needs and collect requirements from the HUC.

3.4.2. UCST

The team will focus on working with more communities (VRCs) to capture and analyse requirements. Workshops and other events will be used to promote and investigate key issues. Website will be redesigned for usability.

3.4.3. NGI Support Teams

NGIs continue with the extension and further development of user support tools and services, for example extending the helpdesk and providing batch data processing capabilities for HEP users in Turkey; further developing the Gatlet framework in Germany; reviewing and extending existing user and system admin documentations in Slovakia.

3.4.4. Technical Services

The applications data base will offer better integration with other services and appear within VRC science gateways and NGI portals. The training services will be repackaged as a training “market place” complete with API to enable integration with VRC science gateways and NGI portals. The activity foreseen for the VO Services are:

- Finalise the documentation of the VO NAGIOS implementation so that it can be offered to VOs that are willing to monitor themselves their own infrastructure.
- Start documenting how VOs could develop, deploy and use their own specific probes.
- Start documenting job submission frameworks that VOs could offer to their users so that they can have a faster learning curve in executing the VO application on the VO infrastructure.
- Start the analysis for the conceptualisation of a web platform that could aggregate and give a consolidated view of all the tools / services / documentation that the VO administrator must access / consult on his daily work.

- Continue normal operation as the answering questions on the VO Services GGUS support unit and completing / adding documentation.

3.4.5. MPI

The MPI activity will concentrate on improved user documentation; outreach and dissemination at the EGI User Forum; user community, NGI and site engagement, and feedback and requirements gathering; continued work on the MPI cookbook and MPI workbenches for Computational Chemistry and Fusion Communities.

4. SOFTWARE PROVISIONG

4.1. Summary

PQ3 has seen an increase in the cohesion between the tasks grouped in the Software Provisioning activity. The publication of the UMD Roadmap is closely correlated with the publication of versioned Quality Criteria valid for a defined period of time. The processes of Software Verification and Staged-Rollout have been aligned much better to provide for a more streamlined execution of the overall verification effort. The Verification of delivered software now closely corresponds to and aligns with the particular version of the Quality Criteria in effect at the time of software publication by the Technology Providers. Reporting of Verification and Staged-Rollout are now formalised in output and dissemination: All activity is captured in reports and executive summaries where applicable, and all documents are made publicly available to any interested party through an automated process.

However, new information provided by a Technology Provider regarding its respective release strategy caused major reconsideration of the overall software release process in this activity, which may endanger the timely release and production rollout of the EGI Software Repository to the EGI community.

4.2. Main Achievements

4.2.1. Quality Criteria

The Quality Criteria task has focused on enhancing the quality and completeness of the Quality Criteria during PQ3. In order to provide Technology Providers and the verification process with coherent criteria a roadmap for the updates and releases of Quality Criteria documents was established. Fixed date releases every 6 months, in coordination with the UMD Roadmap releases, of the documents will introduce stable criteria for the verification process. The lifecycle of the Quality Criteria documents specifies three possible states: *final* for documents that are currently used for verification*; draft* for Quality Criteria documents that are in preparation and not yet used for verification; and *deprecated* for those criteria that are no longer used for verification or updated. Drafts of Quality Criteria will be made available as soon as new criteria is developed in order to allow Technology Providers plan their quality efforts for each release. A template for the definition of each criterion was created during this quarter. This template provides a uniform definition of criteria and precise instructions for the verification activity.

The first complete release of the Quality Criteria is currently under development and it release date is the first week of February [R10]. This first release will cover all the capabilities in UMD Roadmap that are to be released by the main Technology Providers in the coming months. Quality Criteria for capabilities that are still waiting for EGI Community input in order to be clearly defined are created using reference implementations if available. In the case of capabilities with no reference implementations, the Quality Criteria task has started to fetch requirements from the expert communities in each capability area.

4.2.2. Criteria Verification

The QC verification template has been created and is available at EGI document server (http://go.egi.eu/318). The verification template is the starting point to deploy verification reports to be completed by the verification team to ensure software quality. This document also includes the Executive Summary of the QC verification.

The second verification process was executed for SAMu7 testing probe. The new update has passed verification tests without problems. This process was useful to review and improve the "New Software Release Workflow" (NSRW) implementation in next releases.

Carlos Fernández has presented "QC Verification: Workflow and TP involvement" at Amsterdam SA2 F2F meeting. This presentation has generated discussion between SA2 members in order to establish a future plan about how to improve TPs and SA2 feedback. A new member from CESGA, Alvaro Simon has already started working in SA2.2 and SA2.3 tasks.

4.2.3. Deployed Middleware Support Unit

For PQ3 there has been a steady increase in the number of tickets handled by DMSU. There have also been a number of meetings with the GGUS people on how to support the DMSU workflow. Overall the DMSU works according to expected operational levels. Processes are established and followed.

4.2.4. Support Infrastructure

During PQ3 the 2nd iteration of the NSRW was implemented on RT (https://rt.egi.eu) and Repository (http://repository.egi.eu). The NSRW is now fully implemented according to MS504 – "EGI Software Repository Architecture and Plans" [R11]. SA2 performed extensive testing of the new implementation in order to eliminate possible bugs and omissions. The current implementation of NSRW is now fully operational for internal Technology Providers (TPs). Work is still required however to implement its integration with GGUS in order to enable access to external TPs. Collaboration with NA3 continued to capture their requirements for the EGI Community Repository. As this involved almost all EGI activities, we continue our discussions to capture the requirements for the community software repository with NA3, SA1, SA3 and JRA1. CESNET implemented also a new queue in RT that will be used to capture the requirements for new functionalities in middleware and operational tools.

In addition the following actions were performed:

- Released the European Grid Infrastructure EGI Trust Anchor release 1.37-1.
- Released the SAM monitoring tools update 6
- Maintenance of EGI web space www.egi.eu and related content management system
- Maintenance of EGI Single Sign On (SSO) system
- Maintenance of EGI wiki wiki.egi.eu
- Maintenance of the EGI Document server doc.egi.eu
- Maintenance and customization of EGI Request Tracker rt.egi.eu
- Maintenance of EGI Integrated Digital Conference system (Indico)

The requirements queue and related developments in the RT provides a tool to store and manage the requirements from the user communities and to manage the life cycle of these requirements, e.g. process them, allocate for projects or activities who can implement them and then monitor their implementation. To provide such a tool we have implemented a RT queue with a number of improvements and non-standard per queue features. These include especially:

- New ticket states applied just for the tickets in the requirements queue
- A number of custom fields with hierarchical dependencies and non-standard processing of these custom fields based on the ticket life-cycle
- A number of dashboards to provide different views of the requirements
- Custom notifications for different transactions on the tickets in the requirements queue

- Elaborate access rights management for the above mentioned features and different SSO groups

4.3. Issues and Mitigation

4.3.1. Issue 1: Staffing

The recruitment process successfully concluded with the necessary assignments of new employees to the tasks TSA2.2 and TSA2.3, which are now equipped to operate with the designated manpower.

4.3.2. Issue 2: Number of tickets being allocated to the DMSU

After EGI Tech meeting in Amsterdam in October, it became clearer for developers and operators on how to handle middleware issues. There is probably still communication regarding middleware issues, which do not go through DMSU, but the situation is definitely improving and satisfactory towards normal operational levels for DMSU. For PQ3, in total 144 tickets were processed by DMSU.

4.3.3. Issue 3: Not uniform criteria definition

The Quality Criteria task has introduced a mandatory template for the definition of criteria. This template provides a uniform definition for all criteria produced by the TSA2.2 task and includes precise instructions for the verification activity. All previously defined criteria were reviewed and updated to meet the template requirements hence this issue is considered resolved.

4.3.4. Issue 4: Lack of versioning for Quality Criteria

The roadmap and lifecycle for Quality Criteria definition process was established during PQ3, thus providing Technology Providers with a clear and coherent schedule and versioning of the Quality Criteria. The roadmap introduces fixed date releases every 6 months that will facilitate clear communication and sustainable quality efforts from the Technology Providers. Hence this issue is resolved.

4.3.5. Issue 5: UMD Capabilities not yet defined

For all UMD Capabilities for which unclear or unstable interfaces but a reference implementation is available, the Quality Criteria task has defined criteria using the reference implementation as basis. For Capabilities where a reference implementation is not still available, a requirement collection phase was started in collaboration with the expert communities in those capabilities.

4.3.6. Issue 6: Lack of information about the QC verification activity

EGI's process of verifying software releases delivered from Technology Providers before they are made available to the Production Infrastructure has been communicated on several occasions (such as the EMI All Hands meeting in early November 2010) to the Technology Providers.

It is still perceived as somewhat obscure and something "unwontedly new" with some amount of pushback to it. SA2 has set up task forces for collaborative Quality Assurance (led by Enol Fernandez del Castillo), Quality Control (led by Carlos Fernandez Sanchez) and Process automation and repositories (led by Kostas Koumantaros) to mitigate this issue in PQ4.

4.3.7. Issue 7: Software packages not collected from the EGI Repository

The EGI Software repository is currently populated with releases of SAM (Service Availability Monitor), and the baseline security certificates maintained by EUGridPMA. Although, for transitory reasons, the repositories of gLite, ARC and UNICORE are mirrored into the EGI Software Repository, it

is difficult to track the true numbers of downloads from the repository, and not to include casual drive-by surfers who explore the repository (as opposed to use them).

To mitigate this Google Analytics is investigated to separate different clients to the Repository and identify site admins who use the EGI Repository for updating the production infrastructure.

4.3.8. Issue 8: Imbalance of DMSU tickets

During PQ3 DMSU noticed an imbalance of tickets distribution across the gLite, UNICORE, ARC and dCache. The majority of the tickets are related to gLite components, whereas only small fractions of tickets relate ARC, UNICORE and dCache. The reason(s) for this are not known and need investigation. Potential reasons might be:

- Simply put, gLite is by far the most widely deployed middleware in EGI
- There might exist other well-trodden paths in bug communication (such as still operative and well-maintained mailing lists for ARC)
- The ticket distribution factually matches the actual bug distribution over the said stacks

4.3.9. Metric M.SA2-11 cannot be collected manually

Due to the success of the mitigation of issue 2, many more tickets are now processed by DMSU. Previously, the low numbers of tickets did not cause substantial manual effort to calculate the mean time of ticket resolution. However, with 144 tickets processed in PQ3 by DMSU the manual effort becomes more than substantial.

4.4. Plans for the Next Period

The Quality Criteria Definition task will continue the process of completing the UMD Capabilities by gathering and identifying requirements from Users and Operation Communities. The first release of the Quality Criteria documents will be made available to the Technology Providers in the next quarter. Outreach to the Technology Providers through their respective software quality managers will be done.

A new testbed based on virtual machines will be installed using SA2.3 partners resources. This testbed will be operative for next scheduled EMI1 release (30/04/2011). Before, during and after EMI1 release SA2 team and TPs will increase the flow of communication to coordinate efforts and to clarify QC Verification process and workflow.

During PQ4 TSA2.4 will focus its efforts to implement the integration between RT and GGUS and collaborate with external TPs such as EMI and IGE in order to do a couple of trial releases and adapt NSRW as necessary. Discussions for the requirements of the 3rd iteration of the NSRW implementation are planned for PQ3 in order to be able to decouple the EGI Software Repository from what the TPs provide.

It is planned that DMSU will start handling support requests for Nagios in connection with several middlewares. Additionally support for failover/ balancing will be incorporated into DMSU for services where it is supported from the middleware providers. For the latter, expertise should already be available, but for Nagios a number of new people will need to be added as experts/resolvers.

Better integration with GGUS is planned with respect to extracting metrics and functionality for ETAs for bug fixing. Finally an increased level of activity is expected after the release of EMI1, and the subsequent deployment.

The whole Software Provisioning Activity in EGI-InSPIRE is concentrating efforts on minimising the effects of the major overhaul of the Software Verification and Release process.

5. EXTERNAL RELATIONS

5.1. Summary

With the EGI.eu based policy and dissemination teams coming up to full strength in January 2011, PQ3 saw the external relations activity of EGI-InSPIRE able to provide central coordination to the community's distributed activities.
Planning for the EGI User Forum in Vilnius advanced during PQ3. The call for participation in the technical sessions, workshops, training, demonstrations and posters was opened and closed. The contributions were reviewed by the programme committee and a programme was established. Fortnightly organisational meetings between EGI.eu staff and the local organisers were maintained during this time.
EGI dissemination teams attended SC10 New Orleans, 8th e-Infrastructure Concertation event at CERN, and the NGS Innovation Forum, Didcot UK. Various grid related conferences or workshops were organised by IISAS, IPB and E-ARENA.
The policy development team completed the terms of reference for the policy groups and completed MoUs with two external technology providers – the EMI and IGE projects. Documents describing the current EGI position in terms of the European Research Infrastructure Consortium, the issues relating to any migration from grids to clouds, and the EU2020 and the innovation union were produced.

5.2. Main Achievements

5.2.1. Dissemination

During PQ3, NA2.2 has been building on the contacts established during the face-to-face meeting at the EGI Technical Forum, circulating event notices and announcements for wider distribution nationally. We have also now established dissemination contacts at two more of the unfunded Asia Pacific partners, ASTI and ITB. Dissemination contacts are also now identified at INFN and HealthGrid. The full list of contacts is now available at https://wiki.egi.eu/wiki/TNA2.2_Dissemination#Team. The EGI.eu dissemination team is also exploring opportunities for joint EGI/NGI booths at events in Turkey and Hungary. A further face to face meeting with all dissemination representatives from the NGIs is planned for the User Forum in Vilnius.

A graphic designer / writer joined the Dissemination team in Amsterdam at the end of PQ3 and this is enabling the EGI branding to be developed further, including presentation templates, poster templates, brochure templates and banners.

The dissemination team also continued to develop the flagship EGI website during the third quarter, www.egi.eu. The focus during this period was on the EGI-InSPIRE project pages and the 'About' pages, introducing EGI as a whole. Examples of new content include a new Frequently Asked Questions section (http://www.egi.eu/about/faq/) aimed at the general public, a brief History of EGI (http://www.egi.eu/about/history_of_EGI.html) and an updated list of the projects metrics (http://www.egi.eu/projects/egi-inspire/metrics/index.html). The Glossary, Staff pages, EGI-InSPIRE's Deliverables and Milestones and other pages have been updated as required. During PQ3, particularly since the beginning of January 2011, there has been an increase in the rate of publication of website news items. Thanks to EGI's progress and the development of a network of dissemination contacts, we have now material to publish about two stories per week. The team has also been working closely with CESNET and the EGI-InSPIRE work package leaders to set up an EGI blog, which will include regular contributions from across the project and wider community.

The second issue of the EGI *Inspired* newsletter was issued in November [R12] to the all-members email list, and articles are in preparation for *iSGTW* magazine, based on some of the *Inspired* material. A series of case studies based on grid applications are also in development.

The EGI dissemination team represented the project at a number of events during PQ3 including the 8th e-Infrastructure Concertation event at CERN on 4-5 November and the NGS Innovation Forum, 23 November, Didcot UK, publishing blog posts on the e-ScienceTalk GridCast blog (www.gridcast.org). EGI booths were also hosted at SciTech in Brussels on 23 November, and also at SC10, 15-19 November in New Orleans, an event attracting more than 10,000 delegates.

In PQ3, NA2.2 has also focused on preparations for the EGI User Forum in Vilnius, 11-15 April. This has included participation in the Programme and Organising Committees, as well as working on an outreach plan for the meeting and advertising the event itself through our media channels. Content was also developed for the conference website at http://uf2011.egi.eu/ and the site has been regularly updated. The dissemination team also worked with the Organising Committee and the local organisers to produce the sponsor and exhibition guides.

In PQ3, ASGC produced an EGI project factsheet in Chinese version for distribution and also organised an Application Training event. They attended six conferences and workshops, giving presentations and distributing promotional material, such as the EGI-InSPIRE Factsheets at all events attended. ASGC was featured in an online press release on the EU FP National Contact Point in Taiwan (NCP Taiwan) published on December 1, 2010. "ASGC Joined FP7-INFRASTRUCTURES-2010-2 DEGISCO, EMI, and EGI-InSPIRE Projects"[33]. LIP is participating in the organisation of the IBERGRID conference, namely in establishing the conference program for 2011 where one of the main topics will be EGI. They have also disseminated the details of the conference and EGI's participation to the scientific community. INFN has prepared materials such as posters, brochures and banners, and these were exhibited at the INFN booth at SC10. INFN also worked with the NA2.2 EGI team on an article on NGI researcher profiles for *Inspired*. IISAS has organised the 6th International Workshop on Grid Computing for Complex Problems GCCP2010, November 8-10, 2010, Bratislava, and held a press conference at the event, as well as featuring in an interview in Slovak scientific journal Quark and preparing materials for the Ministry of Education. IPB organized a dissemination and training event at the University of Belgrade and is also working on a new website at www.aegis.rs. E-ARENA published the Proceedings of the 4-th International conference "Distributed Computing and Grid-technologies in Science and Education" and has created a bilingual site for EGI/RU-NGI support. CYFRONET's dissemination work included advertising EGI computing capabilities and available software amongst the chemical community in Poland, mainly during meetings with small groups of scientists.

5.2.2. Policy

EGI.eu:

- Internal policy groups: Terms of References (ToRs) for the following groups have been approved by the Executive Board: TCB, OMB, OTAG, OAT, UCB, USAG, SPG, SVG and SCG; the ToR for the EAC (External Advisory Committee) was approved by the EGI-InSPIRE Project Management Board
- The Policy Development Process [R13] was approved by the EGI.eu Executive Board
- MoU with external partners:
    - Signed: EMI, IGE (technology providers)

[33] http://go.egi.eu/smfoo

  - Ready to sign: WeNMR (VRC)
  - Mature draft: GISELA (project), DECIDE (VRC), FURJ (technology provider)
  - Initial draft: StratusLab, LSU/SAGA (technology provider), SAGrid (technology provider), ERINA+ (project)
- A report has been written on describing the alignment and role of EGI.eu with the Europe 2020 strategy and related Digital Agenda and Innovation Union flagships [R14]
- Prepared an analysis of benefits/issues on adopting the ERIC legal framework for EGI.eu (MS212) [R15]
- Secretarial support for various policy group meetings
- Created the Glossary Coordination Group which goal is to define and maintain agreed definitions on important terms to be referenced in policy and procedure documents
- Written report analysing how EGI can benefit from virtualization and cloud; the report set out the context for defining a technology roadmap for the implementation (D2.6) [R16]
- Finalised the standards roadmap (D2.5) [R17]

FOM: The role of identity and the authentication trust fabric within EGI was further clarified in the context of the expanding trust fabric[34], and how the expanding trust fabric brings new challenges to compliance and policy implementation. It is foreseen that through the IGTF, with contributions by the EU FP7 EUMedGridSupport project, the trust fabric will further expand in regions relevant to EGI. A new version of the Guidelines on Attribute Authority Operations was drafted, putting increased emphasis on generic aspects of attribute release and targeting more technologies besides VOMS Attribute Certificates. This version, lead primarily by EGI effort but with important input from DEISA/PRACE, will be input to a global interoperability discussion within the IGTF. This discussion is foreseen for PQ4 at the IGTF All Hands meeting and OGF31 in Taipei.

UISAV: press conference organized in the first day of GCCP2010 workshop in Bratislava 8.Nov.2010 (2 hours).

TCD:

- participated in the Security Policy Group meeting in January 2011, and will be involved in editing and rewriting a number of SPG policy documents including the Top-Level Security Policy, Site Operations Policy, Virtual Machine Endorsement policy, and data protection policies.
- attended the 21st EU Grid PMA meeting (via teleconference) to represent the Grid-Ireland CA and the Irish NGI user community. This included discussion of policy for operation of authorization services (such as VOMS).

STFC: continues to lead the Security Policy Group. The main activity in PQ3 was to get the full SPG off the ground following the formal approval of its Terms of Reference. Members were recruited to the group and its mail list was populated. Plans were made for the first full face to face meeting of SPG in January. This meeting, held at Nikhef on 11-13 Jan 2011[35], discussed many important topics with the main aim of understanding which new security policies are needed and which of the current policies are most in need of revision. A work plan for 2011 was agreed including the creation of several editorial teams.

[34] http://go.egi.eu/arzdo

[35] https://www.egi.eu/indico/conferenceDisplay.py?confId=263

CNRS: has again been mostly involved in structuring the French NGI (France Grilles).The French NGI has also taken part in the Financial Task Force of the EGI Council (Vincent Breton). Definition of a policy for resources allocation: a strategy document on resources allocation has been draft based on discussion between user support community.

SWITCH: attended and contributed to the SPG face-to-face meeting

SIC: participation in the EGI Council and Executive Board and revision of deliverables and policy documents therein. Work on policy boards for the design of FP8, in particular the document of positioning towards the e-infrastructures. Organisation of a meeting in Madrid chaired by Herve Pero to discuss the ongoing efforts in e-infrastructure deployment in Europe, and in particular analyse the strengths and weaknesses of the innovation mechanisms in Europe.[36]

IPB: during PQ3, a number of policy-related activities and meetings were organized in collaboration with the Serbian government and its Ministry of Science and Technological Development. The meetings were related to the implementation of the National Science and Technological Development Strategy 2010-2015, and in particular to the development of research infrastructures which will be realized with the support of IPA structural funds and a loan from the European Investment bank. On the occasion of the start of negotiations for a full membership of Serbia at CERN, a meeting was organized with the deputy-prime minister Mr. Bozidar Djelic, where the development of Grid infrastructures was discussed.[37]

LIP: policy activities in PQ3 were centred in the participation in several bodies with policy impact. These include EGI bodies such as the EGI PMB, EGI Council, EGI AMB and EGI OMB. There was also a continuous participation in EUgridPMA and IGTF activities. We plan to continue our participation in these bodies.

INFN: participation in SPG meetings and participation/presentation at Italian NGI policy groups related to security and operations.

CYFRONET: the work concerned compliance of Polish NGI procedures with EGI of policy procedures recommendations. Several recommendations from the Polish NGI have been suggested, especially those related to reporting installed software packages in EGI tools (AppDB).

5.2.3. Events

In November Lyon was selected to organise the Technical Forum 2011. The meeting will be held at the Cité | Centre de Congrès | Lyon (Lyon Convention Centre) on the banks of the Rhone, close to Lyon University 1. The meeting will be organised by France Grilles (http://www.france-grilles.fr/) and HealthGrid (http://www.healthgrid.org/) together in the week 19 - 23 September 2011. It was later decided to co-locate the Globus World Europe meeting with the TF. There will be a full meeting day on Monday 19 September and room for contributions to other sessions during the rest of the week.

Preparations are ongoing for the EGI User Forum 2011 (http://uf2011.egi.eu) in Vilnius. This meeting offers an opportunity to catch up on all of the developments that have taken place over the last 6 months within the European Grid Infrastructure and its user community. The meeting is co-located with the first Technical Conference of the European Middleware Initiative (EMI) project and will

[36] http://www.oemicinn.es/actualidad/eventos/towards-a-research-and-innovation-union-main-challenges

[37] http://www.scl.rs/index.php?option=com_content&view=article&id=678

provide an opportunity to catch up on the latest middleware developments contained within the EMI-1 release and their plans for the future.

Registration for the EGI UF2011 was opened in the beginning of January 2011. The programme was defined by the end of January 2011.

5.3. Issues and mitigation

5.3.1. Issue 1: Inactive Dissemination Partners

A number of partners have still not yet nominated contacts for their dissemination activities 9 months into the project. These include funded partners UPT, SIGMA and UCPH, plus unfunded partners NUS and UPM. Efforts will continue through the Collaboration Board to identify contacts for dissemination activity in these partners.

5.3.2. Issue 2: Inactive Policy Partners

The number of partners that have not yet nominated contacts for their policy activities was reduced during PQ3. The funded partner UPT is still missing since it has not yet signed an internal MoU.

5.3.3. Issue 3: EGI.eu Understaffing

Understaffing in the policy team in PQ1 and PQ2 led to delays in the finalisation of some deliverables. During PQ3, all the personnel were hired and started working therefore we expect to be back on track during PQ4.

5.4. Plans for the next period

5.4.1. Dissemination

In PQ4 the Dissemination team will continue to work on the outreach plan for the EGI User Forum in Vilnius, including press releases to be issued during the event. This will also include producing a Book of Abstracts, including the abstracts from the oral presentations. The team will also update the website with content about sponsors and produce poster and presentation templates for delegates and also booth materials such as posters and banners. The team will also create promotional materials to advertise the EGI Technical Forum in Lyon in September 2011, and participate in the Organising Committee. NA2.2 will run two sessions in Vilnius, a “Birds of a Feather” event focusing on shared dissemination experiences and a face-to-face NA2.2 meeting.

A range of printed materials will be developed using the new brochure template, including an update to the general EGI brochure, a series of case studies and a media friendly fact sheet. The design of the home page of the website will also be reviewed to include more graphical elements. The EGI blog will also be launched in February.

NA2.2 will attend a number of events during PQ3, including a presentation and workshop at the TERENA-CPR on 10-11 February, which will bring together communications contacts at NRENs and NGIs. A booth is also planned at the Women in Science, Innovation and Technology in the Digital Age, in Budapest, Hungary, 6-8 March. EGI will form part of the electronic displays at the sponsored cocktail event at Cloudscape-III Brussels on 15-16 March. The team will work with GridCast to blog on behalf of EGI at the ISGC2011/OGF31 event in Taipei, Taiwan, 19-25 March. NA2.2 is also working with NA3 to attend CW11, The Collaborations Workshop, Edinburgh, 3-4 April.

The third issue of the EGI *Inspired* newsletter will be issued in February to the all-members list, and articles are in preparation for *iSGTW* magazine. CYFRONET will continue to provide information about EGI computing capabilities and available software to local communities.

5.4.2. Policy

The EGI.eu policy team plans to run a survey involving all NGIs in order to collect information about their structure and operational details; the material will be the basis for the Policy Development session at the EGI User Forum in Vilnius.

UISAV: meeting(s) with new potential resource providers and adaptation of policy for them.

TCD: work on the SPG Site Operations Policy and Virtual Machine Endorsement policies, due in PQ5.

CNRS: Will work on the definition of the strategic plan of NGI France, define the Technical Roadmap of NGI France and validate the policy for Resource Allocation in NGI France

STFC: the agreed SPG work plan for 2011 includes work on the following policy areas:

- Full revision of the old top-level Security Policy document
- Policy related to Data privacy.
    - Phase 1: expand the job-level accounting policy to include storage accounting
    - Phase 2: even more general data privacy policy and its relationship with the EU Digital Agenda.
- Revision of the Grid Site Operations Policy
    - To include general service operation security policy (real and virtual services
    - Include Resource Providers, Virtual Machine managers, etc.
    - This will now exclude operational (non-security) items to be considered by SA1 and OMB
- Generalise the HEPiX Security Policy on the Endorsement of Virtual Machine Images to include other types of trustworthy Virtual Machines
- SPG Glossary (as a contribution to the more general EGI Glossary).

SWITCH: Will contribute to the SPG activity and to the sustainability document

LIP: participation in the EGI council workshop in Santander.

CYFRONET: work on promoting internal Polish NGI procedures for the adoption by other NGIs or EGI global; procedures concern access unification to scientific packages in grid environment.

6. CONSORTIUM MANAGEMENT

6.1. Summary

PQ3 saw the last partner sign the Grant Agreement (NUS) and the project office settling down in to routine operation. PPT remains a difficulty for some partners to fill in correctly and on time.

6.2. Main Achievements

6.2.1. Project Management

Following an extended deadline from the EC, the NUS finally signed the GA and therefore completed the project startup phase. Interim payments based on the work reported in PPT were made for PQ2.

6.2.2. Milestones and Deliverables

Id	Activity No	Deliverable / Milestone title	Nature (***)	Lead partner	Original Delivery date(*) [38]	Revised delivery date(*)	Status (**)
D2.6	2	Integration of Clouds and Virtualisation into the European production infrastructure https://documents.egi.eu/document/258	R	1	8	10	PMB approved
D5.2	5	UMD Roadmap https://documents.egi.eu/document/272	R	1	9	10	PMB approved
D6.2	6	Sustainability plans for the HUC activities https://documents.egi.eu/document/309	R	35	9	10	PMB approved
MS605	6	Training and dissemination event for all shared services and other tasks within the activity https://documents.egi.eu/document/326	R	19	8	11	PMB approved
MS212	2	Alignment of EGI.eu with the ERIC organisational model https://documents.egi.eu/document/244	R	14	8	9	PMB approved
MS213	2	EGI Newsletter https://documents.egi.eu/document/365	R	1	9	9	PMB approved
MS107	1	Quarterly Report 3 https://documents.egi.eu/document/361	R	1	9	11	PMB approved

6.2.3. Consumption of Effort

The effort contributed by the partners within the consortium is recorded in the Project Tracking Tool (PPT), and a summary provided below. PPT is used by partners to record and report their consumed effort on a monthly basis. The report lists the effort by each partner within each work package, and

[38] *(*) 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*

includes the worked PM and the committed PM figures. A comparison between these two figures is also included as a percentage of achieved PM.

The reported man-power is based on validated timesheets only. The risk of errors is always possible; thus we accept, upon justified request, that corrections made to the figures until the subsequent report is issued. So PQ1 access was definitely closed when PQ2 ends (Nov 2010) and PQ2 has been closed in January 2011. After that, any deviations from the PPT records that will be issued for the yearly report should be clarified and justified in the project's periodic report.

A definition of terms is included below:

- Committed PM: Person months planned in the Annex I for the full project duration. The comparison is based on the linear plan of the full person months, i.e. over 16 quarters. After every reporting period, any deviations to the plan will be adjusted in the second year plan. So that person months and budget will be balanced in the subsequent period
- Worked Person Month funded: these are the resources engaged by the partner for the realisation of their tasks; the person month are computed using the yearly labour hours applicable in the partner's country. These resources are recorded in PPT as fully funded. The funding being shared between the three stakeholders: the European Commission, the National Grid Initiative, i.e. the partners and its national source of funding and EGI.eu.

OVERVIEW OF EFFORT COMMITTED ACROSS THE PROJECT:

Selected period: PM7 to PM9 (November 2010 to January 2011)

Report extracted on 18 February 2011

Type	Work Package	Worked PM Funded	Committed PM	Achieved PM % (PQ3)	Achieved PM % (PQ2)	Achieved PM % (PQ1)
MGT	WP1	18,2	20,6	88%	73%	33%
COORD	WP2	38,2	44,2	86%	84%	54%
COORD	WP3	56,1	60,0	93%	85%	54%
SUPPORT	WP4	290,5	296,9	98%	98%	84%
SUPPORT	WP5	34,0	31,4	108%	72%	40%
SUPPORT	WP6	47,6	61,0	78%	64%	59%
RTD	WP7	13,3	18,6	72%	81%	108%
	Total	497,9	532,7	93%	88%	71%

PROJECT Period 1: PM1 to PM9 (May 2010 to January 2011)

Report extracted on 18 February 2011

Type	Work Package	Worked PM Funded	Committed PM	Cumulative Period 1 (PQ1-PQ3)
MGT	WP1	41,8	61,3	68%
COORD	WP2	98,7	132,6	74%
COORD	WP3	141,5	180,0	79%
SUPPORT	WP4	822,7	878,2	94%
SUPPORT	WP5	70,3	94,3	74%
SUPPORT	WP6	126,7	183,0	69%
RTD	WP7	40,7	55,8	73%
	Total	1.342,3	1.585,1	85%

Effort levels across the activities continue to increase. Significant issues with the following partners are being resolved:

- Nordunet has declared funded PMs while these can only be refundable NDGF has been formed as a legal entity
- The reports of RED.ES activity has been exceeded the plan for all of PQ1. The investigation showed up a misunderstanding about the efforts recording process by the partner. The corrections over PQ1 to PQ3 will be made and funding will be adjusted accordingly in PQ3.

The following partners are still reporting low or zero effort since the start of the project. Of particular concern are EMBL, UPT (Albanian), IIAP NAS-RA (Armenia) and the Norwegian JRU (SIGMA, UIO & URA). Other partners that have reported below the linear plan include: IPP-BAS (now IICT); SARA; UWAR, which has only recently recorded one member in PPT, and the other Polish JRU POLITECHNIKA WROCLAWSKA; UI SAV; UCPH; IMCS-UL.
Partners who have exceeded the plan include Spanish JRUs, i.e. CSIC, FCTSG, CIEMAT, IFAE and UAB; CNRS; GRNET while reporting half of its committed PMs are +/- balanced with the activity of its JRUs that exceed the plan, among which IASA still exceeds a lot; SRCE; BME and Sztaki; INAF and UNIPIG; RENAM; UKIM; FOM; LIP; UG one of the English JRU exceeds the plan while the others under spent; all Russian JRUs now exceed the plan but it will be balanced with the under spending in PQ1 and PQ2; same for the Romanian JRUs.

Analysing effort over the course of the *whole* project as opposed to a single quarter:

- Spanish JRUs, i.e. CSIC, FCTSG, CIEMAT, IFAE and UAB; the average of all JRUs is 120% in PQ3 and 108% over period 1 (PQ1-PQ3)
- CNRS 120% in PQ3 and over period 1 (PQ1-PQ3) it is 126%
- Greek JRU: Only one JRU member is very active (IASA) and declares huge figures; GRNET reports half of its committed efforts and 4 JRUs don't report any. Then in total over period 1, the JRUs have achieved 57% of the PMs committed
- SRCE 122% in PQ3 and over period 1 (PQ1-PQ3) it is 111%
- BME 141% and Sztaki 241%; in the cumulative figure of period 1 Sztaki efforts are twice as much;
- INAF 139% and UNIPIG 349% ; UNIPIG has reported 3.5 times more efforts for each PQ
- RENAM 208% in PQ3 and over period 1 (PQ1-PQ3) it is 136%
- UKIM 137% in PQ3 and over period 1 (PQ1-PQ3) it is 120% ;
- FOM has declared twice as much efforts over Period 1; Together the Dutch JRU has achieved 87% of the efforts planned;
- LIP 151% in PQ3 but 80% over period 1;
- UG (English JRU) exceeds the plan in PQ3 (128%); in total over period 1 the IK JRUs have achieved 115% of the efforts committed;
- Russian JRUs have all exceed the linear plan in PQ3; however it is not enough yet to catch up with the declaration since the start of the project and the JRU has only achieved 54% of its committed PMs

- Romanian JRUs have all exceed the linear plan in PQ3 (specially Univ Bucuresti which declared 1.2 PMs vs 0.1 planned); however it is not enough yet to catch up with the underspending since the start of the project and the JRU has only achieved 67% of its committed PMs

The detailed breakdown of effort contributed to each work package by each partner is provided in the following tables for PQ3 along with PQ2 and PQ1 figures. Each work package (for reporting purposes) is split into the different types of effort used within EGI-InSPIRE (which has different reimbursement rates) and is therefore reported separately. The different types are:

- M: Project Management as defined by the EC.
- E: EGI Global Task related effort.
- G: General tasks within the project.
- N: NGI International Task related effort.

EGI-InSPIRE Quarterly Effort Report per Work Package

Selected period: PM7 to PM9 (November 2010 to January 2011)
Report extracted on 18 February 2011

Project Quarter 3

WP1-E - WP1 (NA1) - Management

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
1-EGI.EU	8,1	8,9	91%		0%	90%
Total:	8,1	8,9	91%		0%	90%

WP1-M - WP1 (NA1) - Management

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
1-EGI.EU	9,5	11,2	85%		61%	74%
Total:	10,1	11,7	86%		61%	74%

WP2-E - WP2 (NA2) - External Relations

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
1-EGI.EU	16,4	19,3	85%		25%	72%
26A-FOM	0,3	0,3	82%		36%	298%
34A-STFC	1,2	1,2	98%		94%	127%
Total:	17,8	20,8	86%		29%	78%

WP2-N - WP2 (NA2) - External Relations

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
2-UPT	0	0,8	0%		0%	0%
5A-IPP-BAS	0,2	0,5	44%		17%	37%
7C-SWITCH	0,2	0,4	35%		0%	9%
8-UCY	0,5	0,5	110%		70%	56%
9-CESNET	0,3	0,5	52%		33%	91%
10B-KIT-G	0,9	0,9	102%		115%	123%
10E-BADW	0	0,2	0%		0%	0%
12A-CSIC	1,7	1,4	117%		114%	186%
12D-UPVLC	0,5	0,8	71%		128%	67%
13-CSC	0,1	1,1	6%		209%	1%
14A-CNRS	1,4	0,9	164%		63%	136%
14C-HealthGrid	0,5	0,4	105%		156%	35%
18B-BME	0,4	0,1	343%		80%	429%
18C-MTA SZTAKI	0	0,1	0%		0%	0%
19-TCD	0,4	0,4	100%		100%	100%
20-IUCC	0	0,3	0%		86%	34%
21A-INFN	0,7	1,3	59%		85%	66%
22-VU	1,1	1,3	81%		154%	113%
26A-FOM	0,2	0,2	88%		0%	0%
26B-SARA	0	0,3	0%		3%	71%
27A-SIGMA	0	0,4	0%		0%	20%
28A-CYFRONET	1,3	1,0	126%		150%	135%
29-LIP	0,8	0,8	111%		0%	139%
30-IPB	0,8	0,8	104%		104%	104%
31-ARNES	1,3	1,1	118%		0%	91%
31B-JSI	0,8	0,6	123%		0%	96%
32-UI SAV	0,3	0,5	63%		79%	71%
33-TUBITAK ULAKBIM	1,0	1,0	103%		103%	103%
34A-STFC	3,0	1,6	186%		87%	175%
36-UCPH	0	0,8	0%		0%	0%
38-VR-SNIC	0,1	0,1	95%		0%	0%
38A-KTH	0	0,4	0%		0%	0%
39-IMCS-UL	0,8	1,4	56%		0%	17%
40A-E-ARENA	1,1	0,9	123%		222%	35%
Total:	20,3	23,4	87%		79%	84%

WP3-E - WP3 (NA3) - NA3 User Community (EGI)						
	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
1-EGI.EU	12,2	12,6	97%		33%	74%
12A-CSIC	2,2	0,8	299%		0%	21%
16A-GRNET	0	2,1	0%		0%	0%
16E-IASA	4,2	0,8	520%		306%	776%
29-LIP	1,1	0,8	152%		0%	108%
34B-UE	0,3	1,4	22%		173%	138%
Total:	20,1	18,4	109%		49%	101%

WP3-N - WP3 (NA3) - NA3 User Community						
	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
2-UPT	0	1,9	0%		0%	0%
3-IIAP NAS RA	0	0,4	0%		0%	0%
5A-IPP-BAS	0,2	0,5	39%		86%	55%
7A-ETH ZURICH	0,1	0,3	26%		66%	38%
7B-UZH	1,0	0,5	192%		1%	67%
8-UCY	0,6	0,5	114%		161%	186%
9-CESNET	2,0	1,8	117%		125%	110%
10B-KIT-G	2,5	2,6	95%		78%	125%
10C-DESY	0,8	0,6	133%		109%	115%
10D-JUELICH	0	0,2	0%		0%	0%
10G-FRAUNHOFER	0	0,8	0%		0%	0%
12A-CSIC	0,8	0,2	448%		0%	341%
12D-UPVLC	1,6	1,5	105%		36%	102%
13-CSC	0,2	1,5	16%		0%	0%
14A-CNRS	2,5	1,8	138%		0%	132%
14B-CEA	0	0,7	0%		0%	0%
14C-HealthGrid	2,6	0,9	294%		251%	469%
15-GRENA	0,4	0,4	100%		33%	100%
18A-MTA KFKI	0,6	0,6	114%		104%	118%
18B-BME	1,1	0,6	190%		81%	197%
18C-MTA SZTAKI	1,7	0,9	189%		91%	271%
19-TCD	0,9	0,9	97%		97%	97%
20-IUCC	1,8	0,8	223%		173%	151%
21A-INFN	1,8	2,5	72%		100%	64%

	Q3		Q1	Q2		Q3
Partner	Worked PM Funded	Committed PM	Achieved PM %		Partner	Worked PM Funded
22-VU	0	0,9	0%		0%	0%
23-RENAM	1,5	0,6	267%		108%	135%
26A-FOM	0,2	0,3	75%		0%	0%
26B-SARA	0,0	0,3	9%		0%	23%
27A-SIGMA	0	0,3	0%		0%	30%
27B-UIO	0	0,4	0%		0%	0%
27C-URA	0	1,0	0%		0%	0%
28A-CYFRONET	0,5	0,3	200%		177%	113%
28B-UWAR	0	1,1	0%		0%	0%
28C-ICBP	0,5	0,9	52%		48%	52%
29-LIP	3,3	1,8	189%		0%	82%
30-IPB	1,1	1,0	105%		105%	105%
31-ARNES	0,7	0,7	103%		0%	104%
31B-JSI	0,5	0,5	103%		0%	103%
32-UI SAV	2,0	2,4	83%		90%	96%
33-TUBITAK ULAKBIM	2,0	2,3	89%		102%	89%
34A-STFC	0,2	1,0	23%		44%	62%
34C-UG	0	0,3	0%		0%	0%
34D-IMPERIAL	0	0,3	0%		0%	0%
34E-MANCHESTER	0	0,3	0%		0%	0%
36-UCPH	0	1,3	0%		0%	0%
38A-KTH	0	0,6	0%		0%	0%
40A-E-ARENA	0,5	0,4	122%		0%	0%
Total:	36,0	41,6	86%		56%	83%

WP4-E - WP4 (SA1) - SA1 Operations (EGI)

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
1-EGI.EU	1,8	2,3	81%		84%	101%
10B-KIT-G	2,8	4,4	63%		122%	73%
12A-CSIC	1,4	1,1	128%		38%	139%
12B-FCTSG	2,8	0,8	380%		17%	202%
13-CSC	1,7	1,4	119%		72%	100%
14A-CNRS	0,7	0,8	92%		86%	96%
16A-GRNET	0,2	4,4	3%		0%	0%
17-SRCE	0,9	0,7	130%		87%	172%
21A-INFN	2,1	2,3	93%		76%	67%

	Q3		Q1	Q2		Q3
Partner	Worked PM Funded	Committed PM	Achieved PM %		Partner	Worked PM Funded
21B-GARR	1,8	0,8	235%		107%	259%
26A-FOM	3,4	0,8	450%		367%	434%
26B-SARA	2,1	1,4	147%		172%	148%
28A-CYFRONET	1,5	1,4	102%		109%	95%
29-LIP	1,7	1,1	160%		0%	101%
34A-STFC	5,1	4,4	116%		113%	137%
35-CERN	5,1	3,7	137%		62%	142%
38A-KTH	1,8	1,4	124%		119%	119%
Total:	36,8	32,9	112%		86%	110%

WP4-N - WP4 (SA1) - Operations

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
2-UPT	0	2,0	0%		0%	0%
3-IIAP NAS RA	0	1,2	0%		69%	0%
5A-IPP-BAS	1,3	6,8	19%		37%	33%
5B-IOCWCP-BA	0,3	0	N/A		N/A	N/A
5C-GPhI	0	0,5	0%		0%	83%
6-UIIP NASB	1,3	1,9	66%		155%	220%
7A-ETH ZURICH	1,0	2,1	45%		51%	65%
7B-UZH	0,6	1,1	55%		11%	27%
7C-SWITCH	2,2	2,2	100%		47%	117%
8-UCY	1,5	3,0	51%		76%	59%
9-CESNET	7,9	8,0	98%		88%	94%
10B-KIT-G	7,8	8,2	95%		116%	113%
10C-DESY	2,3	1,6	141%		120%	123%
10D-JUELICH	1,9	1,6	119%		55%	99%
10E-BADW	1,4	2,8	51%		0%	34%
10G-FRAUNHOFER	1,0	1,3	82%		78%	192%
10H-LUH	0,5	1,6	32%		0%	14%
11-UOBL ETF	2,6	4,7	55%		0%	57%
12A-CSIC	2,8	2,8	102%		113%	99%
12B-FCTSG	4,2	4,5	93%		129%	103%
12C-CIEMAT	2,3	2,4	98%		0%	88%
12D-UPVLC	1,8	1,8	104%		34%	73%
12E-IFAE	3,3	2,9	114%		114%	114%
12F-RED.ES	5,6	3,3	173%		0%	192%

	Q3		Q1	Q2		Q3
Partner	Worked PM Funded	Committed PM	Achieved PM %		Partner	Worked PM Funded
12G-UNIZAR-I3A	1,9	3,3	59%		277%	258%
12H-UAB	4,3	2,5	173%		0%	160%
13-CSC	7,2	4,2	171%		54%	162%
14A-CNRS	23,1	15,8	147%		204%	176%
14B-CEA	5,6	4,0	141%		102%	160%
15-GRENA	1,2	1,2	104%		35%	104%
16A-GRNET	7,7	7,7	99%		48%	30%
16B-AUTH	1,1	0,8	141%		0%	0%
16C-CTI	0	0,8	0%		0%	0%
16D-FORTH	0	0,8	0%		0%	0%
16E-IASA	1,2	0	N/A			0
16G-UI	0	0,5	0%		0%	0%
16H-UP	0,8	0,6	122%		0%	0%
17-SRCE	5,0	4,5	112%		112%	112%
18A-MTA KFKI	4,3	4,1	104%		107%	107%
18B-BME	2,1	1,8	112%		42%	80%
18C-MTA SZTAKI	4,4	1,5	290%		125%	341%
19-TCD	4,5	5,9	76%		134%	114%
20-IUCC	0,9	1,6	58%		87%	96%
21A-INFN	26,1	22,9	114%		116%	72%
21B-GARR	0	0,8	0%		0%	0%
22-VU	0,7	1,4	52%		73%	91%
23-RENAM	2,3	1,3	181%		74%	85%
24-UOM	4,7	4,4	106%		13%	63%
25-UKIM	6,1	4,4	137%		82%	140%
26A-FOM	3,7	2,0	183%		78%	276%
26B-SARA	1,9	8,0	24%		29%	21%
27A-SIGMA	0	2,5	0%		0%	45%
27B-UIO	0	1,8	0%		0%	0%
27C-URA	0	0,9	0%		0%	0%
28A-CYFRONET	10,3	7,0	148%		171%	153%
28B-UWAR	0	0,5	0%		0%	0%
28C-ICBP	2,0	1,1	175%		21%	108%
28D-POLITECHNIKA WROCLAWSKA	0	1,2	0%		0%	0%
29-LIP	8,8	6,7	131%		0%	120%
30-IPB	7,3	7,4	99%		103%	102%
31-ARNES	2,9	2,7	106%		0%	108%
31B-JSI	3,3	3,2	102%		0%	115%
32-UI SAV	4,2	6,0	70%		81%	69%

	Q3		Q1	Q2		Q3
Partner	Worked PM Funded	Committed PM	Achieved PM %		Partner	Worked PM Funded
33-TUBITAK ULAKBIM	6,4	8,2	79%		127%	90%
34A-STFC	6,7	6,5	104%		81%	117%
34C-UG	4,9	3,6	136%		188%	181%
34D-IMPERIAL	3,4	3,6	93%		184%	169%
34E-MANCHESTER	1,5	3,6	40%		132%	130%
36-UCPH	2,4	5,1	47%		22%	18%
38A-KTH	0,3	0,4	79%		20%	20%
38B-LIU	0,8	1,9	44%		134%	75%
38C-UMEA	2,4	3,0	78%		92%	90%
39-IMCS-UL	1,1	3,3	34%		26%	56%
40B-SINP MSU	2,5	1,3	200%		0%	0%
40C-JINR	1,0	0,8	124%		0%	0%
40D-RRCKI	1,0	0,8	124%		0%	0%
40F-ITEP	0,9	0,8	124%		0%	0%
40G-PNPI	0	0,8	0%		0%	0%
51A-ICI	4,2	2,2	189%		63%	58%
51C-UPB	0	0,8	0%		0%	0%
51D-UVDT	0	0,6	0%		0%	0%
51E-UTC	0	0,6	0%		0%	55%
51H-INCAS	0	0,2	0%		0%	0%
51J-UB	1,2	0,1	923%		0%	527%
Total:	253,8	264,0	96%		84%	98%

WP5-E - WP5 (SA2) - Provisioning Software Infrastructure

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
1-EGI.EU	2,5	2,3	110%		20%	116%
9-CESNET	6,9	6,7	103%		82%	97%
10D-JUELICH	1,9	1,5	124%		15%	82%
12A-CSIC	4,3	3,3	130%		46%	122%
12B-FCTSG	1,2	1,1	112%		0%	13%
16A-GRNET	1,0	3,5	28%		0%	37%
16B-AUTH	0,3	0,8	40%		0%	0%
16E-IASA	2,2	0,8	271%		309%	482%
16F-ICCS	0	0,8	0%		0%	0%
21A-INFN	4,2	2,9	141%		81%	60%
29-LIP	7,6	4,4	173%		0%	20%

	Q3		Q1	Q2		Q3
Partner	Worked PM Funded	Committed PM	Achieved PM %		Partner	Worked PM Funded
36-UCPH	0	1,5	0%		0%	0%
38B-LIU	1,5	1,5	101%		0%	90%
41-NORDUNET	0,5	0,4	133%		0%	0%
Total:	34,0	31,4	108%		40%	75%

WP6-G - WP6 (SA3) - Services for the Heavy User Communities.

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
10G-FRAUNHOFER	0,8	2,3	35%		0%	18%
12A-CSIC	1,0	2,3	44%		103%	84%
12C-CIEMAT	2,3	1,5	154%		0%	154%
13-CSC	0,2	1,5	10%		196%	110%
14A-CNRS	2,5	3,8	66%		19%	31%
14B-CEA	0	0,7	0%		0%	0%
14C-HealthGrid	0,1	2,4	6%		94%	0%
19-TCD	1,7	1,8	100%		100%	100%
21A-INFN	0	5,0	0%		0%	0%
21C-INAF	3,5	2,5	139%		0%	84%
21D-UNIPG	2,6	0,8	349%		366%	337%
21E-SPACI	0,9	2,3	39%		58%	39%
28C-ICBP	0	0,5	0%		0%	11%
31B-JSI	0,2	0,3	77%		0%	77%
32-UI SAV	0,3	1,5	23%		52%	46%
35-CERN	31,4	28,4	111%		77%	94%
37-EMBL	0	3,7	0%		0%	0%
Total:	47,6	61,0	78%		60%	70%

WP7-E - WP7 (JRA1) - JRA1 Operational Tools (EGI)

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
10B-KIT-G	1,2	2,9	40%		105%	61%
12B-FCTSG	0,8	0,8	105%		188%	55%
14A-CNRS	0,8	0,8	102%		85%	90%
16A-GRNET	0,6	0,8	85%		0%	0%
17-SRCE	1,3	0,8	178%		30%	30%
21A-INFN	1,0	1,5	63%		190%	93%

	Q3		Q1	Q2		Q3
Partner	Worked PM Funded	Committed PM	Achieved PM %		Partner	Worked PM Funded
34A-STFC	1,3	1,5	83%		101%	93%
35-CERN	0	0,8	0%		0%	0%
Total:	6,9	9,7	71%		100%	61%

WP7-G - WP7 (JRA1) - JRA1 Operational Tools

	Q3				Q1	Q2
Partner	Worked PM Funded	Committed PM	Achieved PM %		Achieved PM %	Achieved PM %
12B-FCTSG	0,1	0,8	13%		0%	39%
14A-CNRS	3,8	5,2	74%		64%	65%
17-SRCE	0,9	0,8	119%		119%	119%
34A-STFC	0,5	0,8	69%		14%	34%
35-CERN	1,1	1,5	77%		95%	73%
Total:	6,5	8,9	72%		66%	66%

6.2.4. Overall Financial Status

Below is a report of the financial status of the project, based on the effort figures reported via PPT, as listed in the previous section. A definition of the terms is listed below:

Cost average: based on the cost provided by the partners during the preparation of the budget; it includes the average of the gross salary, a lump sum to cover the travel costs and the overhead costs.

Eligible costs estimate: these are computed using the person months declared and the cost average of every partner; these costs will be reviewed in the annual report when the partners will be requested to prepare their cost statements based on the real costs registered in their account books.

Estimated funding: It is calculated from the eligible costs estimate on which has been applied the percentage rate of the funding applicable within the task grouping activity defined in the Annex I. Three groups have been identified:

- the NGI International tasks are being funded 33% by the Commission and 67% by the project partner
- the General tasks are funded 40% by the Commission and 60% by the project partner
- the EGI Global tasks are funded 25% by the Commission, 25% by EGI.eu foundation and 50% by the project partner.

As a distinct activity resulting from the daily project management, the management tasks are 100% refunded by the Commission. The funding to each partner from the European Commission is detailed in a separate confidential document.

Partner	PQ3				
	Worked PM Funded	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
1-EGI.EU	50,6	56,4	90%	448.933	266.770
2-UPT	0	4,7	0%	0	0
3-IIAP NAS RA	0	1,6	0%	0	0
5A-IPP-BAS	1,7	7,8	22%	10.379	3.425
5B-IOCWCP-BA	0,3	0	N/A	1.526	504
5C-GPhI	0	0,5	0%	0	0
6-UIIP NASB	1,3	1,9	66%	4.827	1.593
7A-ETH ZURICH	1,0	2,4	43%	8.755	2.889
7B-UZH	1,6	1,6	97%	11.041	3.644
7C-SWITCH	2,3	2,6	89%	32.183	10.620
8-UCY	2,7	4,0	66%	22.949	7.573
9-CESNET	17,1	17,0	101%	127.373	50.785
10B-KIT-G	15,1	19,0	79%	134.290	50.262
10C-DESY	3,0	2,2	139%	27.112	8.947
10D-JUELICH	3,8	3,3	114%	33.629	13.899
10E-BADW	1,4	3,0	48%	12.863	4.245
10G-FRAUNHOFER	1,8	4,3	43%	16.102	5.805
10H-LUH	0,5	1,6	32%	4.663	1.539
11-UOBL ETF	2,6	4,7	55%	10.491	3.462
12A-CSIC	14,3	11,8	121%	111.593	47.900
12B-FCTSG	9,1	7,8	117%	71.528	30.069
12C-CIEMAT	4,6	3,9	119%	36.124	13.182
12D-UPVLC	3,9	4,0	98%	30.744	10.146
12E-IFAE	3,3	2,9	114%	25.521	8.422
12F-RED.ES	5,6	3,3	173%	43.912	14.491
12G-UNIZAR-I3A	1,9	3,3	59%	14.887	4.913
12H-UAB	4,3	2,5	173%	33.778	11.147
13-CSC	9,4	9,7	97%	96.877	35.088
14A-CNRS	34,8	29,0	120%	300.932	105.263
14B-CEA	5,6	5,4	105%	48.582	16.032
14C-HealthGrid	3,2	3,7	85%	27.361	9.113
15-GRENA	1,6	1,6	103%	3.954	1.305
16A-GRNET	9,5	18,5	51%	73.154	26.487
16B-AUTH	1,5	1,6	91%	11.386	4.189
16C-CTI	0	0,8	0%	0	0
16D-FORTH	0	0,8	0%	0	0
16E-IASA	7,6	1,6	471%	59.178	27.990
16F-ICCS	0	0,8	0%	0	0
16G-UI	0	0,5	0%	0	0
16H-UP	0,8	0,6	122%	5.897	1.946
17-SRCE	8,1	6,7	122%	40.354	15.503
18A-MTA KFKI	4,9	4,7	105%	19.193	6.334
18B-BME	3,6	2,5	141%	19.714	6.506
18C-MTA SZTAKI	6,1	2,5	241%	36.986	12.206
19-TCD	7,5	8,9	84%	72.598	25.143
20-IUCC	2,7	2,6	103%	35.033	11.561
21A-INFN	35,8	38,3	93%	263.777	96.066

Partner	Worked PM Funded	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
21B-GARR	1,8	1,5	118%	13.010	6.505
21C-INAF	3,5	2,5	139%	25.682	10.273
21D-UNIPG	2,6	0,8	349%	19.305	7.722
21E-SPACI	0,9	2,3	39%	6.493	2.597
22-VU	1,8	3,6	49%	14.791	4.881
23-RENAM	3,8	1,8	208%	11.464	3.783
24-UOM	4,7	4,4	106%	11.226	3.705
25-UKIM	6,1	4,4	137%	24.257	8.005
26A-FOM	7,6	3,5	218%	78.259	32.145
26B-SARA	4,0	10,0	40%	41.307	17.312
27A-SIGMA	0	3,2	0%	0	0
27B-UIO	0	2,2	0%	0	0
27C-URA	0	1,9	0%	0	0
28A-CYFRONET	13,5	9,7	140%	115.903	40.390
28B-UWAR	0	1,6	0%	0	0
28C-ICBP	2,4	2,5	97%	20.737	6.843
28D-POLITECHNIKA WROCLAWSKA	0	1,2	0%	0	0
29-LIP	23,3	15,4	151%	127.754	51.854
30-IPB	9,1	9,2	100%	49.900	16.467
31-ARNES	4,9	4,5	109%	29.285	9.664
31B-JSI	4,7	4,6	104%	28.343	9.434
32-UI SAV	6,9	10,4	66%	54.935	18.324
33-TUBITAK ULAKBIM	9,4	11,4	83%	66.377	21.904
34A-STFC	18,1	17,0	106%	185.442	74.768
34B-UE	0,3	1,4	22%	3.275	1.638
34C-UG	4,9	3,9	128%	50.816	16.769
34D-IMPERIAL	3,4	3,9	87%	34.507	11.387
34E-MANCHESTER	1,5	3,9	38%	15.013	4.954
35-CERN	38,2	34,9	109%	549.791	231.746
36-UCPH	2,4	8,6	27%	25.991	8.577
37-EMBL	0	3,7	0%	0	0
38-VR-SNIC	0,1	0,1	95%	1.356	447
38A-KTH	2,1	2,8	75%	23.727	11.287
38B-LIU	2,3	3,4	69%	26.778	11.790
38C-UMEA	2,4	3,0	78%	27.202	8.977
39-IMCS-UL	1,9	4,7	41%	14.784	4.879
40A-E-ARENA	1,6	1,3	123%	6.386	2.107
40B-SINP MSU	2,5	1,3	200%	9.899	3.267
40C-JINR	1,0	0,8	124%	4.001	1.320
40D-RRCKI	1,0	0,8	124%	3.984	1.315
40F-ITEP	0,9	0,8	124%	3.677	1.213
40G-PNPI	0	0,8	0%	0	0
41-NORDUNET	0,5	0,4	133%	7.140	3.570
51A-ICI	4,2	2,2	189%	25.416	8.387
51C-UPB	0	0,8	0%	0	0
51D-UVDT	0	0,6	0%	0	0
51E-UTC	0	0,6	0%	0	0
51H-INCAS	0	0,2	0%	0	0
51J-UB	1,2	0,1	923%	7.015	2.315
Total:	497,9	532,7	93%	4.155.413	1.659.485

* this total includes the EGI.eu direct contribution to the global tasks performed in the project

7. PROJECT METRICS

7.1. Overall metrics

Project Objectives	Objective Summary	Metrics	Target Year 1[39]	PQ1	PQ2	PQ3
PO1	Expansion of a nationally based production infrastructure	Number of production resources in EGI (M.SA1.Size.1)	300	341	337	340
		Number of job slots available in EGI (M.SA1.Size.2)-Integrated	300 000	277 193	296 588	308 583
		Number of job slots available in EGI (M.SA1.Size.2)-Project	200 000	184 844	197 777	207 203
		Reliability of core middleware services (M.SA1.Operation.5)	90%	93.3%	90.7%	92.3%
PO2	Support of European researchers and international collaborators through VRCs	MoUs with VRCs (M.NA2.11)	5	0	0	0
		Number of papers from EGI Users (M.NA2.5)	50	25	25	29
		Number of jobs done a day (M.SA1.Usage.1)	500 000	834 746	871 073	819 100
PO3	Sustainable support for Heavy User Communities	Number of sites with MPI (M.SA1.Integration.2)	50	NA	73	90
		Number of users from HUC VOs (M.SA1.Size.7)	5000	NA	NA	NA
PO4	Addition of new User Communities	Number of desktop resource (M.SA1.Integration.3)	0	NA	0	1562
		Number of users from non-HUC VOs[40] (From M.NA3.12)	500	3542 Computer Science and Mathematics (24); Multidisciplinary (1682); Other (1836)	3749 Computer Science and Mathematics (28); Multidisciplinary (1850); Other (1871)	4109 Computer Science and Mathematics (10); Multidisciplinary (1987); Other (2112)
		Public events organised (M.NA2.6)	1500	TBC	TBC	TBC

[39] Year 1: April 2010 –April 2011

[40] Non-HUC VOs cover the following disciplines: Computer Science and Mathematics, Multidisciplinary, Other. The disciplines are defined in the Operations Portal

PO5	Transparent integration of other infrastructures	MoUs with resource providers (M.NA2.10)	3	0	0	0
PO6	Integration of new technologies and resources	MoUs with Technology providers (M.NA2.9) Number of HPC resources (M.SA1.Integration.1) Number of virtualised resources (M.SA1.Integration.4)	2 1 0	0 NA NA	0 55 246.2	2 54 NA

7.2. Activity metrics

7.2.1. NA2

Metric ID	Metric	Number	Comments/Explanation of the metric
M.NA2.1	Press releases issued	1	
M.NA2.2	Number of media contacts following press releases	4	
M.NA2.3	Press cuttings relating to EGI, EGI.eu, EGI-InSPIRE or NGI.	22	
M.NA2.4	Interviews given to media organisations	5	
M.NA2.5	Scientific papers	19	
M.NA2.6	Public events organised by NGI teams	3	
M.NA2.7	Events with EGI/NGI presence (stand, presentation, or literature)	14	
M.NA2.8	Number of unique visitors per month on your main project website(s)	10 407	
M.NA2.9	Number of MoUs or agreements signed with technology providers	2	
M.NA2.10	Number of MoUs or agreements signed external providers or with (non-EGI) resource	0	
M.NA2.11	Number of MoUs or agreements established with collaborating virtual user communities	0	

Metric ID	Metric	Number	Comments/Explanation of the metric
M.NA2.12	Number of operational procedures recorded by EGI.eu	1	

7.2.2. NA3

https://wiki.egi.eu/wiki/WP3:_User_Community_Coordination#Activity_level_metrics

Metric ID	Metric	Public / Internal	Task	PQ3	Comments
M.NA3.1	Number of GGUS tickets CREATED (grouped by submitting community – where available)	P	TNA3.3	2986	
M.NA3.2	Number of GGUS tickets CREATED & SOLVED per user Support Unit (NGIs & EGI.eu)	P	TNA3.3	0	User Support Team Units were not available in GGUS during these periods
M.NA3.3	Number of GGUS tickets CREATED by users and SOLVED by EGI.eu	P	TNA3.3	0	User Support Team Units were not available in GGUS during these periods
M.NA3.4	Time to resolve tickets: • Average time • Median time	P	TNA3.3	14.4 8.2	
M.NA3.5	Uptime of User Support websites: • Training • Application Database • VO Support Services	P	TNA3.4	Pending 99% Currently in wiki	To be moved to egi.eu

Metric ID	Metric	Public / Internal	Task	PQ3	Comments
M.NA3.6	Visitors to User Support websites: • Training • Application Database • VO Support Services	P	TNA3.4	Pending 215 Currently in wiki	
M.NA3.7	Number of VO Support Services: • Evaluated • Supported • Offered as service	P	TNA3.4	4 3 1	
M.NA3.8	Number of Applications in the AppDB • Applications • Tools • Personal profiles	P	TNA3.4/3	265 21 512	There were a further 10 significant training events promoted by EGI. These ranged from MSc courses to non European events and have thus been excluded from this 'metric', though they serve to demonstrate EGI's growing influence.
M.NA3.9	Number of Trainers in the Trainers database	P	TNA3.4/3	57	
M.NA3.10	Number of Training Days delivered through NGI Training events	P	TNA3.4/3	*82*	

Metric ID	Metric	Public / Internal	Task	PQ3	Comments
M.NA3.11	Number of: • New/decommissioned VOs • Low/Medium/High Activity VOs • international VOs	P	TNA3.1	3/0 17/22/28 92	
M.NA3.12	Number of users (grouped by community and VO)	P	TNA3.1	13 848 HEP 5977 Inf. 1859 LS 747 CC 478 AA 342 ES 320 Comp. Science and Maths 10 Fusion 16 Multi-disciplinary 1987 Others 2112	

7.2.3. SA1

SA1 Task	Metric name	Metric description	PQ1	PQ2	PQ3
TSA1.1	M.SA1.Size.1	Total number of production resource centres that are part of the EGI	341	337	340

SA1 Task	Metric name	Metric description	PQ1	PQ2	PQ3
TSA1.2	M.SA1.OperationalSecurity.1	Number of Site Security Challenge (SSC) made	0	13	0
	M.SA1.OperationalSecurity.2	Number of Sites passing one Service Challenge	0	100%	0
	M.SA1.OperationalSecurity.3	Number of suspended sites for security issues	0	0	0
TSA1.3	M.SA1.ServiceValidation.1	Total number of staged rollout components operated per NGI	27 (for 34 overall components)	30 (for 34 overall components)	15 (19)
	M.SA1.ServiceValidation.2	Number of staged rollout releases undertaken & rejected	0	3	3
TSA1.5	MSA1.Accounting.1	Number of sites adopting AMQ messaging for Usage Record publication	NA	62	149 (90 RGMA, 62 direct insertion, 56% infrastructure ok)

SA1 Task	Metric name	Metric description	PQ1	PQ2	PQ3
TSA1.7	M.SA1.Support.7	COD Workload per month	May: 886 June: 188 July: 1742	Aug: 652 Sep: 591 Oct: 487	Nov: 764 Dec: 551 Jan: 844
	M.SA1.Support.8	ROD Workload per month per region/NGI	May: 4535 June: 1532 July: 4277	Aug: 2622 Sep: 2733 Oct: 1944	Nov: 2943 Dec: 1912 Jan: 2090
	M.SA1.Support.9	ROD Quality Metrics per month per region/NGI	May: 0.84 June: 0.81 July: 0.89	Aug: 0.86 Sep: 0.89 Oct: 0.9	Nov: 0.90 Dec: 0.81 Jan: 0.76
TSA1.8	M.SA1.Operation.2	Number of sites suspended	No sites suspended by COD	6 (3 sites for July, 1 site for August and 2 sites for September)	Nov: 1 Dec: 0 Jan:1

7.2.4. SA2

Metric ID	Metric	Value for Q3	Comments/Explanation
M.SA2.1	Number of software components recorded in the UMD Roadmap	30	
M.SA2.2	Number of UMD Roadmap Capabilities defined through validation criteria	17	76% of the UMD capabilities are defined.
M.SA2.3	Number of software incidents found in production that result in changes to quality criteria	0	No software incidents found in production so far.

Metric ID	Metric	Value for Q3	Comments/Explanation
M.SA2.4	Number of new releases validated against defined criteria	1	
M.SA2.5	Mean time taken to validate a release	8h	
M.SA2.6	Number of releases failing validation	0	
M.SA2.7	Number of new releases contributed into the Software Repository from all types of software providers	3	
M.SA2.8	Number of unique visitors to the Software Repository	412	
M.SA2.9	Number of releases downloaded from the Software Repository	0	
M.SA2.10	Number of tickets assigned to DMSU	144	
M.SA2.11	Mean time to resolve DMSU tickets	n/a	It is not feasible to extract this metric manually.

7.2.5. SA3

Metric ID	Metric	Task	PQ3	Comments
M.SA3.1	Number of VOs deploying their own dashboard instance/view	TSA3.2.1	4	ALICE, ATLAS, CMS, LHCb
M.SA3.2	Number of users of deployed dashboard instances	TSA3.2.1	Up to 8600	Unique IP addresses
M.SA3.3	Number of unique users of GANGA	TSA3.2.2	692	
M.SA3.4	Number of unique users of DIANE	TSA3.2.2	18	
M.SA3.5	Number of sites using GANGA	TSA3.2.2	82	
M.SA3.6	Number of sites using DIA	TSA3.2.2	15	

Metric ID	Metric	Task	PQ3	Comments
M.SA3.7	Number of users of GReIC	TSA3.2.3	~100	Mainly Earth Science and Environmental Domains
M.SA3.8	Number of users of Hydra	TSA3.2.3	0	Service not yet delivered
M.SA3.9	Number of users of SOMA2	TSA3.2.4	18	*Current SOMA2 service is "restricted" to CSC users (As PQ1/2)*
M.SA3.10	Number of users using Taverna to access EGI resources	TSA3.2.4	*0*	*As PQ1/2*
M.SA3.11	Number of users using RAS	TSA3.2.4	5	
M.SA3.12	Number of users using MD (Kepler)	TSA3.2.4	5	
M.SA3.13	Number of users using Gridway	TSA3.2.4	7	
M.SA3.14	Number of MPI support tickets	TSA3.2.5	*0*	*Number from PQ1/2*
M.SA3.15	Mean time to resolve MPI support tickets	TSA3.2.5	*N/A*	*Number from PQ1/2*
M.SA3.16	Number of HEP VO support tickets	TSA3.3	929	Sum of ALICE, ATLAS, CMS and LHCb
M.SA3.17	Mean time to resolution of HEP VO support tickets	TSA3.3	241:38	HHH:MM
M.SA3.18	Number of Life Science Users of provided services	TSA3.4	14	# people in biomed technical team
M.SA3.19	Number of databases integrated and/or accessible from EGI resources.	TSA3.4	2	1 in the context of the Climate-G testbed (metadata DB) 1 for training purposes (in the context of GILDA).
M.SA3.20	Number of unique users of VisIVO	TSA3.5	15	

Metric ID	Metric	Task	PQ3	Comments
M.SA3.21	Number of data sets accessible from EGI resources	TSA3.6	2 (+)	More are accessible at the GENESI-DR site. 2 means: two categories of data, GOME data from GENESI and LIDAR data available on EGI

7.2.6. JRA1

Metric ID	Metric	Public / Internal	Task	Comments	*Value*
M.JRA1.1	Number of software release	*Public*	TJRA1.2 & TJRA1.5	*2 SAM* *2 GGUS* *2 Ops Portal*	*6*
M.JRA1.2	Number of software issues reported with deployed operational tools	*Public*	TJRA1.2	*5 ops portal/dashboard* *20 gocdb* *14 ggus (identified bugs in ggus SU within the period)* *1 accounting portal* *0 metrics portal* *8 accounting repository* *19 SAM (11 type bug affecting Update6 after Nov 15th(3 of them affecting U4,5,6) + 8 for Update7 after Dec 6th)* *All previous bugs are detected in production but not critical.* *No blocking or critical bug found in production*	*45*
M.JRA1.3	Mean time to release for critical issues reported in production	*Public*	TJRA1.2	*No blocking or critical issue found on production deployed software in the quarter*	*N/A*

Metric ID	Metric	Public / Internal	Task	Comments	*Value*
M.JRA1.4	Number of approved (by OTAG) enhancement requests	*Public*	TJRA1.2	*OTAG-04 SAM rt#499 for arc probes integration* *OTAG-04 SAM rt#501 monitoring ops tools availability* *OTAG-04 && OMB f2f rt#500 SAM automatically certify sites* *OTAG-05 ops portal rt #292,476,477,478,480,482,484,485,549,636* *OTAG-06 GOCDB: #944, #940, #939*	*3+10+3 = 16*
M.JRA1.5	Mean time from approval to release for approved enhancement requests	*Public*	TJRA1.2	*Calculated on the number of otag approved requests for SAM and Ops Portal that reached production with SAM-U7 and Ops Portal v2.5*	1.4 Months
M.JRA1.6	Number of operational tool instances deployed regionally	*Public*	TJRA1.3	*23 NGI instances covering 34 EGI partners* *3 ROC instances covering 4 EGI partners* *2 project instances covering 2 EGI partners* *3 external ROC instances covering the following regions: Canada, IGALC and LA (https://wiki.egi.eu/wiki/SAM_Instances)* *3 regional operational dashboard: NGI_CZ,NGI_IBERGRID,NGI_Greece* *4 xGUS instances* *(https://wiki.egi.eu/wiki/Operational_tools_deployment_plans)*	*38*
M.JRA1.7	Number of different resources that can be accounted for in EGI	*Public*	TJRA1.4	*TJRA1.4 will start in PY2*	*N/A*

8. ANNEX A1: DISSEMINATION AND USE

8.1. Main Project and Activity Meetings

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
8 Nov 2010	FNAL, USA	OSG/WLCG/ EGI Security meeting		David Kelsey, STFC: A meeting between the OSG security team, WLCG and EGI to discuss the plans of EGI SPG and possibilities for future policy standardisation work. It was agreed that we would work jointly on defining security policy standards and coordinate these under the auspices of IPG. (A private meeting with no web page)

8.2. Conferences/Workshops Organised

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
Nov 2010	ICI Bucharest	RoGrid-NGI Consortium meeting	10	
8-10 Nov, 2010	Bratislava	6th International Workshop on Grid Computing for Complex Problems GCCP2010	74	
10-12 Nov 2010	ASTI	Training on SPECFEM_3D GLOBE Application for Local Seismologists	9 participants 2 trainers from ASGC	The workshop primarily focused on how to use SPECFEM3D_GLOBE, which was installed on the ASTI HPC's Liknayan Cluster. This cluster had been certified as a production machine, and was connected to the Enabling Grids for E-sciencE (EGEE), a European grid initiative. The resource speakers for the workshop were Jim Ho and Jinny Chien of ASGC.

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
11-12 Nov 2010	Manila, Philippines	EU-Asia Training on Natural Disaster Mitigation	11	The training event was coordinated by ASGC and Advanced Science and Technology Institute (ASTI). It aimed to facilitate a grid-based e-Science Infrastructure for hazards mitigation in Philippines with the collaboration of local domain experts. Eleven participants from both ASTI and PHILVOS (Philippine Institute of Volcanology and Seismology) attended the Workshop. Two tutors from ASGC (Jim Ho and Jinny Chien) taught how to run the SPECFEM3D and Finite Difference simulation via EUAsia Portal.
15 Nov 2010	Faculty of Chemistry, University of Belgrade, Serbia	EGI Grid training at UOB Faculty of Chemistry	15	http://www.scl.rs/index.php?option=com_content&id=669
23 Nov 2010	Berlin, Germany	Course on Grid computing with hands-on	70	
23-24 Nov 2010	Oxfordshire	NGS Innovation Forum	60	
30 Nov 2010	Bern	Swiss Grid Day	50	http://www.swing-grid.ch/event/242148-swiss-grid-day-2010
1-3 Dec 2010	Wroclaw, Poland	I3 Conference	3	
2 Dec 2010	Universitat Autònoma de Barcelona (UAB) - Bellaterra, Barcelona.	4ª Reunión Plenaria de la Red Española de e-Ciencia		
2-3 Dec 2010	Copenhagen	NDGF All Hands	11	
6 Dec 2010	Birmingham	NGS Collaboration Board	20	
13 Jan 2011	Bern	AAA Infoday	100	
19 Jan 2011	Stockholm	SweGrid All hands meeting	15	

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
19 Jan 2011	Espoo, Finland	FGI Kick-off	24	Kick off meeting for the procurement process for Finnish 2M€ grid resource investment. Purchased hardware will be installed in 9 sites and connected to EGI
24 Jan 2011	Amsterdam	Network Support workshop	30	

8.3. Other Conferences/Workshops Attended

Date	Location	Title	Participants	Outcome (Short report & Document Server URL to presentations made)
1 Nov 2010	CERN, Geneva	EEF F2F		
3 Nov 2010	Instituto de telecomunicações Coimbra	Workshop on High Performance Computing	80	Advanced Computing presentation. http://www.ccc.ipt.pt/~hpc/index.html
4-5 Nov 2010	Geneva, Switzerland	8th e-Infrastructure Concertation Meeting	200	EGI-InSPIRE was presented at the meeting and blog posts were written on the GridCast blog about the event by members of the dissemination team. http://indico.cern.ch/contributionDisplay.py?sessionId=2&contribId=21&confId=108791
7-10 Nov 2010	Boston, MA, USA	ADASS Conf. XX	2	Two posters have been presented: P040 : Large Astrophysical Object visualization on SmartPhone P038 : VisIVO Desktop: a new interactive desktop environment for astrophysical visualization
7-12 Nov 2010	Madrid, Spain	Fussion Community Support Technical meeting		
9 Nov 2010	Dublin, Ireland	e-INIS All Hands	3	Presentations about Grid-Ireland status and plans
9-11 Nov 2010	Copenhagen	NDGF Strategy Workshop		

11-13 Nov 2010	JINR, Dubna, Russia	All-Russia school for young scientists «Devices and methods of experimental nuclear physics. Electronics and automatics of experimental installations »	50	V.V. Korenkov(JINR) two lectures: JINR Networking and Computing Infrastructure Presentations: http://www.d-instruments.ru/materials/Korenkov_Infrastructure.pdf Distributed computing and Grid http://www.d-instruments.ru/materials/Korenkov_Grid.pdf
15-19 Nov 2010	New Orleans, US	SC10	10,000	EGI hosted a booth at the event, distributing brochures, GridBriefings and pens.
21-23 Nov 2010	Prague	EMI All Hands Meeting	5 from jra1	
23 Nov 2010	Didcot, UK	e-Challenges 2010	250	EGI-InSPIRE was presented at the meeting and blog posts were published at the event on the GridCast blog.
22-23 Nov 2010	Brussels, Belgium	SciTech Europe	200	EGI hosted a booth in the networking area and delivered a masterclass. http://www.publicserviceevents.co.uk/event/overview.asp?ID=151
25-27 Nov 2010	University of the West of England, Bristol, UK		1	Workshop to develop skills that are essential for a researcher, such as communication, planning, time management, problem solving, leadership and assertiveness. http://rbi.uwe.ac.uk/internet/research/events/default.asp?id=946
29 Nov - 03 Dec 2010	CERN, Geneva	ATLAS Software and Computing Workshop	100	http://indico.cern.ch/conferenceDisplay.py?confId=76896
30 Nov 2010	Taipei, Taiwan	Ritsumeikan University-Japan Visiting		(1) Presentation given: "*Introduction to TELDAP*"; and (2) promotion materials distributed.

1-2 Dec 2010	Taipei, Taiwan	The 27th Taiwan-European Conference		Presentation given: *"Linking Asia Regional Collaboration with EU e-Infrastructure*; and promotion materials distributed
1-3 Dec 2010	Hanoi, Vietnam	International Workshop on Grid Applications for Vietnam	50	Presentation given: 1. Virtual Research Environment for Earthquake Disaster Mitigation on EUAsiaGrid 2. Linking Asia e-Infrastructure and e-Science Applications 3. Virtual Research Environment for Weather & Climate Applications on EUAsiaGrid http://indico.ifi.refer.org/conferenceDisplay.py?confId=0
2-3 Dec 2010	Special Economic Zone, Congress Hall, Dubna, Russia	All-Russia scientific-practical conference «Principles and mechanisms of formation of national innovative system of the Russian Federation»	200	V.V. Korenkov (JINR) presentation "Grid infrastructure for LHC"
2-3 Dec 2010	NDGF HQ, Kastrup, Denmark	NDGF All Hands Meeting	23	Summary: All-Hands-meeting, discussion of NGI state for each partner country, evaluation of present and future middleware issues and operations procedures, planning of further actions regarding NGI operations and WP tasks. Presentations: https://portal.nordu.net/pages/viewpageattachments.action?pageId=21661098
3 Dec 2010	Belgrade, Serbia	Science Fair	1	
5-10 Dec 2010	Geneva	CMS Week		Reporting about the Tier1 status, plus the CMS system overall. Two big actions for the mid-term are discussed for the latter: migration from ProdAgent to WMSAgent and from DB2 to DB3.
6-7 Dec 2010	Magurele, IFIN-HH ROMANIA	Annual Meeting of the Romanian LCG Federation	30	V.V. Korenkov (JINR) Invited talk «Grid activity in JINR and Russia»

6-10 Dec, 2010	National Center for High Performance Computing (NCHC), Taichung, Taiwan	2010 International Joint Research and Training Program in High Performance Computing Applications & Networking Technology	3 delegates from ASTI	This annual event supported by the Taiwan's National Science Council (NSC) aimed to present Information Technology (IT) developments in High Performance Computing (HPC) and networking in East and Southeast Asia.
6 Dec 2010	Birmingham, UK	NGS Collabo-ration Board Meeting		
7-10 Dec 2010	Brisbane, Australia	eScience	1	
13-14 Dec 2010	Rome, Italy	CHAIN Launching Event and Kick-off Meeting	36	Networking and engagement with ERINA+ project which led to the workshop proposal for EGI User Forum 2011 http://agenda.ct.infn.it/conferenceDisplay.py?confId=464 http://agenda.ct.infn.it/conferenceDisplay.py?confId=495
15 Dec 2010	Rome, Italy	FIRE Conference		
16 Dec 2010	Taipei, Taiwan	Internet2 Arts and Humanities Initiative Visiting	3	Presentation given: "*Introduction to TELDAP"*; and promotion materials distributed.
17 Dec 2010	Dubna, University Dubna, Russia	Seminar of the Academic Center of Competence IBM at University "Dubna" on a theme "Cloudy computing in education and business"	30	V.V. Korenkov (JINR) report **"**Data processing of the experiments on LHC using Grid-technologies and cloud computing"

22 Dec 2010	Skopje, Macedonia	TEDx Skopje videos presentation		
1-25 Dec 2010	JINR, Dubna, Russia	Training of the young scientific from CIS Member States	20	V.V. Korenkov (JINR) lecture "Grid technologies and cloud computing" T.A.Strizh (JINR) lecture "Laboratory of Information Technologies and the JINR Grid activity" A.V. Uzhinsky (JINR) "JINR grid infrastructure for training and education"
24 Jan 2011	CERN, Geneva, Switzerland	LHCb Conditions Database Programme of Work	2	Discussion of current LHCb problems with Conditions Database access on the Grid (issues in accessing Oracle services due to network instability, Oracle Streams latency and reliability..) and possible future strategies (Frontier/Squid, CVMFS...). http://indico.cern.ch/conferenceDisplay.py?confId=117707
24 Jan 2011	University of Göttingen, Germany	Network Requirements for LHC data analysis		
24-26 Jan 2011	Bari	CMS Storage and Data Access Evolution Workshop		
24-26 Jan 2011	Utrecht, NL	21st EuGridPMA	31	David Kelsey, STFC: led the session on the development of a new profile describing the requirements for trustworthy Attribute Authorities. Good progress was made to the wording of the document and this will now be taken forward to develop a better draft before the IGTF All Hands meeting in Taipei in March 2011. David Groep, FOM: for details Accreditation of new CAs; Audit & Reviews of identity providers; role of new attribute and identity mechanisms such as STS (such as those foreseen in EMI and GEANT3); Attribute Authority Operations Guidelines. See https://www.eugridpma.org/meetings/2011 - 01/ for minutes and details
25 Jan 2011	Taipei, Taiwan	ATLAS/CMS Visiting	5	Presentation given: *"ASGC Operations Report for ATLAS & CMS"* ; and promotion materials distributed.
26 Jan 2011	Sarajevo, bosnia and Herzegovina	South East European Research Area for eInfrastructures Open Day		

27 Jan 2011	Amsterdam, NL	CHAIN/GISELA	15	Sergio Andreozzi, Steven Newhouse, Tiziana Ferrari, Peter Solagna: during the meeting the details for a project MoU with GISELA and an infrastructure MoU with Latin-America were agreed and mature draft were defined; participation to the EGI User Forum and interaction with EMI where also discussed. https://www.egi.eu/indico/event/272

8.4. Publications

Publication title	**Journal / Proceedings title**	**Journal references** *Volume number Issue Pages from - to*	**Authors** *1. 2. 3. Et al?*
Efficient resubmission strategies to design robust grid production environments	Proceedings of the IEEE e-Science (e-Science)	Brisbane, Australia, 7-10 December 2010	D. Lingrand, J. Montagnat
Workflow-based comparison of two Distributed Computing Infrastructures	5th Workshop on Workflows in Support of Large-Scale Science (WORKS'10),	New Orleans, LA, USA, November 2010	J. Montagnat, T. Glatard, D. Reimert, K. Maheshwari, E. Caron, F. Desprez
Distributed analysis functional testing using GangaRobot in the ATLAS experiment	J.Phys.Conf.Series, Proceedings of Computing in High Energy Physics 2010		1. Legger, F 2. Caron, B 3. Elmsheuser, J 4. Ubeda Garcia, M 5. Gordon, A W 6. Jha, M K
Reinforcing User Data Analysis with Ganga in the LHC Era: Scalability, Monitoring and User-support	J.Phys.Conf.Series, Proceedings of Computing in High Energy Physics 2010		1. Brochu, F 2. Dzhunov, I 3. Ebke, J 4. Egede, U 5. Elmsheuser, J 6. Jha, M K 7. Kokoszkiewicz, L 8. Maier, A 9. Moscicki, J 10. Munchen, T 11. Reece, W 12. Samset, B 13. Slater, M 14. Tuckett, D 15. Van der Ster, D 16. Williams, M

Publication title	**Journal / Proceedings title**	**Journal references** *Volume number* *Issue* *Pages from - to*	**Authors** *1.* *2.* *3.* *Et al?*
Commissioning of a CERN Production and Analysis Facility Based on xrootd	J.Phys.Conf.Series, Proceedings of Computing in High Energy Physics 2010		1. Campana, S 2. van der Ster, D 3. Di Girolamo, A 4. Peters, A 5. Duellmann, D 6. Coelho Dos Santos, M 7. Iven, J Bell, T
HammerCloud: A Stress Testing System for Distributed Analysis	J.Phys.Conf.Series, Proceedings of Computing in High Energy Physics 2010		1. Van der Ster, D. C 2. Elmsheuser, J. 3. Ubeda Garcia, M. 4. Paladin, M.
Technical report on the validation of Geant4 release 9.4	CERN-LCGAPP-2011-01		1. Dotti, A.
The GRelC Project: from 2001 to 2011, ten years working on Grid-DBMSs	Grid and Cloud Database Management, Springer		1. Fiore, S. 2. Aloisio, G.
Experiment Dashboard for Monitoring of the LHC Distributed Computing Systems	Proc. of Computing in High Energy and Nuclear Physics (CHEP'10), 2010, Taipei, Taiwan		1. Andreeva, J. et al,
Visualization of the LHC Computing Activities on the WLCG Infrastructure	Proc. of Computing in High Energy and Nuclear Physics (CHEP'10), 2010, Taipei, Taiwan		1. Andreeva, J. et al
Running Parallel MATLAB on EGEE Grid	Proc. 6th Int. Conf. Grid Computing for Complex Problems GCCP2010, Bratislava 2010	pp. 169-177	Peter Kurdel Jolana Sebestyénová
Density of States and Wave Function Localization in Disordered Conjugated Polymers: A Large Scale Computational Study	Journal of Physical Chemistry B	Accepted for publication, DOI: dx.doi.org/10.1021/jp1114527	1. N. Vukmirovic 2. L-W. Wang
Several articles	"Distributed Computing and Grid-technologies in Science and Education" GRID2010 (Dubna: JINR, D-11-2010-140, 2010.-p.452. ISBN 978-5-9530-0269-1)	13-363	1.V.V. Korenkov 2. T.A. Strizh 3. Gh. Adam Et al

9. REFERENCES

R 1	https://documents.egi.eu/document/218
R 2	https://documents.egi.eu/document/368
R 3	https://documents.egi.eu/document/283
R 4	https://documents.egi.eu/document/320 is a report example
R 5	https://documents.egi.eu/document/298
R 6	https://documents.egi.eu/document/309
R 7	https://documents.egi.eu/document/309
R 8	https://documents.egi.eu/document/230
R 9	https://documents.egi.eu/document/230
R 10	https://documents.egi.eu/document/240
R 11	https://documents.egi.eu/document/89
R 12	https://documents.egi.eu/document/271
R 13	https://documents.egi.eu/document/169
R 14	https://documents.egi.eu/document/317
R 15	https://documents.egi.eu/document/244
R 16	https://documents.egi.eu/document/258
R 17	https://documents.egi.eu/document/206