EGI-InSPIRE

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Abstract

Report describing the EGI-InSPIRE project's activities from 1st August 2013 to 31st October 2013.



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• DELIVERY SLIP

	Name	Partner/Activity	Date
From	Tiziana Ferrari	EGI-InSPIRE	01 Dec 2013
Reviewed by	**AMB & PMB**	EGI.eu	06 June 2014
Approved by	**AMB & PMB**		10 June 2014

• DOCUMENT LOG

Issue	Date	Comment	Author/Partner
1	20 Nov 2013	First compiled draft	R McLennan & T Ferrari
2	12 Dec 2013	First complete draft	T Ferrari/ EGI.eu

• 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.

• 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

• TERMINOLOGY

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



- **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:

-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.

-The continued support of researchers within Europe and their international collaborators that are using the current production infrastructure.

-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.

-Interfaces that expand access to new user communities including new potential heavy users of the infrastructure from the ESFRI projects.

-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.

-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.

• EXECUTIVE SUMMARY

On October 15 **the project direction was formally handed by Dr. Steven Newhouse who left EGI.eu, to Dr. Tiziana Ferrari** – formerly EGI Chief Operations Officer – and the management of NA2 and SA1 was respectively handed over to Sergio Andreozzi (Strategy and Policy Manager at EGI.eu) and Malgorzata Krakowian (Senior Operations Officer at EGI.eu).

The preparation of the project extension started with the definition of the project objectives for the Project Year 5, the definition of the technical activities, the related budget and the active partners of the consortium. In order to cope with the extension of the project a major reduction of staff working on the project at EGI.eu affecting mainly NA1 and NA2 was applied.

The technical profile and costs of the EGI-InSPIRE operations and technical Global Tasks were reviewed in preparation to a change in funding structure from May 2014 after the end of PY4. These tasks (currently delivered through SA1 and SA2) will evolve into support services – the so-called "EGI Core Activities" – that will still be delivered by partners of the EGI collaboration, but will no longer rely on EC project funding according to the EGI services sustainability plan. A new set of partners responsible of providing these activities and services from May 2014 was appointed and the preparation of handover of activities started.

The integration with other e-Infrastructures worldwide made significant progress during QR14. A transparent pooling of EGI and Open Science Grid (OSG) resources was accomplished in order to serve at best our worldwide user community in structural biology and life sciences. WeNMR – the Virtual Research Community which brings together complementary research teams in structural biology and life sciences into a worldwide virtual research community – is now fully integrated and in production in the **Open Science Grid** (OSG) in the USA through the VO enmr.eu With all this in place, a number of WeNMR services, including the popular grid-enabled HADDOCK and CS-Rosetta web portals[1], could be put in EGI/OSG production mode, sending jobs to grid resources in a transparent manner.

The collaboration with the **XSEDE**[2] infrastructure also strengthened. A number of collaboration areas around cloud, security and user authentication, resource allocation and interfaces for seamless job submission, were defined in order to support the world-wide research collaborations in the life science domain and computational chemistry.

In addition, the resource centres of the **South African National Grid** have been fully integrated in EGI, opening the way to seamless collaboration between research communities in South Africa and Europe. This collaboration – supported by the CHAIN-REDS project[3] – is expected to be extended in the future to the African and Arabian region.

Technical Outreach to New Communities task made good progress on a number of fronts. Two of the Virtual Team projects finished: Technology study for the **Cherenkov Telescope Array** and Collaboration between EGI/NGIs and ESFRI project **ELIXIR**. The final reports of these VTs will be

[1] Wassenaar et al. (2012) J Grid Comp 10:743-767

[2] https://www.xsede.org/

[3] CHAIN-REDS is a FP7 project co-funded by the European Commission (DG CONNECT) aiming at promoting and supporting technological and scientific collaboration across different e-Infrastructures established and operated in various continents.

published in PQ15 and will cover the technology integration work accepted by CTA (integration of WS-PGRADE and InSilicoLab) and the definition of recommendations for the NGIs in order to strengthen support links with ELIXIR. The EGI.eu team setup a survey and initiated a series of teleconferences for the NGI International Liaisons to firstly define the **EGI Distributed Competency Centre**[4], secondly to assess the status of engagement with new users at the NGI level and thirdly, to prepare for the "EGI Towards Horizon2020" workshop[5].

Contacts with the **KM3NET** project were established through the Italian NGI. The pre-production use of the EGI infrastructure for the support of the **DRIHM** hydro-meteorology community is progressing. Support of the chemistry community has progressed with the porting of the OpenEye application by the Serbian NGI and of the **nano-materials community** by the Slovakian NGI. Porting of hydrological models has progressed thanks to the contribution of the Swiss NGI and the Slovakian NGI; porting of the AMIAS code for Computational Physics experiments was completed by NGI_CY. The **SPES** experiment at the Italian national Laboratories in Legnaro was successfully ported, and NGI_ARMGRID is developing a portal for quantum physics applications.

The Swiss NGI continued the effort in the national cloud strategy group aimed to establish and academic national cloud infrastructure. The outcome of this strategy should harmonize with the European cloud infrastructure roadmap that is also one of the targets of EGI.

In collaboration with the EUDAT project[6] and the ENVRI project[7] a study case was set up aiming at enabling the **EISCAT 3D ESFRI** user community to benefit deploy integrated EGI and EUDAT services for big data management. The study case will demonstrate how **computing and data management services offered by different multidisciplinary e-Infrastructures can be successfully integrated and deployed**.

A new working group on GPGPU integration was launched in September tackling the issue of coherent and standardised means for discovering and accessing GPGPU resources in distributed infrastructures. This integration will allow GPGPU applications to get access to a wider distributed resource pool instead of having access to a limited set of local GPGPU resources.

In order to support user communities of the Federated Cloud, the **EGI Applications Database has been extended with support for the management of Virtual Appliances** (VA)[8]. New features allow users of the EGI Federated Cloud to create, publish, enable/disable, archive and delete Virtual Appliances. These new features are publicly accessible in the EGI AppDB test instance. The marketplace features are expected to be rolled into production when the EGI FedCloud infrastructure enters production during spring 2014.

Work on the Mini Projects has been progressing successfully, as reported at the TF 2013, though through different means. The first mini project, TSA4.11 "GOCDB Scoping Extensions and Management Interface", has successfully completed with rolling out GOCDB v5 into production. This work marks an important step in the continuing evolution of the EGI InSPIRE project as it embraces

[4] https://wiki.egi.eu/wiki/Distributed_Competence_Centre

[5] http://go.egi.eu/h2020

[6] http://www.eudat.eu/

[7] http://envri.eu/

[8] https://appdb.egi.eu/

the capabilities that exist throughout the community and allows the registration of services from multiple independent e-Infrastructures.

NA2 has continued its pursuit in communicating the latest developments, services and solutions to both targeted and widespread audiences. Strategic planning has also been a key focus. This includes outreach to user communities, both current and new.

Collaborations have also progressed with projects and organisations such as Helix Nebula, OpenAIRE, DRIHM, EUDAT, PRACE, XSEDE, ESFRI projects, ELIXIR and CTA. **The 2nd edition of the EGI Compendium**[9] was finalised and published as well as a variety of EGI and external publications around topics such as service management and achievements in ongoing collaborations. Progress has also been made on implementing IT Service Management within EGI.eu starting with an approved policy statement and implementation of FitSM requirements documented in a dedicated implementation plan.

The communications team published fourteen News Items, two Case Studies and one issue of the *Inspired* newsletter in QR14[10]. Through various partnerships and activities EGI had nine media mentions[11] including The Financial Times[12], euronews[13], two in iSGTW and three in various GÉANT channels.

In order to facilitate access to distributed resources, **a centrally managed compute and storage resource EGI pool was implemented in September. This resource pool for the first time in EGI introduces a process for resource application and allocation** by lowering barriers for researchers and streamlining procedures that rely on the role of EGI.eu as resource broker acting on behalf of NGIs and Resource Centres. EGI and six of its partners have created an open pool of computing resources for both new and existing user communities. The pool comprises 5,000 job slots and 170 TB of storage, and will be integrated with new resources offers on a quarterly basis.

The accounting infrastructure made substantial technical progress with the integration in the production infrastructure of new accounting clients for ARC and QCG, with the adoption of MPI and Cloud accounting that allows the tracking of infrastructure usage of multi-threaded jobs and Virtual Machines, and the wider adoption of the new accounting publishing protocol SSM 2.0.

The infrastructure upgrade plan to SHA-2 was defined and started its implementation. The timeline of the plan required the negotiation of the start of the default release of SHA-2 end-entity certificates with EUGridMPA and IGTF as documented in the EUGridMPA "Timeline statement on SHA-2 Secure Digest Mechanisms"[14]. The deadline for the upgrade to SHA-2 capable software versions of the services was scheduled at the end of November 2013.

As follow-up action of the end of the EMI and IGE projects, which until April 2013 had been responsible of third level software support in EGI, the **new support levels offered in the EGI**

[9] http://www.egi.eu/news-and-media/publications/#compendium

[10] http://www.egi.eu/news-and-media/publications

[11] http://www.egi.eu/news-and-media/press/index.html#clippings

[12] http://www.ft.com/intl/cms/s/2/5a8ff636-36be-11e3-8ae3-00144feab7de.html

[13] http://www.euronews.com/2013/09/23/visions-from-the-heart/

[14] https://www.eugridpma.org/documentation/hashrat/sha2-timeline

helpdesk – GGUS – by the EGI Technology Providers was completed and implemented, and is now documented in the GGUS helpdesk portal. In addition, the Unified Middleware Distribution of EGI is now capable of importing software packages that are released through third-party repositories like EPEL ("Extra Packages for Enterprise Linux")[15].

EGI contributed to the strengthening of the collaboration on security operations and training involving EGI and staff of the EUDAT and PRACE projects by hosting and organizing a joint security training and security workshop in October 2013. This was a very useful and successful meeting and plans for future closer cooperation on security operations were discussed.

EGI software provisioning activities (SA2) **produced two minor updates for both UMD-2 and UMD-3, plus several revision updates** to promptly provide patches for emerging security vulnerabilities or critical bugs, as well as one update of the distributed monitor infrastructure SAM. **UMD now includes a new middleware stack: QCG**, a framework supporting multi-scale data analysis and simulations for communities requiring the coupled use of HTC and HPC resources. Quality criteria have been consequently updated with the sixth version of the public document. This version reduces the number of measurement criteria, focusing on the critical ones that are applicable to most of the components, and simplifies the process with the target of enabling technology providers or external verifiers to contribute to the verification process.

A total of 63 product releases have been verified and starting from the last month of the quarter, SA2 will be testing the IPv6 compliance as part of its standard validation and verification procedures. Changes in the release process of the product teams after the end of the European funded middleware projects has required the adaptation of software provisioning tools and the procedures. Throughout all these changes, continuity of EGI software provisioning was ensured with no interruptions to the service.

A **new procedure for the centralized handling of user emergency suspension** was approved.

From QR15 the focus of the EGI CSIRT security operations will be the collection of requirements for the secure operations federated clouds in preparation to the production phase of the EGI federated cloud.

The **new GOCDB release** was deployed into the production infrastructure. It now supports multiple databases – thus allowing an easy deployment in different production environments – and provides users with new interesting features such as multiple projects support and scoping enhancements, which make the tool suitable to register services belonging to multiple e-Infrastructures and Research Infrastructures. The SAM team released update-22 that includes the EMI probes while the accounting repository is now collecting data from ARC/JURA, QCG/MAPPER and EDGI resources. Additionally, tests are running to integrate Globus, MPI, Cloud and Storage accounting data.

Due the greatly reduced human resources in project management and quality management, to the work related to the definition of the project extension and the handover of project direction and project management duties, quarterly report was submitted with great delay (6 months). Only NA1 was affected. Activities were duly delivered and managed in each project work package in accordance to the DoW.

[15] https://fedoraproject.org/wiki/EPEL

TABLE OF CONTENTS

1. OPERATIONS

I.1. Summary

During PQ14 the technical profile and costs of the EGI-InSPIRE operations and technical Global Tasks were reviewed in preparation to a change in funding structure from May 2014 after the end of PY4. These tasks (currently delivered through SA1 and SA2) will evolve into support services – the so-called "EGI Core Activities" – that will still be delivered by partners of the EGI collaboration, but will no longer rely on EC project funding.

The technical profile and the related service level targets are defined on wiki[16].

Following the bidding process outlined at the EGI Council in June 2013, by the 19th July 2013 bids had been received for all the identified services or activities. At least one proposal was received for each of Core EGI Activities. Costs and technical specifications of the activities were reviewed in October and the budget and selected partners were approved by the EGI.eu Executive Board in October.

The funding of the EGI Core Activities through EGI-InSPIRE is as follows:

- 50% of in-kind contribution from the partner responsible of technically delivering the task;
- 25% EGI Council membership fees;
- 25% EC contribution.

As of May 2014, EGI Core Activities will totally only rely on NGI funding:

- 60% of in-kind contribution provided by the partner responsible of delivering the activity;
- 40% EGI Council membership fees.

In accordance with the EGI sustainability plan, the **EGI Core Activities will no longer require EC funding from May 2014**. EGI Core Activities provide services that will be available to all participants in EGI.eu who provide participant fees, and to the integrated Resource Infrastructures that engage with EGI through MoUs[17]. All participating NGIs are therefore able to benefit from a high quality set of global core services, delivered 24/7 on behalf of the community by the providers. The EGI Core Activities, their definition and the related costs from May 2014, are detailed in APPENDIX A2.

Preparatory work took place in August for the organization of the Core Infrastructure Platform track of the TF 2013, which hosted many technical meetings, workshops and training sessions in security, accounting and network performance troubleshooting provided in collaboration with the eduPERT community. eduPERT experts can now provide support through the EGI helpdesk.

Collaborative activities with other e-Infrastructure providers made substantial progress. The WeNMR Virtual Research Community[18] comprises over 575 members, a good fraction of which (>15%) are US researchers. WeNMR brings together complementary research teams in structural biology and life sciences into a worldwide virtual research community and provides them with a platform integrating and streamlining the computational approaches necessary for NMR and SAXS

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

[17] https://www.egi.eu/infrastructure/resource-providers/index.html#integrated

[18] WeNMR is a EC FP7 e-Infrastructure project under grant 261572.

data analysis and structural modelling. WeNMR is now fully integrated and in production in the Open Science Grid (OSG) in the USA through the VO enmr.eu With all this in place, a number of WeNMR services, including the popular grid-enabled HADDOCK and CS-Rosetta web portals[19], could be put in EGI/OSG production mode, sending jobs to grid resources in a transparent manner, without specifying a-priori on which side of the Atlantic these should run; it is the Workload Management System[20], which decides where to send the jobs based on site availability and rankings defined in the JDL files. With this we have successfully achieved a transparent pooling of EGI and OSG resources in order to serve at best our worldwide user community in structural biology and life sciences.

In addition, the **resource centres of the South African National Grid have been fully integrated**, opening the way to seamless collaboration between research communities in South Africa and Europe. From now on, the South African and European infrastructure are completely interoperable and part of the same federated infrastructure. The integration was achieved as part of a long-term collaboration between EGI.eu and the Meraka institute, formalised in a Memorandum of Understanding, and the integration is expected to be extended in the future to the African and Arabian region.

The collaboration with the XSEDE[21] infrastructure also strengthened. A number of collaboration areas around cloud, security and user authentication, resource allocation and interfaces for seamless job submission, were defined in order to support the world-wide research collaborations in the life science domain and computational chemistry. In addition, **the international collaboration of WeNMR with user communities in the USA was enabled by allocating resources to the user community in Open Science Grid resource centres**.

In order to facilitate access to distributed resources, **a centrally managed compute and storage resource EGI pool was implemented in September**. This resource pool for the first time radically improves the resource allocation process in EGI, by lowering barriers for researchers and streamlining procedures that rely on the role of EGI.eu as resource broker acting on behalf of NGIs and Resource Centres. EGI and six of its partners have created an open pool of computing resources for both new and existing user communities. Now they are inviting researchers to submit requests to make use of the 5,000 job slots and 170 TB of storage that are on offer.

The **Resource Allocation Pool** uses the facilities of 5 countries within EGI (Belarus, Croatia, Greece, Poland and Turkey) as well as the International Desktop Grid Federation. It gives new and existing user communities simplified access to the resources needed to perform their work, allowing pilot projects or the ability to reserve resources for specific activities. Resource applications can be submitted now on-line through the e-Grant tool[22] that is being developed in the framework of the SA4 mini project "Tools for automating applying for and allocating federated resources".

The accounting infrastructure made substantial technical progress. Two different new accounting clients: ARC/JURA and QCG/MAPPER, which are capable of extracting and publishing information from different Compute Element implementations, were rolled to production. At the same time, the Desktop Grid accounting client started its testing phase. Accounting of MPI and Cloud and the new publishing protocol SSM 2.0/EMI 3 APEL client were also rolled to production.

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[19] Wassenaar et al. (2012) J Grid Comp 10:743-767

[20] Andreetto et al. (2012) J Phys: Conf Ser 396:032021

[21] https://www.xsede.org/

[22] http://e-grant.egi.eu/

The infrastructure upgrade plan to SHA-2 was defined and started its implementation. The timeline of the plan required the negotiation of the start of the default release of SHA-2 end-entity certificates with EUGridMPA and IGTF as documented in the EUGridMPA "Timeline statement on SHA-2 Secure Digest Mechanisms"[23]. The deadline for the upgrade to SHA-2 capable software versions of the services was scheduled at the end of November 2013. Starting from December 2013 Certification Authorities are encouraged to release by default SHA-2 signed credentials as opposed to the SHA-1 certificates currently used in production. The impact of this is that users using SHA-2 signed credentials will not be able to access middleware services that do not support SHA-2. The Operations Management Board approved the following calendar for the decommissioning or upgrade of non-SHA-2 enabled services[24]:

- All production services not supporting SHA-2, versions older than the baseline reported[25], must be upgraded or decommissioned by the 1st of December 2013.
- If the production services are not upgraded or decommissioned, site managers -starting from 1st December 2013 - must retire the affected services from the production infrastructure.
- Starting from October 16t non SHA-2 compliant production services started generating alarms on the operations dashboard, in order to easily record incidents for the affected services and track the service upgrade in the EGI helpdesk.

As follow-up action of the end of the EMI and IGE projects, which until April 2013 had been responsible of third level software support in EGI, the **new support levels offered in the EGI helpdesk – GGUS – by the EGI Technology Providers was completed and implemented**. These are now documented in the GGUS helpdesk portal[26]. Three support types are possible in GGUS: base, medium and advanced, each corresponding to different maximum response times associated to the various ticket priority levels (less urgent, urgent, very urgent and top priority)[27]. In addition, automated ticket handling procedures and new ticket handling policies for the management of ticket metadata about ETA (Estimated Time of Availability of a problem fix) were rolled to production in order to solicit responsiveness from Technology Provider and offer information to users about the time to fix an issue[28].

Four security incidents were handled during the PQ14. The Incident Response Task Force continued to track new security vulnerabilities in operating systems and other generic software deployed in the infrastructure. The "EGI CSIRT Operational Procedure for Compromised Certificates and Central Security Emergency suspension"[29] was finalised and approved by OMB in its September 2013 meeting.

Software release and staged rollout activities for the Unified Middleware Distribution of EGI (task SA1.3) were affected by one of the most important changes since the project started due to

[23] https://www.eugridpma.org/documentation/hashrat/sha2-timeline

[24] https://operations-portal.egi.eu/broadcast/archive/id/1028

[25] https://wiki.egi.eu/wiki/SHA-2_support_middleware_baseline

[26] https://ggus.eu/pages/resp_unit_info.php

[27] https://wiki.egi.eu/wiki/FAQ_GGUS-PT-QoS-Levels

[28] https://wiki.egi.eu/wiki/FAQ_GGUS-Waiting-For-PT-Process#Differences_to_former_EMI_work_flows

[29] https://documents.egi.eu/document/1018

the change in upstream software release procedures adopted by some the Technology Providers formerly supported by the EMI project. Now, most of these started to release software in third-party repositories like EPEL ("Extra Packages for Enterprise Linux")[30] instead of using an ad-hoc repository (the EMI one). This change completely changed the way UMD gets software packages, with a consequent increase in the complexity during the release process.

The planning of the integration of the EGI Cloud Infrastructure with the grid production infrastructure is now complete, the main result was the successful certification of first cloud-only site.

In collaboration with the EUDAT project[31] and the ENVRI project[32] a study case was set up aiming at enabling the **EISCAT 3D ESFRI** user community to benefit deploy integrated EGI and EUDAT services for big data management. The study case will demonstrate how **computing and data management services offered by different multidisciplinary e-Infrastructures can be successfully integrated and deployed**.

Documentation activities focused on the definition of integration procedures and other technical documents to support the operations of the EGI Federated Cloud. In addition, as part of the EGI service management best practices, the review of existing Operation Level Agreements[33] started. The first result was the update of the Resource Centre (RC) Operational Level Agreement[34] was already updated and approved by OMB. Additional documentation has been developed to document the process and related procedures for Resource Allocation through the EGI distributed Resource Pool[35].

A new working group on GPGPU integration was launched in September tackling the issue of coherent and standardised means for discovering and accessing GPGPU resources in distributed infrastructures. **This integration will allow GPGPU applications to get access to a wider distributed resource pool instead of having access to a limited set of local GPGPU resources**. Objectives of the working group include the definition of batch System integration best practices, the evaluation and adoption of an appropriate Glue Schema extending the GLUE 2.0 Open Grid Forum standard, GPGPU resource usage accounting, and GPGPU resource availability and reliability testing.

Finally the works of the a task force[36] started in August 2013 with the objective of implementing an **EGI distributed infrastructure based on the "CERN VM File System" technology and integrated with the corresponding infrastructure of OSG**, aiming at streamlining the distribution and deployment of application software across EGI resource centres.

I.2. Main achievements

I.2.1. Security

[30] https://fedoraproject.org/wiki/EPEL

[31] http://www.eudat.eu/

[32] http://envri.eu/

[33] https://wiki.egi.eu/wiki/Documentation#OLA

[34] https://documents.egi.eu/document/31

[35] https://wiki.egi.eu/wiki/Resource_Allocation#Resource_allocation_high_level_process and https://documents.egi.eu/document/2030

[36] https://wiki.egi.eu/wiki/CVMFS_Task_Force

The work of the EGI CSIRT, as ever, is split into several sub-groups, each of which is reported on here. The whole team continues to meet monthly by video conference; in September a security track was organized at the TF 2013[37].

For the Incident Response Task Force (IRTF) four security incidents were handled during the quarter. Three of these were related to stolen ssh passwords, while one was as the result of a brute-force ssh scanner. The IRTF continued to track new security vulnerabilities in operating systems and other non-Grid software, and chase sites that were vulnerable to previously announced problems. A joint security training event and security workshop between EGI and security staff from PRACE and EUDAT was held on 7-9 October 2013 in Linkoping, Sweden. This was a very useful and successful meeting and plans for future closer cooperation on security operations were discussed.

For the "Security Drills" team, a successful training session at the TF 2013 helped a number of other NGIs prepare for their own Security Service Challenge activities. Plans are now well underway for the next NGI Security Service Challenge in Italy.

For the monitoring team, further testing of site-wide monitoring took place at the pilot site (KIT, Germany). The next step will be to deploy more pilot sites allowing a move towards a full deployment across EGI. A new version of Pakiti was deployed with an implementation of better mechanisms for collecting test results from the sites. Currently the probes report to both the old and the new servers. New NAGIOS probes were developed and deployed to monitor new critical vulnerabilities discovered by the Software Vulnerability Group (SVG). A new mechanism for processing data for the dashboard was agreed and when ready this will allow better viewing of security issues in a single place.

Experience in handling vulnerabilities after the end of EMI and IGE shows that the SVG communication and handling procedures are still working well and were not affected by the end of the two projects. No changes to the SVG procedures are needed. The SVG risk assessment team suffers from lack of effort available for performing the risk assessments. During the quarter, 11 new software vulnerabilities were handled, including one critical and 6 high-risk. SVG issued 6 public advisories that went to all EGI sites.

The security assessment of CREAM-CE (grid computing interface) was completed. The vast majority of problems found have now been fixed. The assessment of WMS was performed but the team doing this work were not happy with the results and wish to revisit this. In the meantime work has started on an assessment of UNICORE.

The Emergency Suspension procedures document was finalised and approved by the OMB in its September 2013 meeting. The Italian NGI has successfully deployed an NGI Argus server which is correctly handling the suspended credentials out to Italian sites who also run Argus. The next step is to implement a mechanism for deployment at sites not running Argus.

Many members of the CSIRT team attended the TF 2013 and three security training courses were successfully provided and all security activities (operational and policy) were presented and discussed at an open session. Training was also given at the GridKa school[38] in August. Plans have been made for a number of future training and dissemination events.

[37] http://tf2013.egi.eu

[38] http://gridka-school.scc.kit.edu/2014/

From QR15 the focus of the EGI CSIRT security operations will be the collection of requirements for the secure operations federated clouds in preparation to the production phase of the EGI federated cloud.

I.2.2. Service Deployment and Integration

During this quarter there were a total of three releases: two regarding UMD-3 (3.2.0[39], 3.2.1[40]) and one for UMD-2 (2.7.0[41]). In total 24 products and sub-components were deployed and tested covering not only all of EMI / IGE products but also incorporated a new product team the QCG team[42].

Of note that along this quarter, software staged rollout has to be significantly adapted to the new software distribution approach based on the EPEL repository adopted by many different technology providers after the end of the EMI project. This change in third-party software distribution required changes in the UMD software repository. During this quarter DPM and LFC were the first products to be released into EPEL, followed by gfal.

The planning of the operational integration of the EGI Cloud Infrastructure (currently in its prototype phase) into the Grid production platform started. The first cloud resource centre was successfully certified following the existing quality assurance procedures of EGI.

The collaboration with XSEDE[43] in the USA produced an integration analysis to enable the COMPCHEM and WeNMR VOs on both infrastructures. Integration activities with the EUDAT infrastructure were promoted through a study case (conducted within the ENVRI project) aiming at enabling the EISCAT-3D research infrastructure to benefit from both EGI and EUDAT services for compute and big data management[44].

The readiness of accounting and information publishing for resource centres adopting ARC, UNICORE, QCG and GLOBUS middleware was assessed and the development of documentation[45] for NGIs deploying these middlewares started. Lastly, support on network performance troubleshooting is now provided by the eduPERT[46] team through the EGI helpdesk.

Following a number of pilots, full and transparent interoperability was achieved in October 2013. For this, the WeNMR VO (enmr.eu, mapped to enmr on OSG resources) was enabled in OSG, starting with the resources provided by FERMI lab (fermigrid.fnal.gov). Further actions were undertaken to allow transparent access to OSG resources through the WeNMR community portal. With all this in place, grid jobs can now be submitted using standard EMI middleware and job description language (JDL) from a gLite-based user interface (UI). The software required by the WeNMR services was

[39] http://repository.egi.eu/2013/09/12/release-umd-3-2-0/

[40] http://repository.egi.eu/2013/10/11/release-umd-3-2-1/

[41] http://repository.egi.eu/2013/10/22/release-umd-2-7-0/

[42] http://www.qoscosgrid.org/qcg-packages/sl5/x86_64/

[43] https://wiki.egi.eu/wiki/EGI-XSEDE:Collaboration

[44] https://wiki.egi.eu/wiki/EGI_ENVRI

[45] https://wiki.egi.eu/wiki/MAN09

[46] http://geant3.archive.geant.net/Services/NetworkPerformanceServices/Pages/eduPERT.aspx

automatically deployed from the CVMFS system developed at RAL[47], which is duplicated on US sites through the OASIS system. In that way, all software available on EGI resources through CVMFS becomes automatically available on OSG resources. With all this in place, a number of WeNMR services, including the popular grid-enabled HADDOCK and CS-Rosetta web portals[48], could be put in EGI/OSG production mode, sending jobs to grid resources in a transparent manner, without specifying a-priori on which side of the Atlantic these should run; it is the Workload Management System[49], which decides where to send the jobs based on site availability and rankings defined in the JDL files.

The resource centres of the South African National Grid (SAGrid) have been fully integrated in EGI, opening the way to seamless collaboration between research communities in South Africa and Europe. From now on, the South African and European infrastructures are 100% interoperable and part of the same federated infrastructure. The integration was achieved as part of a long-term collaboration between EGI.eu and the Meraka institute, formalised in a Memorandum of Understanding.

SAGrid, coordinated by the CSIR Meraka Institute, is a collaboration of academic resource centres across South Africa, operating a distributed infrastructure to provide services for South African researchers. From now on, the South African and European infrastructure are completely interoperable and part of the same federated infrastructure. The integration was achieved as part of a long-term collaboration between EGI.eu and the Meraka institute, formalised in a Memorandum of Understanding., with the finalization of the South African Grid integration[50].

I.2.3. Help desk & Support Activities

A new GGUS release was deployed in July and October 2013. Due to the end of EMI and IGE the list of 3rd level middleware support units providing specialized software support, was reviewed and many were decommissioned together with other units that were inactive. Additional support units were added, renamed and others merged, as documented on wiki51.

Grid Oversight

- **Follow-up upgrades of unsupported software** COD is involved in the process of retirement of obsolete middleware like SHA-2 non-compliant middleware. The majority of services were already upgraded, and the decommissioning campaign is ongoing.
- **Quality control.** Since October 2011 COD has been performing quality checks of the support activities conducted nationally by NGIs and developed quality metrics (the ROD performance index) for this. The team is continuing to collect and investigate these metrics. In addition, COD keeps monitoring resource centres providing insufficient performance for three consecutive

[47] http://www.gridpp.ac.uk/wiki/RALnonLHCCVMFS

[48] Wassenaar et al. (2012) J Grid Comp 10:743-767

[49] WMS [Andreetto et al. (2012) J Phys: Conf Ser 396:032021

[50] http://www.egi.eu/news-and-media/newsfeed/news_2013_0044.html

[51] https://wiki.egi.eu/wiki/SA1.6-QR13

months or more. COD regularly issued GGUS tickets to NGIs that do not meet the 99% availability requirement according to the service level targets defined in the Resource Provider OLA. In case of violation, information about the service improvement plans is gathered from the NGIs.

- **"Unknown" probe results.** Monitoring results produced by the monitoring system of EGI (SAM) run at an NGI level can be reported as unknown in case of problems with the execution of tests or the fetching of the test results. The implementation of a Nagios probe that checks the percentage of UNKNOWN test results and raises an alarm in case this percentage exceeds a given threshold was discussed. In addition, COD team has started developing he specifications of a test that will raise alarms on the operations dashboard when the unknown percentage is higher than a certain threshold. This work is in progress.
- **Follow-up NGI Core Services availability.**
- **Review of certification procedures and status attributes in the service registry.** COD team has been developing a procedure to incorporate test resources into the EGI infrastructure, review the certification procedures and to identify possible changes to the operational tools. This discussion is now finished and everything is handled by GOCDB version 5.

Software Support

The task runs smoothly following the procedures established in past. In the reporting period 99 tickets were handled. The number is lower compared to proceeding periods (this is not taking into account the month of August to exclude the summer season). This is a likely indication that the deployed software is getting stable after the end of the EMI and IGE projects, when the pace of development slowed down. Out of those tickets 34% were solved by the software support team, which is a considerably higher ratio than before. The organization of 1st and 2nd line software support during the project extension and afterwards was reviewed. Preliminary work in handling the responsibility of software support to a new consortium of partners as this service is part of the "EGI core activities" and will not be funded in EGI-InSPIRE from May 2014.

Documentation

Documentation activities were focused on integration procedures and other documentation necessary to prepare the production phase of the EGI Federated Cloud.

The existing Operation Level Agreements[52] are being reviewed as part of the service management best practices of EGI, and the Resource Centre OLA[53] was already updated and approved by the OMB. Another documentation area was Resource Allocation were a number of materials were produced to support the implementation of the EGI Resource Pool[54], which allows for the application and allocation of resources through a pool of resources physically distributed but made available centrally through the brokering activity of EGI.eu. Resource application and allocation are supported by the e-

[52] https://wiki.egi.eu/wiki/Documentation#OLA

[53] https://documents.egi.eu/public/ShowDocument?docid=31

[54] https://wiki.egi.eu/wiki/Resource_Allocation

Grant tool (see section 4.1.12). Procedure 06[55] and 09[56] were updated and new temporary procedure 18[57] has been created to support Cloud resources integration to production infrastructure.

NGI User Support

NGI_CH. NGI_CH user support activities for new communities focused on the following main streams:

- Support to the DEWA/GRID-Geneva group[58] for enabling the SWAT hydrological model on a federated cloud infrastructure. The plan is to integrate the use case as part of the supported portfolio at the national level first, and then link it to the EGI FedCloud infrastructure.
- Support to the SwissExperiment project[59] for extending the current supported use-case on the national cloud infrastructure. The requirement for the extended use case will call for a larger number of resources than those available at the national level; the EGI FedCloud infrastructure will be explored.
- Follow up on the activities in Chemistry, Molecular & Materials Science and Technology Virtual Team
- Continued the effort in the national cloud strategy group aimed to establish and academic national cloud infrastructure. The outcome of this strategy should harmonize with the European cloud infrastructure roadmap that is also one of the targets of EGI.
- Continued the implementation of the Community Distributed Support model: contacts and site visits with 2 institutes (EPFL and UZH).

NGI_SK. The NGI_SK provided the expertise and continued support for current and new grid users in the process of developing and running their applications on both national HPC clusters and the Grid infrastructure. Particularly, our activities covered the support in porting and running the next applications: FDS (Fire Dynamics Simulator) model, WRF (Weather Research and Forecasting) model version 3.5 including also pre- and post-processing tools, EPANET model (simulator of hydraulic and water quality behaviour within pressurized pipe networks), software programs for speech recognition, and application of genetic algorithm PAGASOS used in nanostructure simulations. The main focus was imposed on running parallel MPI models; we followed constantly the latest technical developments made in EMI middleware concerning this issue.

NGI_AEGIS. NGI_AEGIS User Support Team continued successful user support throughout this quarter. As a part of our activities, together with Serbian chemistry community, we updated the software packages deployed on AEGIS01-IPB-SCL site to their latest versions: OpenEye's application SZMAP and an electronic structure program package ORCA. In addition to that, NAMD 2.8 compiled

[55] https://wiki.egi.eu/wiki/PROC06

[56] https://wiki.egi.eu/wiki/PROC09

[57] https://wiki.egi.eu/wiki/PROC18

[58] http://www.grid.unep.ch/

[59] http://www.swiss-experiment.ch/

with PLUMED plugin was added to the software stack. PLUMED is an open source plugin for free energy calculations in molecular systems. NGI_AEGIS Helpdesk[60] and NGI_AEGIS website[61] have been regularly maintained and we continued to participate in tests of GGUS and NGI_AEGIS Helpdesk interface (after the new release of GGUS portal). Scientific Computing Laboratory of Institute of Physics Belgrade that hosts AEGIS01-IPB-SCL resource centre (and NGI_AEGIS core services) had a major infrastructure upgrade in which new cooling system was installed and all machines were moved to new water-cooled racks so that functioning of NGI_AEGIS Grid services is now even more reliable with the perspective of their expansion in the near future.

NGI_IT. NGI_IT user support activities for new communities focused on the following main streams:

- Support to the BioComputing Group of the Bologna University, Italy: support was provided to create and run a computing model for a use case based on the BLAST application for sequence alignment, 17 million sequences aligned all-against-all. The production, started in previous PQs, has been completed during PQ14 and the entire output (more than 4 TB) has been retrieved by the community for analysis.
- Establishing contacts and support activities for the DRIHM.eu project (hydro-meteorology): during PQ14 support was provided to run the parallel version of the WRF model to the EGI infrastructure, in particular to some NGI_IT sites supporting MPICH. Porting implied the use of the DRIHM applications software repository. Effort was spent to improve the entire EGI testbed in supporting the community, in particular tests were performed (and GGUS tickets created) in order to fix authentication problems at some testbed sites.
- Support to the COMPCHEM VO: different user support activities have been carried out. In particular application porting and computing model creation for two packages: CRYSTAL (a quantum chemistry ab initio program, designed primarily for calculations on crystals, slabs and polymer sand) and VENUS (it calculates the trajectory for two reactants, atoms or molecules, by integrating the Hamilton equation in Cartesian coordinates).
- Coordination and management activities related to the creation of a virtual research community out of the existing Chemistry, Molecular & Materials Science and Technology oriented EGI VOs - see the section about CMMST Virtual Team.
- Participation to the EGI-XSEDE interoperability project where collaborative use cases activities have been provided in collaboration with the COMPCHEM VO.
- The INFN-SPES experiment at the Legnaro National Laboratories, in Legnaro, Padova - the community requested the porting of the FLUKA MonteCarlo application to the NGI_IT resources. Fluka has been ported to the NGI_IT infrastructure and submissions are perfumed through the DIRAC service. A web interface has been created on the IGI portal as frontend for the users.
- Collaboration with the Bologna University, Department of Physics and with the National Research Council, Institute for Microelectronics and Microsystems (CNR-IMM), to create the distributed computing model for two applications: DMRG (self-developed quantum simulation) and QUANTUM_ESPRESSO. The porting for the first application has been completed and a frontend though the IGI-Portal has been created.

[60] https://helpdesk.aegis.rs/

[61] http://www.aegis.rs/

- Created a new collaboration with the National Research Council, Institute for Biotechnologies (CNR-ITB) to run an HPC on the CLOUD use case based on the AMBER application (classical dynamics molecular simulator) to be run on parallel virtual machines equipped with high quantity of RAM.
- Another use case provided by the CNR-ITB is based on a mixed cloud/grid computing model based on a molecular surface modelling applications that we are trying to address with the WNODES service.
- KM3NET project: trying to follow the initial contacts that we had during the presentation of the NGI_IT infrastructure during a community collaboration meeting.
- Organization of a Tutorial Workshop on Grid Application Porting for Computational Chemistry and Astronomy and Astrophysics national communities: it will focus on the porting of real life applications and the creation of computing model on the EGI infrastructure. It will be held in Rome, hosted by Consortium GARR for a selected number of research groups
- Participation to CVMFS task force[62] for the setup and testing of the software distribution infrastructure for the following VO: GRIDIT (the Italian national catch all VO), superb and ARGO.

NGI_IBERGRID. User support activities for new communities focused on the following main streams.

- Preparation of a tutorial for the Biophysics community:
  - Focus on running GROMACS application via WeNMR Portal, the DIRAC IBERGRID portal and user client tools.
  - Development of Py4Grid toolkit for the abstraction of command line tool complexity.
- Support to the EGI champions scheme on using the EGI infrastructure and associated portals and gateways.
- Support to the EGI champions scheme on producing dissemination material.

NGI_FR. The France Grilles 'Services to the end users' catalogue[63] is online in French and in accessible in English language.

NGI_CZ. The Belle Montecarlo Challenge finished, results were reported by the Belle representative at the CHEP conference and will be further discussed at the Belle Computing meeting in November. Performance of the DIRAC File Catalogue (DFC) and LFC was compared in the test and the first results shown at EGI TF 2013. Migration for the VO auger will be suggested with possible realisation in 2014.

NGI_CY. Training of new users that are going to use grid to run Computational Physics experiments was performed. The application used by new users is AMIAS (Athens Model Independent Analysis Scheme), it is about stochastic procedures for the statistical analysis of Random Transform from CT-scans simulations, and relies on Monte Carlo and other simulation techniques.

[62] https://wiki.egi.eu/wiki/CVMFS_Task_Force

[63] http://www.france-grilles.fr/-Offre-de-service-?lang=en

NGI_BG. The user support established contact with research groups from Bulgarian Academy of Sciences and University of Architecture, Civil Engineering and Geodesy. The testing installation of OpenStack cloud middleware was performed and induction training of researchers from the domain of Financial Mathematics was given.

NGI_ARMGRID. NGI is developing a portal for quantum physics applications.

I.2.4. Infrastructure Services

Messaging. Cleaning of unused queues on all brokers was performed. Initial plans were prepared for the removal of CERN brokers from the ActiveMQ network in preparation to the new messaging broker infrastructure that will be in place from May 2014. Migration is critical because it has to be performed before the start of the migration of the SAM central services, who will also be provided by a new consortium of partners as of May 2014.

GOCDB. The new GOCDB version 5 was deployed to production on October 2nd.

Operations Portal. The development of the new Availability and Reliability calculations continued and activities concentrated on the provisioning of the features requested by the new mini-project "A new approach to Computing Availability and Reliability Reports".

SAM. As a result of the bidding process for hosting EGI core activities that started in July 2013, Service Availability Monitoring central services – currently operated at CERN – are being migrated to a new consortium of service providers. Planning of the migration started in September 2013. In order to achievea smooth transition, new instances are being prepared in order to have the infrastructure ready by May 2014. Several meetings were held between new partners and CERN team to plan this.

SAM Update-22 was deployed on the central SAM-GridMon on October 1st, followed by staged rollout. SAM Update-22 was released for production deployment on October the 28th.

The central monitoring service “midmon” responsible for the central monitoring of services and various capabilities, was extended with a new set of tests to monitor the compliance of middleware to to SHA-2 certificates.

Accounting. The leadership of accounting development activities was handed by Alison Packer/STFC to Stuart Pullinger/STFC.

The integration of the accounting infrastructure with middleware was progressing this quarter. Accounting team assisted the developers of the JURA product for ARC middleware. Now it is in production at several sites. In parallel the team was involved in assisting the QCG developers to create APEL compatible accounting software for QCG and test it. QCG accounting is now in production in two Resource Centres and more sites will be upgraded by the Polish NGI.

Publishing of accounting data from Globus was successfully tested; this required changes to the code and database schema, as reported below. The UNICORE developers’ team was also supported with accounting documentation. Accounting of Desktop Grids is now in production.

The accounting team is supporting Resource Centres in their migrating from EMI2 APEL to EMI3 APEL. There is also work done in assisting two partners with the testing of the Regional APEL Server.

For parallel job accounting, data has been provided to the developers of the Accounting Portal, so that work can now focus on the visualisation part. The submission of data via the message broker network will be tested in QR15.

Development of Cloud Accounting is in progress. In particular, the semantics of the accounting record fields for various cloud stacks are being defined. New sites are now publishing cloud accounting data in preparation to the start of the production activities.

The Accounting Portal team is working on a dump of storage accounting data from the storage accounting database, for the definition of the visualization part. The development of application usage accounting is in progress, the plan is to have a development version for testing in QR15. Work will be needed to create a message format for this data and to identify sites to test the system.

Several network problems at the site hosting the central accounting databases have affected the availability of the accounting service this quarter. No data has been lost but some processing of accounting records has been delayed. More downtimes/outages are expected in QR15 as the networking infrastructure is moved to a more reliable configuration and new hardware.

Availability and Reliability reporting. Availability reports were generated as usual on a monthly basis. Publication of results and re-computation requests regarding Availability and Reliability results were handled by the SLM unit via GGUS.

Catch all operations services. The migration of the VO membership service for DTEAM (the testing VO) from VOMRS to the latest EMI-3 VOMS was completed in Sep 2013 according to the technical implementation plan defined in September. One minor bug regarding the notification mechanism of VOMS was identified on the production instance. The VOMS development team was notified and the bug has been accepted for fixing.

The EGI catch-all CA tested the issuing of SHA-2 end entity certificates successfully and is thus complying to the EUGridPMA official roadmap concerning the preparation of the migration to SHA-2. The site certification technical services were upgraded. In particular, new core Top-BDII and WMS services were setup while older instances were retired. Also the code running on site-certification.egi.eu has been maintained and updated.

Maintenance operations on “midmon” (the dedicated SAM instance used for monitoring of running middleware versions on sites) were applied. Also several new probes were added to enable and assist the campaign for unsupported middleware service instances. Setting up of a new security Nagios server based on SAM-Update-22 has also begun. Currently this is in testing phase.

I.2.5. Tool Maintenance and Development

JRA1 carried out a series of tool roadmap reviews in order to have a whole and up-to-date picture of the operational tools evolution and to identify possible criticality that could hinder the accomplishment of the JRA1 PY4 objectives. A document, containing this overall picture of the operational tools roadmap, is now available in the document server[64]. The document is updated monthly to always present an up to date picture of the development roadmap.

In October a meeting was organized to discuss the tool development roadmap after 2014 in Horizon 2020[65].

GOCDB. The development and testing of release version 5.0 was completed. GCDB v5 was rolled to production on October 02. GOCDB v5 supports multiple databases (MySQL, Oracle, SQLite, etc) and, moreover, provides users with new interesting features.

- Scoping enhancements:
  - Support for multiple scope tags (EGI, Local, CLIP, EGI_TEST) ;
  - Scope tags help organise resources (NGIs, Sites, SEs, SGs) into categories (a tag-cloud);
  - New tags added by administrators on request (avoids proliferation);
  - Users tag their own resources with one or more scope-tags;
- Multiple Projects: this features allows the registration of entities and services belonging to different infrastructures ("projects" according to the GOCDB conceptual model) in a single GOCDB instance.
  - Projects aggregate NGIs (one project so far: 'EGI');
  - A single NGI can be grouped by multiple projects;
  - Projects are used to cascade project-level user permissions over child NGIs;
- Administration Interface
- Authentication Abstractions:
  - A requirement for other projects to support different authentication mechanisms in addition to X.509 certificates (e.g. for the EUDAT project).

The list of GOCDB developments completed in the quarter includes:

- the acceptance testing of GOCDB v5;
- the addition of new monitoring scripts;
- the addition of audit tables and change log tables;
- GOCDBv5 account retrieval;
- v5 related developments and testing;
- GOCDB mini-project for scoping extensions and the admin interface. The developments from this mini-project were integrated into the GOCDB v5 release;
- the installation of a new GOCDB failover instance at Daresbury Labs[66];
- the rolling to production of GOCDBv5.

[64] https://documents.egi.eu/document/1997

[65] https://indico.egi.eu/indico/conferenceDisplay.py?confId=1890

[66] https://goc.dl.ac.uk

Operations Portal. The Operations Portal team concentrated its effort on the refactoring of the portal, already started in QR13 (note: as of QR13 only software maintenance is funded). Aim of this activity is to replace the heterogeneous JavaScript libraries by the use of a standard one: jQuery. According to the current activity plan, the different interfaces and "look and feel" will be harmonized with the help of the bootstrap framework. The global performances and display will be improved and minor bugs will be corrected.

Different data exports (like csv, json) will be supported. We will also work with the use of bootstrap on the development of a tool version for mobile devices.

The list of completed tasks includes[67]: the refactoring of the Broadcast; the partial refactoring of the Dashboard and the COD dashboard; the data export in different formats like csv and json; the development of a tablet/mobile version with the use of bootstrap.

Service Availability Monitor (SAM). The validation of SAM Update 22 was completed. This activity was followed by the staged deployment of the new software version following the release on the 28th October. The main feature of Update 22 is the integration of EMI service probes, which involved:

- a major repackaging of SAM and developments necessary to adopt new libraries (from EPEL),
- the mapping of the new EMI probes to the current EGI monitoring metrics, and the assessment of the impact on the EGI monitoring statistics,
- the coordination of probe development activities with EMI[68] and helping with the testing of probes in an integrated environment by establishing a dedicated testbed,
- minor changes and softare fixes in all the components as required by the integration.

Prior to the start of the staged rollout of the new software release, a testing campaign was organized. Several national infrastructures volunteered to join and provided excellent feedback and at the same time helped to identify several critical issues in the release. This significantly contributed to reduce the effort to successfully complete the staged rollout and the time to release of the update.

The interaction of SAM with the GOCDB v5 release was tested, this allowed to identify issues with the backward compatibility of the new API. Extensive testing of the critical SAM components facilitated the smooth transition to the new GOCDB version.

The SAM product team also investigated and identified what needs to be done in order to develop a failsafe feature on the msg-to-handler component that will allow the probe to switch to using another broker instance in case the first attempted delivery has failed. The koji building infrastructure was also reorganized in order to better handle nightly validation building purposes.

Finally, the preparation of the migration of SAM central services from CERN to IN2P3 started.

EGI Helpdesk (GGUS)

One major release was delivered in this quarter. In preparation to this release, the following activities were performed.

[67] http://operations-portal.egi.eu/next

[68] https://twiki.cern.ch/twiki/bin/view/EMI/NagiosServerEMITestbed0022012

The description of the main activities performed follows in brief:

- GGUS structure:
  - Decommissioned support units:
    - Condor Utils;
    - ETICS;
    - Torque Utils;
  - Renamed support unit category:
    - “Other Grids" to "Other Infrastructures";
  - Added new support units:
    - IDGF;
    - CVMFS;
  - GGUS web portal:
  - New "Did you knows?" about the following topic: "Duplicate ticket";
  - Display the quality of service of the support units on an info page at the portal;
  - Removed Type of Problem "Batch";
  - Added the attribute "Ticket priority" to the XML output of the search results;
- GGUS system:
  - Adapted the synchronization with GOCDB according to the changed PI;
- Interfaces with other ticketing systems:
  - Further improvements to the GGUS-SNOW interface.

Accounting Repository

CPU Accounting:

- JURA: assisted the JURA developers to create APEL compatible accounting software for ARC and test it. Now in production at several sites;
- QCG: assisted the QCG developers to create APEL compatible accounting software for QCG and test it. QCG is now in production at 2 sites and we are working with the Polish NGI to add more sites;
- Accounting data from Globus successfully tested (required changes to the code and database schema);
- Implemented an updated version of the Aggregated Usage Records (AUR). Now in test;
- Assisting Unicore team with documentation;
- EDGI (Desktop Grids) now in production;
- We are continuing to assist sites migrating from EMI2 APEL to EMI3 APEL;
- We are assisting 2 sites to test the Regional APEL Server.

MPI Accounting

- Data has been provided to the portal so that they can work on visualisation. Intend to test sending data regularly via the message broker network in the next quarter.

Cloud Accounting

- Discussions to agree semantics of accounting record fields with various VM systems;
- New sites now publishing cloud accounting data.

Storage Accounting

- The portal team now has a dump of the data from the storage accounting database so that they can start work on visualising the data.

Application Accounting

- We are continuing to assist in the development of an application accounting system and hope to test a development version in the next quarter. Work will be needed to create a message format for this data and to identify sites to test the system.

Accounting Portal

Below the list of the main activities performed:

- Security work;
- Regionalization Gold VM;
- Changes for new accounting;
- First implementation for cost accounting on Cloud;
- Monetary cost computation for cloud view;
- Talk in the TF about Regional Portal;
- Further Core refactoring;
- OOP migration;
- Regionalization improvements;
- UserDN SAM probe deployed in production;
- Cloud accounting fourth iteration, meetings;
- Schema adaptations for cloud;
- Revised codebase for new accounting;
- Changes for new accounting;
- Work on summary view;

Metrics Portal

Below the list of the main activities performed:

- Fixed user interface bugs on chrome;
- Changes in quarterly views and Excel reports;
- Redundant tickets view removed;
- Fixed problem with history view;
- Changes in the authentication system.;
- Changes for QR14;
- Changes on project metrics;
- Deprecation of project metrics.

I.3. Issues and Mitigation

I.3.1. ActiveMQ broker and SAM migration to new partners

The preparation of the migration of the messaging infrastructure – of which one server hosted by CERN needs to be switched off and migrated to a new provider – started in this quarter and will continue in QR14. This preparatory work was needed to ensure a smooth transition as of May 2014.

In general the whole set of SAM backend services and front-end portals will have to be migrated to a different consortium (CERN did not express interest in continuing the service from May 01 2014 as core activity).

Mitigation: the planning of technical migration of services started in September 2013 and is in still in progress.

I.4. Plans for the next period

I.4.1. Operations

Security

During the next quarter, the EGI CSIRT team will continue to work on all if its current activities in the same sub-groups. A face to face meeting of the whole team will be held in The Netherlands on 2-3 December 2013. This will enable us to review all our plans for 2014, including the security implications of new services, such as federated cloud services and Globus Online.

Apart from the usual on-going regular operational duties, the following items are mentioned.

- For IRTF, planning will continue for incident handling beyond the end of EGI-InSPIRE. Joint discussions on this topic with PRACE and EUDAT will continue.
- For the Security Drills team, the Italian NGI will participate to the national security service challenge. Plans will be made for the next set of NGI SSC's.
- Following the evaluation of pilot deployments of the site-wide Pakiti installation, a full-blown proposal for its deployment in EGI will be provided. We will finish the mechanism for better processing and aggregation of results produced by Pakiti and Nagios, which will limit the number of false-positive alerts.
- SVG will prepare a report on the vulnerability assessments that have happened, referring back to the original plans made in early 2011. It should be noted that all the software which was planned to be assessed in this original plan has had their assessments completed or they are currently in progress. Plans will be made for which pieces of software should have priority for the future, assuming this activity is able continue. This will probably include one or more of Data Management and software enabling cloud federation. Engagement with the EGI Federated cloud team is required, including invitations to join the RAT.
- Work will continue on the deployment and testing of the Emergency Suspension mechanisms, including to sites and NGIs who do not (yet) run the ARGUS authorization service. This work is needed to provide mechanisms to enforce the policy for Compromised Certificates and Central Security Emergency suspension.

- Various security training courses will be given. Italy, Prague and DFN are currently being planned. Plans will also be made for a security workshop at ISGC 2014 in Taipei (March 2014)[69].
- Work will continue on forming a better understanding of the requirements for security in federated clouds. A security threat risk assessment for federated clouds is required and is scheduled for either QR15 or QR16.

Service Deployment and Integration

The most important issue for the next quarter will be on how to improve the software provisioning process and the process for staged rollout in order to handle the way product teams deploys the new software. Mechanisms to integrated user community tests into the process will be investigated. The interoperability of the ARGUS authorization service will also be tested.

During next quarter integration activities will be focused on on-going EGI Cloud, XSEDE and EUDAT integration. It is also planned to integrate Desktop Grid resources as infrastructure represented as separate Operation Centre.

Operational tools

- Deployment of the Operations Portal with the new Availability/Reliability calculations is expected by the end of the year.
- Once the bidding process is finished migration of ActiveMQ brokers and central SAM services will begin. In order to achieve smooth transition new services should be deployed in the following quarter.

Accounting

- Continue moving cloud accounting to production and review of the existing sites data for conformance to schema.
- Move accounting of GLOBUS services to production.
- Test of the submission of MPI data to the accounting portal via SSM and the message brokers.
- Consider the adoption of the new OGF Usage Record standard.
- Start storage accounting deployment at production sites.
- Start campaign on EMI2-3 migration.

Helpdesk

- Integration of Operations Portal in GGUS. This action is postponed as requested by Operations Portal admins.
- Implement alarm process through GGUS in case of failures of the operational tools for an improved set of service management best practices.
- Implement work flow for tickets needing information about UMD releases when an issue was solved by Product Teams.
- Migrate GGUS to the xGUS framework
- Shibboleth authentication
- Finalize the fail safe architecture
- Implement a bulk ticket submit feature.

[69] http://indico3.twgrid.org/indico/conferenceDisplay.py?ovw=True&confId=513

Grid Oversight
Grid Oversight task will continue the activities that already performed. The evolution of the technical activities conducted by the Grid Oversight team was already discussed and proposed in PY3[70]. Some changes were implemented in the coming quarter, including the stop of the monthly follow up of NGIs failing minimum availability thresholds. This activity will continue but focusing on NGIs with repeated performance problems with the objective of providing technical support to these NGIs.

I.4.2. Tool Maintenance and Development

GOCDB
- Closely monitor GOCDBv5 and fix newly emerging bugs;
- Update the GOCDB documentation and tag/package a v5 release for public download;
- Deploy GOCDBv5.1 to the GOCDB test instance (https://gocdb-test.esc.rl.ac.uk) which includes a new extensibility mechanism (custom key-value pair property bags);
- Prototype a new 'get_glue2_services' method for rendering GOCDB services and downtimes in Glue2 XML. Deploy to test instance.
- Add charging attributes to site or use extensibility mechanism.
- Operational support.

Operations Portal

The product team will achieve the different refactoring and release a production version. A new feature providing the VO security contact list with the possibility to contact them will be also added into the portal.

Service Availability Monitor (SAM)

A general direction of the development will focus on the maintenance and bug fixing of the existing components. Work started on SAM Update 22.1 and its main focus is on bug fixing identified during the deployment of SAM Update 22 and during the extended validation phase.

The main objective for the next quarter is to finalize technical documentation necessary for the migration of SAM central services as well as to organize (or attend) a workshop on the topic to agree on the final scope and timeline of its implementation.

EGI Helpdesk (GGUS)
- Implement a bulk submit feature.
- Integration of support unit for EDUPERT.
- Fully integrate CMS VO in GGUS and decommission interface to Savannah.
- Migration of the GGUS shopping list from Savannah to JIRA.
- Notification of failures of operational tools through GGUS.
- Migration of GGUS web frontend to the xGUS framework.
- Enable shibboleth authentication.
- Finalize fail safe architecture.
- Start implementation of interface to XSEDE.

Accounting repository (APEL)

[70] https://documents.egi.eu/public/ShowDocument?docid=1529

- Continue moving cloud accounting to production. Review existing sites data for conformance to schema
- Move Globus accounting to production
- Test sending MPI data to portal via SSM and the message brokers
- Consider OGF Usage Record standard adoption
- Start storage accounting deployment at real sites
- Start campaign on EMI2-3 migration

Accounting portal

- MPI accounting view
- Storage accounting view
- New Inter-NGI accounting information visualization features
- Updates from scientific-discipline-classification VT
- New XML endpoint format

Metrics portal

- Authentication improvements
- Cross-browser integration
- New metrics implementation
- Promote better infosis publication

I.5. NGI Operations Activity Reports

NGI PQ14 operations reports are available from https://documents.egi.eu/document/2006.

I.6. Summary

SA2 continued to provide updates to the Unified Middleware Distribution (UMD) as man activity. Many aspects of the workflow have been modified to adapt the process to the new release methods adopted by the product teams.

Some product teams are now in a mixed situation where most of the packages are released only in the Fedora community (EPEL) repositories, and few sub components, such as the configuration modules, are still distributed in the EMI ones. Pulling these products in the UMD workflow requires particular attention, and some changes in the process entail additional effort for the SA2 team. As the team gets familiar with the new process and the possible problems, the effort required to handle new releases is expected to return to normal.

During the quarter **quality criteria for the UMD components have been updated** with a new release of the quality criteria document. The new document[71] contains a reduced set of core criteria, simplified to make verification lean, compensating for the increased number of components included in UMD. This new version of the document was defined so that it can be used by external verifiers, not part of the SA2 team, this redesign includes also simplified templates to fill.

The verification testbed has been extended to support the **testing of compliance to the IPv6 protocol**, and starting from the last month of the quarter all the products verified have been tested against IPv6. The results are published in a wiki page[72]. During the quarter a total of 63 products have been verified.

Two minor updates, one for UMD-2 and one for UMD-3, and three revision updates have been released during PQ14. The UMD-3 minor update included the first release of the full QCG middleware stack in UMD. The revision updates were released to fix security vulnerabilities or to solve dependencies issues in the repository. With the UMD 2.3.0 release all the existing products in UMD support SHA-2 certificates.

UMD-2, after the end of the quarter, will be considered in security support only: this will allow SA2 and early adopters to concentrate the effort on the UMD-3 updates.

The UMD Release Team meeting continued regularly, twice a month, maintaining active the communications with the product teams.

I.7. Main Achievements

I.7.1. Quality Criteria

SA2.2 has finished the 6th release of the Quality Criteria[73] document during this quarter. This version is now ready to be used in verification by the SA2.3 team for the products entering the EGI software workflow or by external verifiers. QCv6 simplifies the verification process by reducing the previous list of criteria to a core set of generic criteria that assure the minimum quality requirements for the

[71] https://wiki.egi.eu/wiki/EGI_Quality_Criteria_Verification#Reference_Documents

[72] https://wiki.egi.eu/wiki/Middleware_products_verified_for_the_support_of_IPv6

[73] http://egi-qc.github.io/

products to be used in EGI's infrastructure (dealing with documentation, security, information publishing, accounting, monitoring and support) and a wiki[74] with the list of specific tests that should be performed for each product. A complementary wiki page[75] with information on testing generic criteria and a git repository[76] with sample tests for the products is also available. The team has also created a simplified verification template[77] that covers all the products (so the mapping is no longer needed) and updated the verification guideline[78] with the changes and instructions for the verifiers.

I.7.2. Criteria Verification

During the last quarter SA2.3 team has changed SA2 network testbed configuration to support IPv6. The new VMs instantiated during verification process have IPv6 public addresses by default. The new configuration allows to EGI verifiers to detect issues related with TP services or if the UMD middleware is not IPv6 compliant. RC_tester, the tool used by SA2.3 team to detect repository dependencies issues before an UMD release, was also modified. The new script was rewritten in python and now is available from github[79], the new script is now included into each VM after each instantiation. The code was improved to generate new logs and to detect automatically the Operating System, the logs are reviewed and submitted to SA2 mailing list after each release candidate to avoid any repository inconsistence.
During the last quarter a total of 63 products were verified (without any product rejection).

I.7.3. Support Infrastructure

During QR13 TSA2.4 continued to support SA2 software provisioning activities as usual. Table 1 shows the updates that have been released in UMD during the quarter.

Release	Date	Type	Content
UMD 2.7.0	22/10/2013	Minor release	The release contains updates for the following components: • BDII-TOP • BDII-CORE • DPM • GSISSH • CREAM-GE
UMD 2.7.1	30/10/2013	Revision release	The release fixes dependencies issue for the component: • BDII Top

[74] http://wiki.egi.eu/wiki/EGI_QC6_Specific

[75] https://wiki.egi.eu/wiki/EGI_QC6_Testing

[76] https://github.com/egi-qc/qc-tests

[77] https://documents.egi.eu/document/1993

[78] https://wiki.egi.eu/wiki/EGI_Verifier_Guideline_QC6

[79] https://github.com/alvarosimon/RC_tester

UMD 2.7.2	1/11/2013	Revision release	The release fixes dependencies issue for the components: • BDII Site
UMD 3.2.0	11/10/2013	Minor release	The release contains updates for the following components: • APEL • Argus • BDII Site • BDII Top • BDII core • BLAH • Cream-GE • Cream • EMI UI • Emir • Glexec • GridFTP • Gridsite • Gridway • LB • Unicore-X6 • Yaim-core • WMS The release contains the following new components: • dCacheQCG ntf • QCG comp • QCG accounting • QCG broker client • QCG broker
UMD 3.2.1	12/09/2013	Revision release	The release contains updates for the following components: • StoRM

Table 1: UMD updates released during PQ14

In addition to UMD updates, SA2 processed also one release of the Service Availability Monitoring released at the end of the quarter: SAM 22.

During PQ13 TSA2.4 performed regular maintenance and upgrade of the EGI instances of the Stratuslab marketplace[80] and appliance repository[81] to be used by TSA2.3 in a pilot service that will offer virtual machines with preinstalled middleware services.

2.1.1.1. Repository Front End Activities

- Admin support for the web front end (wordpress upgrades, minor changes in the content)
- Minor bug fixes and enhancements (support for the display version feature) for the rss plugin

2.1.1.2. Repository Backend Activities

- Regular maintenance and operation.

2.1.1.3. Repository Statistics

- Regular maintenance and operation.

2.1.1.4. IT support and RT Activities

- Maintenance of the EGI web site
- Updated the look and feel of the EGI web site
- Monthly updates of inspire-members list from PPT
- Implemented deletion of user for EGI SSO
- Ongoing backoffice administration, maintenance and user support.
- Added Support for EPEL repositories in the bouncer

I.8. Issues and Mitigation

I.8.1. End of the European Middleware projects and scattered software repositories

The URT meetings proved to be an effective communication channel between EGI and the product teams, and also among product teams. The lack of coordination after the end of the European middleware projects (EMI, IGE) have been effectively compensated.

An indirect consequence of the end of the EMI project, changes in the release workflow of the product teams were applied: now UMD has to deal with several repositories. The UMD tools have been generalized to deal with the new scenario.

I.9. Plans for the next period

SA2.2 will start the production of the Quality Criteria document version 7, focusing on automating the verification process as much as possible by creating tests that can be executed without manual intervention. SA2.2 will also steer and guide any external teams that perform the verification of selected software products.

SA2.3 will integrate the new QCv6 procedure to verify the new TP releases in the next quarter. SA2.3 verifiers will start to use the new Quality Criteria to simplify verification process. Besides SA2.3 team will continue with RC tester improvements to detect any software package issue during UMD repository creation.

[80] http://marketplace.egi.eu

[81] https://appliance-repo.egi.eu/

I.10. Summary

During PQ14, NA2 has continued its pursuit in communicating the latest developments, services and solutions to both targeted and widespread audiences. Strategic planning has also been a key focus. This includes outreach to user communities, both current and new.

Each task of NA2 and team members played a major role in the second EGI conference, the TF 2013 contributing to the organisation, programme development as well as leadership roles in a variety of sessions.

The Communications team has produced a number of promotional messages through the external articles, the EGI website and social media and authored the latest issue of the EGI Inspired newsletter. The team has ensured EGI presence in external events and have recently taken ownership of the Human Networks activity.

The Strategy and Policy team has focus its efforts in solidifying collaboration opportunities with Helix Nebula leading to technical development achieves and with OpenAIRE to ensure EGI publications are promoted. The 2nd edition of the EGI Compendium[82] was finalised and published during the quarter as well as a variety of EGI and external publications around topics such as service management and achievements in ongoing collaborations. Progress has also been made on implementing IT Service Management within EGI.eu starting with an approved policy statement and implementation of FitSM requirements documented in a dedicated implementation plan. Five members of EGI.eu were also certified in first FitSM Foundation training. Security policy work has also focused on the sustainability of security activities beyond EGI-InSPIRE and has continued collaboration with EUDAT, PRACE and XSEDE and IGTF.

The Technical Outreach to New Communities task made good progress on a number of fronts. Two of the Virtual Team projects finished: **Technology study for the Cherenkov Telescope Array** (focusing on gateway requirements and Single Sign On)[83] and Collaboration between EGI/NGIs and ESFRI project **ELIXIR**[84] (aiming at defining a map of collaborations between ELIXIR Head Nodes and NGIs). The final reports of these VTs will be published in PQ15. These support activities are complemented by support actions to the LifeWatch and EISCAT-3D ESFRIs that were run in the framework of the EGI Federated Cloud. A large number of user communities and projects are participating to the definition of Proof of Concepts for the deployment of the EGI Federated Cloud, including: ATLAS, BioVel, BSIM, CLARIN, DIRAC, ENVRI, ESA, GEO, PeachNote, SCI-BUS, VERCE, We-NMR[85].

The EGI.eu team setup a survey and initiated a series of teleconferences for the NGI International Liaisons to define the **EGI Distributed Competence Centre**, assess status of engagement with new

[82] http://www.egi.eu/news-and-media/publications/#compendium

[83] https://wiki.egi.eu/wiki/VT_Technology_study_for_CTA\

[84] https://wiki.egi.eu/wiki/VT_ELIXIR

[85] http://go.egi.eu/poc

users at the NGI level and prepare to the EGI Towards Horizon2020 workshop[86]. The EGI AppDB has been extended to allow users of the EGI Federated Cloud to create, publish, enable/disable, archive and delete Virtual Appliances.

The role of the **EGI Champions** has continued to evolve and their impact and value is becoming increasingly evident as they become the long arm of EGI that is reaching into the core of scientific communities, also participating to the Programme Committee activities for the EGI Community Forum 2014. Each of the Champions has been delivering presentations and contributions in conferences and events within their own scientific fields but in line with their Champion role, they have enhanced their presentations with explanations of the EGI resources that are available to support research, and how they have used these resources to underpin their own work and achievements. As such, it is clear that Champions need to be recruited from a diverse range of fields, especially those scientific areas where EGI may have strategic reasons for engagement.

The work for the organization of the EGI Community Forum 2014 started with the establishment of the Local Organizers Committee.

[86] https://indico.egi.eu/indico/conferenceDisplay.py?confId=1893

I.11. Main Achievements

I.11.1. Marketing & Communication

One of the main activities for the Communications team was the TF 2013. The team was involved in the Local Organizing Committee before the event as well as running a successful session aimed at engaging with the NGI International Liaisons (NILs). The team worked with two PhD students, funded by EGI to attend the TF 2013, to have them blog from the event[87]. The team used the week to have face-to-face discussions with various members of the community including ER-Flow[88], the International Desktop Grid Federation[89], VisIVO[90] and others to help build relationships and plan future EGI activities around them. As part of these discussions the team is already working with the Swiss and Portuguese NGIs to improve their websites. The team is contributing to the organization of the upcoming event in 2014, the EGI Community Forum in Helsinki.

Alongside the TF 2013 the Communications Team attended the CloudWATCH[91] kick-off meeting, the e-ScienceTalk[92] final review, the 5th European Innovation Summit[93]. The team has been working on EGI's presence at two major events in November, ICT2013[94] in Vilnius and SC'13[95] in Denver. Connected with this, the team added subtitles to the Stories from the Grid videos to make their use easier at external events.

The Communications team is now responsible for the communications supporting the four Human Networks (NILs, Research Champions, Technology Champions and the NGI Operations Managers).

The Communications team has been working on improving the organisations' activity of various social media platforms[96]. This has included:

- Implementing a posting and interaction schedule
- Moving to using Hootsuite[97] to help manage this
- Working with the user support technical team to edit and upload the webinar programme to YouTube[98]
- Adding the EGI Solutions to LinkedIn[99]

[87] http://www.egi.eu/blog/tags/tf13

[88] http://www.erflow.eu/

[89] http://desktopgridfederation.org/

[90] http://visivo.oact.inaf.it

[91] http://www.cloudwatchhub.eu/

[92] http://www.e-sciencetalk.org/

[93] http://www.knowledge4innovation.eu/5th-european-innovation-summit-2013

[94] http://ec.europa.eu/digital-agenda/en/ict-2013

[95] http://sc13.supercomputing.org/

[96] http://go.egi.eu/smc

[97] http://hootsuite.com/

[98] http://www.youtube.com/playlist?list=PL8MrRo-3u8hsY741TtKylvh-rYUPT9vcp

This has resulted in improvement on various measures, the ability to track notable mentions[100] and inclusion in other's social media activity/campaigns[101].

The Communications Team at EGI.eu has worked with the Strategy and Policy Team to edit the EGI Compendium and build a template for the EGI Solutions white papers. This will be taken forward with the Communications Team being responsible for the white papers on Community Networks[102] and Support and Community-driven Innovation[103].

The Communications team has been working on the EGI webinar programme[104]. Through this work eight of the webinars are available to watch again on EGI's YouTube channel[105]. The Communications Team will continue to assist the User Community Support Team and upload edited versions of future webinars in a timely manner[106].

The communications team published fourteen News Items, two Case Studies and one issue of the *Inspired* newsletter in QR14. Through various partnerships and activities EGI had nine media mentions[107] including The Financial Times[108], euronews[109], two in iSGTW and three in various GÉANT channels. EGI also re-subscribed to Alphagalileo to distribute its press releases.

[99] http://www.linkedin.com/company/stichting-european-grid-initiative/products?trk=top_nav_products

[100] http://twitter.com/FECYT_Ciencia/status/388571431384010752

[101] http://www.youtube.com/playlist?list=PLLyjX6SgFi0fdpNhgNKMpUj4vUs-7qWW4

[102] http://www.egi.eu/solutions/community-networks/index.html

[103] http://www.egi.eu/solutions/community-innovation/index.html

[104] http://go.egi.eu/webinars

[105] http://go.egi.eu/webinarvideos

[106] https://wiki.egi.eu/wiki/EGI_Webinar_Programme#Completed_Webinars

[107] http://www.egi.eu/news-and-media/press/index.html#clippings

[108] http://www.ft.com/intl/cms/s/2/5a8ff636-36be-11e3-8ae3-00144feab7de.html

[109] http://www.euronews.com/2013/09/23/visions-from-the-heart/

I.11.2. Strategic Planning & Policy Support

During the quarter under review, the EGI.eu Strategy and Policy Team (SPT) contributed in the following areas:

- **EGI Community Forum 2014**: two members of the team took part of the Program Committee (PC) and supported the authoring of the call for abstract, reviewed the assigned abstracts and led the track "Policies and Business Models for Open Compute and Data Infrastructures". Within the track, the SPT organised and chaired 4 workshops, invited external speakers and contributed 4 presentations.
- **EGI Compendium**: the team completed the authoring of the EGI compendium for the data covering 2012[110] (http://go.egi.eu/compendium-2012). The document was submitted to the EGI Council for approval and was later published with a dedicated news item.
- **Collaboration with OpenAIRE**: the SPT progressed with the OpenAIRE collaboration by leading the dedicated virtual team around the project "Scientific Publications Repository Implementation". Regular calls have been organised and various mining rules have been extracted to discover relationships among existing scientific publications and EGI related entities such as NGIs, VOs and EC-funded projects. The publications under analysis were mainly from ArXiv providing access to the full documents. Mining on metadata coming from Web of Science was also executed. The OpenAIRE collaboration confirmed the release of the new functionalities for the end of 2013.
- **Work plan till EGI-InSPIRE completion**: the task leader analysed all the activities part of this task and the dedicated yearly effort. The document has been used to define what activities could be maintained, what activities could be dropped and what activities could be added to match the available effort until the end of the project and the priorities within the EGI strategy. Following the 3rd EGI-InSPIRE review report, new activities that require a business development function have been identified and a dedicated vacancy to source the expertise has been developed and advertised. The goal is to hire the new person during the next quarter.
- **Collaboration with Helix Nebula**: the task leader has developed an MoU between the Helix Nebula EC project and the EGI-InSPIRE project to formalise the relationship and collaboration. The MoU is in a mature development stage and it is expected to be signed in November 2013. The main goals of the planned activities are: test the hybrid cloud model where commercial cloud resources and community owned resources from EGI can be used seamlessly through a cloud service broker from the ATLAS/CMS flagship application.
- **Communication**: the SPT has authored an article for the 2nd e-IRG newsletter of 2013 ("Service Management Standards for EGI"[111]), and two articles for the Inspired newsletter (Achievements of the EGI-Helix Nebula collaboration, A new certification in Service Management)
- **Improving ITSM**: the SPT has contributed a new service management policy to be approved by EGI.eu and following the requirements of the FitSM standard[112]
- **EGI Solutions**: the SPT provided a template for solutions description to be used to develop white paper for each of the 5 EGI solutions; the template was used to write D4.9 from SA1 activity and the task leader served as reviewer of the deliverable

[110] http://go.egi.eu/compendium-2012

[111] http://www.e-irg.eu/publications/e-irg-newsletter.html

[112] http://www.fitsm.eu

- **EGI Pay for Use pilot**: meetings have been organised and chaired by a member of the SPT to progress on the billing functionality[113]
- H2020: the task leader participated in a number of preparatory meetings to analyse the draft of the Research Infrastructure Work programme and identify the role that EGI could play. The work has led to the organisation of a workshop in December where the EGI community will be invited to contribute.

STFC has continued to chair and lead the Security Policy Group (SPG). Most of the work performed this quarter related to attending and speaking at a number of multi-day meetings and planning for the sustainability of the security activities beyond the end of EGI-InSPIRE.

Two open security sessions were held at the TF 2013. These presented an overview of current activities and future plans in all security areas related to operational security, including security policy, allowing for discussion and feedback from the audience. The SPG Chair also continued to lead the "Security for Collaborating Infrastructures" (SCI) activity building a standard trust framework for security policy between EGI, EUDAT, PRACE, XSEDE and others. Version 1 of the document was completed during PQ14 and (re)submitted to the ISGC2013 conference proceedings.

The work of SCI was also presented (oral session) to the CHEP2013 conference in Amsterdam and to a joint security workshop between EGI, PRACE and EUDAT. Policy activities related to federated Identity Management were also prevalent during PQ13. This work included attendance at the EUGridPMA meeting in Bucharest, with the topic of Level of Assurance in identity vetting being an important part, and also the week of VAMP/REFEDs/FIM4R meetings in Helsinki.

The SPG chair was also involved in EGI.eu planning for the collaboration with TERENA on topics related to AAI and federated Identity Management. All of this work is aimed at linking together the AAI required by EGI and distributed computing for Research in general with the existing national education federations and eduGAIN. The policy issues are often much more complex than the technical ones. The third thrust of PQ14 was the joint security training event and workshop held in Linkoping, Sweden between EGI, EUDAT and PRACE. A very successful training event and sharing of information was held, followed by constructive discussions towards a possible joint security activity, including security policy built on the SCI work, for the Horizon 2020 era.

FOM[114] contributed to the development of differentiated assurance levels in the IGTF, to reflect the increased diversity of resources within the infrastructure, was progressed with the Identifier-Only Trust Assurance framework (IOTA AP). In this quarter the draft criteria were reviewed against common use cases, also including those by PRACE and XSEDE. That also sets the scene for further AAI integration in Europe between, e.g. EGI and eduGAIN, although at this time it is not yet defined which EGI resources will be able to accommodate such differentiated assurance. The guidelines for the operation of trusted credential stores were finalised this quarter, and new identity providers from countries that are about to be affiliated to the European e-Infrastructures have emerged and their review and accreditation will be pursued. Also the technical policies with regard to the introduction of modern cryptographic techniques (SHA-2) were discussed and amended by the IGTF to cater for the revised EGI deployment time line. Further discussions were held on improving timely credential revocation mechanisms to protect the infrastructure (OCSP), ensuring proper risk assessment and

[113] https://wiki.egi.eu/wiki/EGI_Pay-for-Use_PoC:Home

[114] Stichting voor Fundamenteel Onderzoek der Materie (Foundation for Fundamental Research on Matter)

incident response capabilities within the IGTF (RAT Communications Challenge), and addressing resilience, redundancy and preventing vendor lock-in for identity providers, and auditing of existing accredited identity providers.

I.11.3. Community Outreach

The role of the EGI Champions has continued to evolve and their impact and value is becoming increasingly evident as they become the long arm of EGI that is reaching into the core of scientific communities. This was demonstrated in the previous QR13 report by way of a table that reported the divers conferences that the EGI Champions had and were continuing to attend. Each of the Champions has been delivering presentations and contributions in conferences and events within their own scientific fields but in line with their Champion role, they have enhanced their presentations with slides highlighting the use of the EGI resources that are available to support research, and how individually they have used these resources to underpin their own work and achievements. As such, it is clear that Champions need to be recruited from a diverse range of fields, especially those scientific areas where EGI may have strategic reasons for engagement.

Some initial effort has been expended on trying to identify and define some qualitative metrics through which to measure the impact and effectiveness of the Champions scheme and how it can be shown that the financial investment translates to tangible benefits for EGI. Other organisations facing the same challenges include XSEDE in the USA and The Software Sustainability Institute in the UK; collaborative discussions with both organisations on the subject has proved interesting but the challenge to develop useful metrics for this remains firm. Nevertheless, the variety of scientific domains covered by the EGI Champions suggests that this is a valuable starting point for the measurement process. The Champions themselves are also keen to be involved in developing metrics as it is them who will be measured and judged. A first meeting to address the subject was conducted with all Champions in attendance during the TF14 in Madrid and subject to adequate staff resources, follow on meetings will be conducted in the next quarter.

I.11.4. Technical Outreach to New Communities

Support to new prospective user communities continued via the EGI Virtual Team projects[115].

Collaboration between EGI/NGIs and ELIXIR. Purpose of the VT is to investigate the level of technical engagement and support existing at a national level between the NGIs and the ELIXIR Head Nodes, as initial step to establish a formal collaboration and implement a plan of support across EGI.

Within the project the participating NGI-ELIXIR representatives delivered one presentation per country. After several rounds of discussions between the ELIXIR hub and EGI.eu the parties agreed that the Virtual Team project will be closed with two outputs:

- A social network that has been established in and among the NGIs and ELIXIR nodes.
- A set of recommendations for EGI about strengthening collaborations and intensifying knowledge exchange with ELIXIR nodes.

A final report of the VT outcome will be provided during PQ15.

Technology study for the Cherenkov Telescope Array ESFRI. Purpose of the VT is to support CTA in the definition of use cases for the adoption of science gateways and the definition of

[115] https://wiki.egi.eu/wiki/Virtual_Team_Projects

requirements on Authentication Authorization and Identify management, which are necessary to understand the level of assurance needed by the community and the readiness of the EGI core infrastructure in supporting such requirements.

The recommendation suggest the integration of the WS-PGRADE and InSilicoLab technologies, and doing this by signing MoU with the SCI-BUS project that can allocate funding for CTA as an external user community. Purpose of the collaboration is the setup a central CTA gateway based on this integrated package. Once setup, the central CTA gateway would be promoted for the CTA community to gather applications and scientific workflows that can serve the broader community, as well additional, more refined requirements for the 'CTA Very High Energy gamma-ray Science Gateway'.

A final report is expected in PQ15.

Towards a Chemistry, Molecular & Materials Science and Technology (CMMST) Virtual Research Community. The project refined the draft of the document that provides details on the structure and scope of the VRC that should be setup in CMMST domain[116]. New groups joint or expressed interest in the VT during this period (MosGrid, ScalaLife). This virtual team is very important to support the establishment of a world-wide CMMST community which can support itself in a sustainable way by promoting and sharing expertise in use of e-Infrastructure services in their scientific domain. CMMST is also expected to drive integration of world class e-Infrastructures like EGI, PRACE and XSEDE.

Promoting Desktop Grid Solutions. The team helped IDGF and the Hungarian NGI to form this new Virtual Team during PQ14. The project will promote the Desktop Grids (as a middleware technology for e-Infrastructures) that became available and integrated into UMD as a result of multi-year long joint work between the EGEE-III/EGI-InSPIRE and the EDGeS/EDGI projects. The project aims to reach out to existing resource providers, EGI VOs, and scientific communities that exist within and beyond EGI.

Study Case with EISCAT_3D[117]. EISCAT-3D was supported in defining use cases and requirements for data dissemination and ingestion of scientific data and metadata management. Requirements were captured through an online survey, and through telephone conferences. This allowed the definition of a service Proof of Concept suitable for deployment on the EGI Federated Cloud.

According to the current understanding of the partners, the proof of concept system will be based on the EGI Federated Cloud (as storage) and on an open source implementation of the OpenSearch data framework.

EGI-DRIHM collaboration[118]. The goal of the collaboration is to setup a web based science gateway for the research community active in hydro-meteorology (DRIHM) to enable them running pre-defined simulation workflows using resources of EGI. A network of EGI resource centres supporting DRIHM was successfully established.

[116] https://wiki.egi.eu/wiki/Towards_a_CMMST_VRC

[117] http://envri.eu/eiscat_3d-study-case

[118] https://wiki.egi.eu/wiki/EGI-DRIHM:Collaboration

The collaboration successfully met the first milestone, the demonstration of the gateway that works with the DRIHM VO of EGI, and can run four hydrometeorology models in two workflows. The achievements were demonstrated at the 2nd DRIHM EC project review (23rd of October). The collaboration will continue in PQ15, with a coordinating teleconference on the 12th of November to define objectives, tasks and deliverables.

Support for the existing and for new use cases of the EGI Federated Cloud continued. The EGI Federated Cloud is engaged with nine use cases[119] and helping three new use cases[120] to establish their goals. Up to date information is available in the wiki[121].

Training and education

EGI Webinar programme[122] included three webinars whose recordings were made publicly available. Arrangements for two webinars for PQ15 have been also made.

The development of the Massive Open Online Course (MOOC) continued, as well as the evaluation of Liferay modules. The MOOC will start on the 18th of November (registration page[123]). The Liferay project will produce its deliverable (evaluation report) in 2014. Detailed information about the projects can be found in the SA4 section of this report, or in the MS801 document[124].

A keynote presentation was delivered at the 9th European Conference on Computational Chemistry event (EUCO-CC). The title of the presentation was "Bridging grid, cloud, supercomputing and storage resources at a global scale", the slides are available in DocDB[125].

[119] ENVRI, ESA, Catania Science Gateway, BioVeL, Dirac, CLARIN, WS-Pgrade, Peachnote and WeNMR

[120] VERCE, INRIA, 'physiology modelling'

[121] https://wiki.egi.eu/wiki/Fedcloud-tf:Users#Current_FedCloud_Users_and_Communities

[122] EGI Webinars: http://go.egi.eu/webinars

[123] http://mooc.uva.nl/portal

[124] https://documents.egi.eu/document/1965

[125] https://documents.egi.eu/document/1930

Applications Database (AppDB)

During PQ14 developments for the applications database were mainly focused on the Virtual Appliance Marketplace (VA) extensions. With the release of the VA Marketplace, there will come a new category of software entries, called virtual appliances, which are pre-configured virtual machine images that provide a ready-to-use software solution that can be rolled out to and hosted on resources of the EGI Federated Cloud infrastructure with minimal effort. AppDB's VM Marketplace will provide the ground for creating, managing, and publishing versioned repositories of virtual appliances, in a way that integrates with the existing HEPiX VMCaster[126] / VMCatcher[127] framework, currently in use by EGI. Besides basic features embedded in the AppDB portal itself, such as creating, publishing, enabling/disabling, and archiving or deleting Virtual Appliance versions, it will also procure a command line tool for uploading full VA versions and a web-based dashboard for monitoring the individual uploads injected from the command line. At the time of this writing, the VA Marketplace is still in beta state, available for any interested party in the EGI AppDB development instance[128]. It is expected to roll out to production right after the EGI FedCloud infrastructure becomes production level. Preliminary documentation has been added to the EGI wiki[129] and extensive testing has been started in order to ensure the VA Marketplace meets the current user communities' requirements.

One more feature that was added to the AppDB, aims at helping users publish their work to their respective audiences through social networking sites. Since version 4.4.4, users can use the social toolbar which appears on the top-right corner of each software details view, in order to post an entry about the software in any of the major social networking sites: Facebook, Twitter, Linked-in, and Google+.

In parallel, the EGI Applications Database team focused on preparations for the TF 2013. During the event, the EGI AppDB team held post at a presentation booth for the extent of day three, where the service was presented to inquiring individuals, in the form of adaptive interactive presentations, while gathering requirements and feedback. In addition, the team organized a training session[130], including several use cases that attendees were able to implement during the event, in order to register, manage, and increase the visibility and support of their own software using AppDB. The training was conducted by members of IASA (Greece) and EGI.eu (Netherlands) and was relevant to any software developer, platform developer, platform integrator, scientific programmer, and software user who is affiliated with EGI, or with any other e-infrastructure in and outside of Europe.

Client Relationship Management System (CRM)

The major work during PQ14 was focused on extraordinary developments to enhance the usability of the CRM user interface. A new functionality is being implemented and tested to redirect users to collections of CRM records through single clicks on home page plots. This will allows CRM users to easily identify, access and correct incomplete information on CRM records associated to them through a friendly mechanism. The newly introduced functionality automates the multi-step old fashion search

[126] https://github.com/hepix-virtualisation/vmcaster

[127] https://github.com/hepix-virtualisation/vmcatcher

[128] https://appdb-dev.marie.hellasgrid.gr/

[129] https://wiki.egi.eu/wiki/Fedcloud-tf:WorkGroups:Scenario8:AppDB-VA-Marketplace

[130] https://indico.egi.eu/indico/sessionDisplay.py?sessionId=50&confId=1417#20130919

tool for some pre-configured search views. These developments are being implemented from basis since they act on a Home page module created from source to satisfy EGI requirements. From a technical point of view, work is being performed to implement functions to interoperate with CRM pre-build AJAX procedures and CRM forms.

Further work has been performed to addressed identified bugs and evolving requirements from TNA2.5 UCST, such as the introduction of a new leadership organization field in the Projects accounts ("ESFRI", "INFRA", "National Project" or "Other international Project") .

From a dissemination perspective, a CRM demo has been submitted, approved and delivered at the TF 2013.

Despite several dissemination events performed along the past quarters (tutorials and seminar, Wiki pages, information in bulletin, etc.) use of the system has not increased. At this point it does not seem this is caused by a technical problem centred in the usability or interaction with the tool. It seems more a problem related with the NIL community motivation which does not seems to consider this tool essential for their work, it is not seeing the long range benefit of using the tool or/and is unwilling to collect and/or share information related to new communities in the CRM.

Training Marketplace (TMP)

During Q2 of PY4 there has been considerable developmental activity to the Training Marketplace. The EG Review 2013 suggested adding social media buttons to the facility, which was completed early this quarter. Users can click an icon to share the training marketplace page on Facebook, Twitter and many other social media platforms, and also by email. It is monitored through the EGI Google Analytics account. The gadget that generates a list of events for a project to embed into their own website was finalised and went live. This allows significantly more customisation and filtering compared to previously available gadgets – such as listing events only relevant to a project or community, as well as offering a modern, stylish appearance which is also customisable.

There have been a number of bugs fixed. These include display bugs such as a pop-up event info font being too large for the display and non-appearance of a scroll bar. Tabs have been added to the browse by event/webinar features so users can view past events as well as upcoming events, to help users locate information more easily. An advanced search feature has been added to the EGI Training Marketplace page, so users can filter by project, location and research community.

During the last month of the quarter we have been planning and testing the upgrade to the Drupal framework, upon which the Training Marketplace is built. The current system is built on Drupal v6 but support for this ceases soon. So we have been testing an upgrade to Drupal 7. Many of the modules the Training Marketplace uses were not available in Drupal 7 but alternatives for all have been sourced and tested. We expect the upgrade to go live very early in the next quarter.

On top of the development work, the UK is still strongly involved in campaigning for national funding to build a sustainable Training Marketplace for the future, and has been gathering user feedback and requirements for such a system.

I.11.5. Community Activity

At the time of preparing this report there are 5 VT projects under way, including 1 new start-up VT project titled “Promoting Desktop Grid solutions” being managed by SZTAKI. With the exception of the VT Scientific Publications Repository Implementation reported beneath, these are all being run

under the supervision of the Technical Outreach team and are thus reported on under Section 3.2.4 above. The status of the VT projects is presented via the EGI VT Wiki[131].

3.1.1.1. VT – Scientific Publication Repository Implementation

Project Lead: Sergio Andreozzi (EGI.eu)

Collaboration with OpenAIRE: the SPT progressed with the OpenAIRE collaboration by leading the dedicated virtual team around the project "Scientific Publications Repository Implementation". Regular calls have been organised and various mining rules have been extracted to discover relationships among existing scientific publications and EGI related entities such as NGIs, VOs and EC-funded projects. The publications under analysis were mainly from ArXiv providing access to the full documents. Mining on metadata coming from Web of Science was also executed. The OpenAIRE collaboration confirmed the release of the new functionalities for the end of 2013.

Future plans for the VT: To support roll-out of new OpenAIRE functionalities for the EGI community and to test them among the NGIs that are part of the VT.

I.12. Plans for the next period

Plans for the Communications Team around events for the upcoming quarter include attending SC'13, ICT 2013 and planning for the Community Forum in Helsinki. As part of ICT2013 the team is also working with Helix Nebula on a media announcement on a joint initiative with commercial providers. The team are also planning the EGI presence at various discipline specific meetings in QR15 and beyond.

During QR15 the Communications Team will be working with the company "Een van de Jongens" on a general EGI video of the quality of the Stores from the Grid episodes. This had been setback by the departure of Steven Newhouse as he was one of the interviewees/host of the video.

QR should see coordination of the Human networks move fully under the Communications team. The completion of the Human Networks Blueprint and the Horizon 2020 workshop early in the quarter should help with this process and the future direction of the programme.

The quarter will also see the team expanding to four individuals to include the Graphic Designer and Intern. This will allow the team to explore new avenues and possible publications.

Further case studies and news items will be published on the EGI website, and disseminated through the all of EGI's channels and partners. An editorial provided by EGI, based on the Grand Vision, for the "Pan European Networks: Science & Technology" publication will be published in December.

For NA2.3:

EGI.eu: contribute to the organisation of the "EGI towards H2020" workshop and to the program committee of EGI Community Forum 2014; selection and hire of the new business development expert; organisation of an EGI.eu internal meeting to explain the impact of FitSM adoption for internal service management processes; development of a work plan for the last phase of EGI-InSPIRE; work

[131] https://wiki.egi.eu/wiki/Virtual_Team_Projects

on milestone due during the next quarter; manage the testing phase of OpenAIRE services within the EGI community.

STFC: Work will continue on the SCI activity and also on new or updated security policies required to support the operation of federated Clouds in EGI. The latter topic will be one of the major issues to be discussed in the face-to-face security meeting in the Netherlands at the beginning of December. The topics of trust and levels of assurance related to different methods of identity vetting and federated identity management will be taken forward. The SPG chair will attend the IGTF All Hands meeting in Argentina (November) to present the status of work on Federated Identity Management in Europe and to see if agreement can be reached on the best roles for IGTF in these activities. STFC will host a joint EUGridPMA/SCI meeting in Abingdon, UK, in January 2014.

FOM: The next period will be used to consolidate the identifier-only profile, and the validation of the trusted credential store and AA operations guidelines with selected service providers. An IGTF All Hands meeting is foreseen to ensure consistent sets of policies across all continents

Overall, the last quarter was successful for all mini projects. All are firmly rooted in their target domain and deliver results that are needed within that domain. All mini projects demonstrated their progress at the TF 2013, though through different means: While some were represented through posters (due to conflicting conference schedules), others were present at EGI demonstration booths, or task leaders held dedicated talks at various sessions in the conference schedule, participated in stage demonstrations, or exposed their implementations to interoperability tests at the co-located CloudPlugfest.

The first mini project, TSA4.11 GOCDB scoping extensions, has concluded successfully. GOCDB v5 was deployed to production in early October, and a project conclusion report was provided. This report will be used as a blueprint for project conclusion reports for all other mini projects.

The MOOC on Grid and Cloud computing will be held in November 2013 and last for two months, which will conclude this project.

The Liferay mini project has completed all initially planned objectives, and is investigating further into a possible replacement of the current EGI blog system with a corresponding Liferay module.

TSA4.4: OCCI for CMF is progressing very well, and begins to attract public interest for integrations beyond those Cloud Management Frameworks that are currently deployed in the EGI production infrastructure.

The corresponding mini project for Cloud storage, TSA4.5 CDMI for CMF, is progressing well towards a release of its software into the EGI infrastructure.

TSA4.6 successfully demonstrated deploying HelixNebula's ESA flagship use case on the EGI federated Clouds infrastructure. With Slipstream being the common component in Helis Nebula and TSA4.6 EGI is concretely working towards integrating as a service provider into Helix Nebula's ScienceCloud service.

Close collaboration between TSA4.7 and TSA4.8 continues; the contextualisation best practice around the cloud-init solution emerging from TSA4.8's analysis of existing EGI Cloud use cases is implemented by TSA4.7 into a specific service allowing user communities to automate application deployment using publicly available generic golden images of Linux distributions.

The VO Administration Portal is also nearing completion, and is in the process of being integrated with existing EGI production infrastructure, which is necessary for the planned production release during early 2014.

The alternative A/R calculation service developed in TSA4.10 has reached a stage where its produced results are validated against the reference results from the current production service with great success.

Finally, in close collaboration with the Resource Allocation Task Force, TSA4.12 developed the underpinning service very close to a first release that may be used for first pilot resource allocations in the very near future.

I.13. Main Achievements

I.13.1. Work package Management

Most effort in terms of work package management was routine work, i.e. collecting weekly reports, aggregating them in a report to the Activity Management Board with an executive summary each week. Over time, reporting was occasionally disrupted; although not critical as all mini-projects are progressing well, due diligence requires following up with the task leaders and the respective shepherd, if necessary. Most of the times, however, these reporting hiccups were caused by illness or conference participation.

I.13.2. Massive Open Online Course Development

The mini project is assembling the course material as planned and designed in the previous quarter. Along that a portal was put into production for users to register for the course; some corrective and bug fixes are expected but not exceeding the usual. The EMI UI caused some headaches due to some incompatibilities with virtualisation, but this did not impede the plans to include workflows and portal technology in the online course. The portal system will be provided in a separate Virtual Machine. Further more, some problems were encountered with the temporary grid certificates but these have now been solved.

I.13.3. Evaluation of Liferay Modules

Most of the work of this mini project was already achieved in the previous quarter; some documentation about an AppDB alternative has been contributed to a draft final report for this mini project. CESNET is now investigating whether replacing the current EGI blog with a Liferay module might be feasible.

I.13.4. Providing OCCI support for arbitrary Cloud Management Frameworks

The mini project is progressing well, despite some unfunded members leaving the mini project (see MS801 for more details, and below). This has caused a delay of about one month compared to the original schedule, however this delay currently remains stable and does not grow. To accommodate this changed situation the overall objectives and work plan of the mini project have been adjusted. However, the effects will only appear towards the end of the mini project. The necessary refactoring of the rOCCI framework is now completed, allowing upgrading the current rOCCI server to this new framework. During that time, new features will be backported to the legacy rOCCI server. A key achievement is the implementation of a new authorisation subsystem for the rOCCI server that provides the same interface and message exchange as OpenStack.

During the EGI TF 2013 the rOCCI framework was a very prominent element of a number of presentations, demonstrations and contributions, as well as an important player in the co-located CloudPlugfest. This resulted in recording a significant number of issues that are individually relatively small. The team is working through these issues, which will continue during PQ15. The popularity of the rOCCI technology has caused interest in the OpenNebula community to investigate a possible inclusion of the rOCCI server in regular future OpenNebula release bundles. These investigations have not yet finished, and will further be followed up during subsequent PQs as required.

Last but not least, the team is tying loose ends together in preparation of a production release of rOCCI server and rOCCI client in the EGI Federated Cloud infrastructure in the foreseeable time.

I.13.5. CDMI Support in Cloud Management Frameworks

The mini project is packaging the technology into “stoxy” (short for “storage proxy”). It is now integrated with EGI’s Federated Clouds AAI via X509-enabled Keystone tokens. Most of the work in

this quarter focused on documentation and supporting external reference clients (available from SNIA's website), and widening deployments within the EGI community.

I.13.6. Dynamic Deployments for OCCI Compliant Clouds

During this quarter, EGI invested in accelerating the progress of this mini project by providing a basic OCCI connector for Slipstream. This connector was used during the proof of concept deployment of the ESA flagship use case from the HelixNebula project. This deployment was successful except for a specific testcase that is not critical for this deployment. The second flagship use case, CERN's ATLAS experiment, was delayed due to reasons beyond control of EGI or the mini project. It is now planned for the second half of November 2013.

During this quarter, Slipstream 2.0 was released; the connector architecture was successfully upgraded to this new Slipstream release, and work to update the OCCI connector has started.

I.13.7. Automatic Deployments and Execution of Applications using Cloud Services

The existing contextualisation technology based on CloudInit has been successfully tested on OpenNebula and OpenStack, with regular integration checks on newer OpenStack releases (e.g. OpenStack Grizzly and Horizon). However, CloudInit is not (yet) available for RedHat based Linux releases hence this is currently one focus of this task's activities.

In parallel, a frontend user interface is currently being developed, mainly based on requirements coming from the computational chemistry community.

I.13.8. Transforming Scientific Research Platforms to Exploit Cloud Capacity

During PQ14, the focus was put on concrete and practical support for the BioVel and WeNMR user communities, adding BioVel's BioSTIFF virtual appliance to the list of virtual appliances receiving optimisations.

During this process, the documentation will be provided in the EGI wiki as experience and expertise grows with practice; a wiki is a better place to maintain such evolving documentation than a relatively static Word document. This includes documenting emerging best practices in collaboration with the BNCweb (Clarin), WeNMR and DesktopGrids user communities. Together with resumed discussions with WS-PGRADE, Peachnote and CHAIN-REDS a common profile for CloudInit is being developed but slowed down due to lack of support for ONE on Debian 7. Packages of CloudInit for this Linux distribution can be expected within the next quarter.

Progress in the optimisation of BioVel virtual appliances allows defining and developing a stable base image for BioVel, as well as starting to integrate remote Cloud object storage in them. Although currently using non-standardised APIs, this is a first step towards integrating CDMI based Object storage once the respective mini project can provide a stable implementation of its client.

The CloudCapabilities team is encountering a recurrent situation which has been predicted in the EGI Platform roadmap where software/technology providers are disjunct from the platform providers (i.e. those bundling VM images together). This relationship needs to be clearer described and strengthened in the EGI community.

I.13.9. VO Administration and operations PORtal (VAPOR)

VAPOR underwent a documentation and code review phase. Main developer (Flavien Forrestier, funded) is lacking expertise in SW engineering best practices, but these are under control of mini project management. VAPOR is continuously improved, e.g. ergonomy and usability of the UI, unit

testing improvements, etc. New features were completed and added, such as the JobMonitor and the ability to generate a white list of computing elements, reports of capabilities (such as HEPSPEC values) of all resources supporting a VO, report of all supporting resources not in proper production status. The workflows for "dark data" and “lost files” management has been discussed and refined with UK & FR NGIs, as well as partner VOs (Biomed, WeNMR, CompChem and France Grille VO). The team had a F2F with the EGI Operations Portal team to sahre expertise and agree on development practises. An important outcome of this meeting was to schedule a further 2-day F2F meeting by the beginning of December to integrate VAPOR with the EGI Operations Portal.

The feature set for the VO operations reports and status is now complete (JobMonitor, CE white list, all resources supporting VO, resources failing production status, reports for known issues with storage and computing resources). VAPOR is progressing well, and started implementing VO data management (dark data and lost files, and reporting features to detect and deal with SEs that are filling up).

I.13.10. A new approach to Computing Availability and Reliability Reports

The Availability and Reliability computation service can now be accessed through a prototype API. The transition from local resources to ~Okeanos service provided by GRNET was successful and the Hadoop-based backend is now reliably running on the external Cloud infrastructure. NGI profiles including NGI-specific A/R reports and an updated charting module are now available. The web interface now supports the selection of profiles, NGIs, sites and periods and can export the results to json, xml and csv formats. The computation of A/R results is continuously improved, and results are checked against the reference from the current production service for the months August & September 2013. The work on the “data retention” was postponed as the team focused its efforts on the support for the VO A/R and the “Availability Profiles”. Consumer component was improved by using the latest stomppy version, self-monitoring and external Nagios-based monitoring. Topology synchronizers were extended to support VO feeds and GSTAT HEPSPEC2006 data.

I.13.11. GOCDB Scoping Extensions and Management Interface

GOCDB v5 is now deployed including the new scoping capability, and the admin interface functionality for NGI and site deletion is now complete. The GOCDBExt mini project has presented its final results at the EGI TF in Madrid. An "exit report" is available in the EGI Document database at https://documents.egi.eu/document/1957.

I.13.12. Tools for automating applying for and allocating federated resources

The implementation phase of the e-Grant tool is in progress. Based on the input from Resources Allocation Task Force, the metrics of SLAs, and format of the resources requested was implemented. Integration with operation portal is on-going. The tool will be used in the first resource allocation campaign in EGI (late November).

I.14. Issues and mitigation

I.14.1. Managing voluntary contributions into mini projects

The initial planning for the TSA4.4 task included contributions from unfunded partners, and in fact depended on these. However, these contributions did not take place despite initial planning and communication. This has led to some delay in the mini project.

Mitigation:

The overall goals of the mini projects have been adjusted to an acceptable and realistic level. The planned catching up in terms of delay will emerge towards the end of the mini project.

I.15. Plans for the next period

TS4.2 Massive Open Online Course development

The MOOC will be run until the end of December, including updated and new recordings and slides based on the received feedback.

January and February 2014 will be mostly dedicated to course related activities such as collecting feedback, course results and grading students. Since the course is the overall objective of the mini project, the mini project will thereafter be dismantled with archiving the course material and make it available to EGI, as well as providing an end of project report.

TSA4.3 Evaluation of Liferay Modules

While INFN and SZTAKI have finished their work, CESNET will continue with further Liferay modules and Liferay versions evaluation:

- Evaluate Liferay 6.2 published on 1 November 2013 in conjunction with compatible new versions of modules (Social Office and Sync, not released yet)
- More thorough evaluation of the "Structured content" feature in Liferay
- Experimental reimplementation of Pebble blog modules for Liferay blog
- Evaluation of poll feature in Liferay compared to phpBB

TSA4.4 Providing OCCI support for arbitrary Cloud Management Frameworks

In the next three months the OpenNebula backend will be ported to the newly rewritten rOCCI framework. Also, a dummy backend plugin and instructions will be included for future backend developers. The reference CLI will be updated to support new features of the rOCCI server, which in turn will receive further QA and test coverage, before it will be deployed in the Federated Cloud for further testing and preparation for production release.

With rOCCI gaining popularity in the academic Cloud community, best effort support will be given to StratusLab and CloudStack developers for their respective plugin developments.

TSA4.5 CDMI support in Cloud Management Frameworks

Support for CRUD operations on objects, and CDMI metadata support will be available in stoxy by November 2013. OpenStack as backend will be integrated in November and December 2013, and stoxy will be deployed at least at three sites in November and December 2013.

Stoxy will be stress tested in December 2013 after completing the planned feature set. January and February are reserved for fixing bugs discovered in earlier site deployments and stress testing.

TSA4.6 Dynamic Deployments for OCCI Compliant Clouds

In the next period, the OCCI connector upgrade to Slipstream 2.0 will be completed, just as well as the foundation of the auto-scaling feature. Once these improvements are completed the EGI deployment

of HN flagship use cases will be repeated to demonstrate automated deployment of Cloud-ready applications.
With having accomplished this, the mini project will conclude with a final end of project report.

TSA4.7 Automatic Deployments and Execution of Applications using Cloud Services
The next three months will see a final version of the web frontend, improved documentation and service deployments at a number of resource providers in the federated Cloud testbed. General public release of the service is expected at the end of January 2014, while the team examines a potential integration with AppDB for harvesting information on available applications and VMs for further application deployment automation.

TSA4.8 Transforming Scientific Research Platforms to Exploit Cloud Capacity
The success of the current activities will be maintained and kept to drive outreach to other communities to get the benefit from the lessons learned so far. Various EGI communication channels are considered for this, e.g. the blog facility.
Towards the end of the quarter all lessons that were learned will be documented in a more structured way in the EGI Wiki, particularly highlighting the data management use case coming from the BioVel community.
Together with TSA4.7 the emerging cloud-init configurations in the various Linux distributions require harmonisation in base images to facilitate smooth change of Linux distributions for users, as required.

TSA4.9 VO Administration and operations PORtal (VAPOR)
Next quarter will first be dedicated to the completion of VO data management features. By the end of 2013, a beta release should be available publicly thanks to the integration with the EGI Operations Portal. Then, the team will tackle the last big set of features concerning the VO users life cycle management (users database, integration with VOMS and Applications DB, tracking people behind robot certificates).

TSA4.10 A new approach to Computing Availability and Reliability Reports

The next period will see implementation of support and management of availability profiles, A/R reports for VOs and support for recalculations.

If time remains, the team will also implement support for data retention, support for particular factors in A/R calculations and, if still time permits, deploy the service in production quality on pre-production infrastructure.

TSA4.12 Tools for automating applying for and allocating federated resources

Based on feedback on version 1 improvements and new functionality will be designed (November 2013). The main direction includes improvements in request brokering, pools management and cloud resources support. The following two months (December 2013 – January 2014) will see the completion of the whole system in production quality.

I.16. Summary

I.17. Main Achievements

Corrective actions in the project activities of PY4 were discussed and their implementation started in order to take into account the outcome of the PY3 review. Consensus for a project extension of 8 months was reached and the unspent budget for each partner was estimated and negotiated to define a work programme for the project extension (May – December 2014). Due to the need to sustain a 8 month project extension at EGI.eu, a plan was defined to reduce the human effort available in the project. On October 15 the project direction was formally handed by Dr. Steven Newhouse who left EGI.eu, to Dr. Tiziana Ferrari – formerly EGI Chief Operations Officer – and the management of NA2 and SA1 was respectively handed over to Sergio Andreozzi (Strategy and Policy Manager at EGI.eu) and Malgorzata Krakowian (Senior Operations Officer at EGI.eu).

The preparation of the project extension started with the definition of the project objectives for the Project Year 5, the definition of the technical activities, the related budget and the active partners of the consortium.

I.17.1. Project Management

Corrective actions in the project activities of PY4 were discussed and their implementation started in order to take into account the outcome of the PY3 review. In particular the revision of the process and structure of the user engagement activities was reviewed and the Distributed Competence Centre was created to implement the direction of the User Engagement Strategy, a living document defining the outreach priorities and the tactical actions to achieve these. A business developer position was opened to lead the development of the EGI solutions and a new activity investigating the policy and legal issues related to the introduction of pay per use services in EGI was initiated.

Consensus for a project extension of 8 months was reached and the unspent budget for each partner was estimated and negotiated to define a work programme for the project extension (May – December 2014). Preparatory work for the implementation of extension of the project started.

Due to the need to sustain a 8 month project extension, a plan was defined to reduce the human effort available in the project at EGI.eu by not extending various temporary contracts in the following areas:

- Project office and quality management (NA1): - 2 FTE/year
- strategy and policy development team (NA2): - 1.5 FTE/year
- communications team (NA2): - 2 FTE/year (graphics designer, event manager)
- user community technical support: - 0.5 FTE/year

The reduced manpower will be partially compensated by hiring of new temporary contracts for operations and user support, communications and design, business development.

On October 15 the project direction was formally handed by Dr. Steven Newhouse who left EGI.eu, to Dr. Tiziana Ferrari – formerly EGI Chief Operations Officer – and the management of NA2 and SA1 was respectively handed over to Sergio Andreozzi (Strategy and Policy Manager at EGI.eu) and Malgorzata Krakowian (Senior Operations Officer at EGI.eu).

The preparation of the project extension started with the definition of the project objectives for the Project Year 5, the definition of the technical activities, the related budget and the active partners of the consortium.

The technical profile and costs of the EGI-InSPIRE operations and technical Global Tasks were reviewed in preparation to a change in funding structure from May 2014 after the end of PY4. These tasks (currently delivered through SA1 and SA2) will evolve into support services – the so-called "EGI Core Activities" – that will still be delivered by partners of the EGI collaboration, but will no longer rely on EC project funding according to the EGI services sustainability plan. A new set of partners responsible of providing these activities and services from May 2014 was appointed and the preparation of handover of activities started.

I.17.2. Milestones and Deliverables

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

Id	Activity No	Deliverable / Milestone title	Nature (***)	Lead partner	Original delivery date(*) [132]	Revised delivery date(*)	Status (**)
MS127	NA1	Quarterly Report	R	EGI.eu	40	40	PMB Approved
MS242	NA2	Review of Website Content	R	EGI.eu	40	40	PMB Approved
MS427	SA1	Integrating Resources into the EGI Production Infrastructure	R	EGI.eu	40	40	PMB Approved
D4.9	SA1	EGI Operations Architecture	R	EGI.eu	41	41	PMB Approved
MS243	NA2	EGI Technical Forum	R	EGI.eu	42	42	PMB Approved
MS801	SA4	Interim Report on Additional Funded Activities to Advance EGI's Strategic Goals	R	EGI.eu	42	42	PMB Approved

[132] *(*) 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*

I.17.3. Consumption of Effort

Selected period: PM40 to PM42 (Aug to Oct 2013). Report extracted on 27 Nov 2013

Project Quarter 14

Type	Work Package	Hours Declared	PM Declared	Committed PM	PQ14 Achieved %
MGT	WP1-E	756,0	5,3	9,3	56,3%
MGT	WP1-M	1.680,0	11,7	11,2	104,3%
COORD	WP2-E	3.186,0	22,6	31,8	70,9%
COORD	WP2-N	4.939,8	35,5	46,0	77,2%
SUPPORT	WP4-E	6.604,2	48,6	41,4	117,2%
SUPPORT	WP4-N	27.660,1	200,6	248,2	80,8%
SUPPORT	WP5-E	2.016,7	14,8	25,5	57,8%
SUPPORT	WP5-N	1.810,5	13,4	13.9	96.4%
RTD	WP7-E	1.699,7	12,5	9,7	129,5%
RTD	WP7-G	974,8	7,3	10,0	73,2%
SUPPORT	WP8-S	3.517,0	26,0	29,6	87,9%
	Total:		**54844,8**	**398.1**		**476.7**	**84%**

The detailed breakdown of effort contributed to each work package by each partner is provided in the following tables for PQ10. 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.

Selected period: PM40 to PM42 (Aug to Oct 2013). Report extracted on 27 Nov 2013

WP1-E - NA1 Management (EGI)

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	756	5,3	9,3	56,3%
Sum:	**756,0**	**5,3**	**9,3**	**56,3%**

WP1-M - NA1 Management

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	1680	11,7	11,2	104,3%
Sum:	**1680,0**	**11,7**	**11,7**	**104,3%**

WP2-E - NA2 Community Engagement (EGI)

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	2448	17,0	26,5	64,1%
12A-CSIC			0,4	
16A-GRNET	0	0,0	1,4	0,0%
16E-IASA	0	0,0	0,4	0,0%
26A-FOM	0	0,0	0,3	0,0%
29-LIP	133	1,0	0,5	203,4%
34A-STFC	605	4,6	2,3	196,3%
Sum:	**3186,0**	**22,6**	**31,8**	**70,9%**

WP2-N - NA2 Community Engagement

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
2-UPT			0,8	
3-IIAP NAS RA	80	0,5	0,4	145,5%
5A-IICT-BAS	0	0,0	0,9	0,0%
7A-ETH ZURICH	0	0,0	0,2	0,0%
7B-UZH	140	0,9	0,4	236,2%
7C-SWITCH	0	0,0	0,4	0,0%
8-UCY			0,8	
9-CESNET	320	2,1	1,6	130,3%
10B-KIT-G	914	6,7	3,3	204,4%
10C-DESY				
10D-JUELICH				
10E-BADW	0	0,0		
10G-FRAUNHOFER				
12A-CSIC	330	2,6	1,5	175,3%
12D-UPVLC	27	0,2	1,8	11,9%
13-CSC	59,2	0,5	2,0	22,1%
14A-CNRS	156,5	1,2	2,2	53,3%
14B-CEA	0	0,0	0,7	0,0%
14C-HealthGrid			0,2	
15-GRENA	71	0,4	0,3	164,9%
18A-MTA KFKI	0	0,0	0,3	0,0%
18B-BME	4	0,0	0,4	6,8%
18C-MTA SZTAKI			0,4	
19-TCD			0,3	
20-IUCC	306	2,0	0,5	384,0%
21A-INFN	564	4,5	3,1	146,2%
22-VU	360	2,1	0,8	252,8%
23-RENAM	27	0,2	0,1	205,7%

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
26A-FOM	41	0,3	0,4	79,4%
26B-SARA	50	0,4	0,3	120,4%
27A-SIGMA			0,6	
27B-UIO			0,4	
27C-URA			0,7	
28A-CYFRONET	20	0,1	1,2	11,4%
28B-UWAR	32	0,2	0,9	26,4%
28C-ICBP			0,6	
29-LIP	50	0,4	1,9	20,3%
30-IPB	282	1,8	1,4	130,1%
31-ARNES			1,7	
31B-JSI			0,9	
32-UI SAV	362,5	2,8	2,3	122,6%
33-TUBITAK ULAKBIM	441	3,2	2,4	129,6%
34A-STFC	198,6	1,5	2,3	64,6%
34C-UG			0,2	
34D-IMPERIAL			0,3	
34E-MANCHESTER	0	0,0	0,3	0,0%
36-UCPH	92	0,7	1,0	68,0%
38-VR-SNIC	0	0,0	0,1	0,0%
38A-KTH	0	0,0	0,2	0,0%
39-IMCS-UL	12	0,1	1,4	6,2%
40A-E-ARENA			1,2	
Sum:	**4939,8**	**35,5**	**46,0**	**77,2%**

WP4-E - SA1 Operations (EGI)

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	712	4,9	5,0	99,6%
9-CESNET	560	3,7	2,6	143,9%
10B-KIT-G	837	6,1	4,4	139,3%
10D-JUELICH	151,6	1,1	0,4	295,1%
12A-CSIC	65	0,5	1,1	48,9%
12B-FCTSG	156,5	1,1	0,8	150,3%
13-CSC			0,5	
14A-CNRS	98	0,7	0,8	99,4%
16A-GRNET	615,1	4,7	4,4	107,1%
17-SRCE	530	3,7	2,4	150,3%
21A-INFN	1173	9,3	3,8	248,3%
21B-GARR			0,8	
26A-FOM			0,8	
26B-SARA	92,5	0,8	1,4	53,3%
28A-CYFRONET	42	0,3	1,4	20,8%
29-LIP	383	2,9	1,8	159,6%
34A-STFC	546,5	4,1	4,6	90,3%
35-CERN	528	3,7	3,7	100,4%
38A-KTH	0	0,0	0,7	0,0%
38B-LIU	114	0,8	0,4	225,2%
Sum:	**6604,2**	**48,6**	**41,4**	**117,2%**



WP4-N - SA1 Operations (EGI)

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
2-UPT	0	0,0	1,2	0,0%
3-IIAP NAS RA	750	5,1	1,2	430,6%
5A-IICT-BAS	120	0,9	1,6	52,7%
5B-IOCCP-BAS	0	0,0	0,5	0,0%
5C-NIGGG-BAS	187,5	1,3	1,5	89,3%
6-UIIP NASB	40	0,3	1,9	15,2%
7A-ETH ZURICH	172	1,1	2,1	53,2%
7B-UZH	8	0,0	1,1	4,3%
7C-SWITCH	164	1,1	2,1	49,9%
8-UCY	56	0,4	3,0	13,7%
9-CESNET	983	6,6	7,8	83,9%
10B-KIT-G	910	6,6	7,0	95,2%
10C-DESY	140	1,0	1,9	52,6%
10D-JUELICH	246,4	1,8	1,4	125,1%
10E-BADW	1171,7	8,5	3,0	284,4%
10G-FRAUNHOFER	165,7	1,2	1,9	62,9%
10H-LUH	184	1,3	1,4	97,4%
11-UNI BL	420	3,2	4,7	68,3%
12A-CSIC	612	4,9	2,8	178,0%
12B-FCTSG	1275	9,2	4,1	222,6%
12C-CIEMAT	343	2,6	2,4	108,8%
12D-UPVLC	18	0,1	1,8	8,2%
12E-IFAE	422	3,4	2,9	117,4%
12F-RED.ES	805	6,1	3,3	186,9%
12G-UNIZAR-I3A	313	2,5	3,3	77,0%
12H-UAB	764	4,5	2,5	179,7%
13-CSC	237,4	1,8	4,2	43,2%
Partner	**Hours Declared**	**Pm Declared**	**Committed PM**	**Achieved PM**
14A-CNRS	1648,5	12,5	15,1	82,9%
14B-CEA	1032	8,1	4,0	201,8%
15-GRENA	185	1,1	1,2	92,7%
16A-GRNET	386,8	2,9	7,7	38,3%
16B-AUTH			0,8	
16C-CTI	36	0,3	0,8	33,8%
16D-FORTH	30	0,2	0,8	28,1%

16F-ICCS	0	0,0		
16G-UI			0,5	
16H-UP	80	0,6	0,6	97,5%
17-SRCE	567	3,9	4,5	87,1%
18A-MTA KFKI	628	4,1	4,1	100,8%
18B-BME	176	1,3	1,8	69,4%
18C-MTA SZTAKI			1,5	
19-TCD			3,3	
20-IUCC	660	4,4	1,6	281,6%
21A-INFN	1782	14,1	22,3	63,6%
21B-GARR			0,8	
22-VU	488	2,9	0,5	578,4%
23-RENAM	226	1,6	1,3	129,1%
24-UOM	393	2,6	3,6	70,7%
25-UKIM	316	2,3	4,4	50,9%
26A-FOM	0	0,0	2,0	0,0%
26B-SARA	656,9	5,4	7,6	71,9%
27A-SIGMA			2,1	
27B-UIO	172,5	1,4	1,4	100,4%
27C-URA	197	1,5	0,7	220,4%
28A-CYFRONET	436	3,1	7,2	42,9%
28B-UWAR	56	0,4	0,4	95,1%
28C-ICBP	0	0,0	1,1	0,0%

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
28D-POLITECHNIKA WROCLAWSKA	66	0,5	1,0	47,2%
29-LIP	985	7,4	6,7	111,2%
30-IPB	1128	7,3	7,4	99,2%
31-ARNES			2,7	
31B-JSI			3,2	
32-UI SAV	726	5,6	6,0	93,1%
33-TUBITAK ULAKBIM	945	6,8	8,1	83,1%
34A-STFC	445,5	3,4	6,4	52,2%
34C-UG	260	2,0	3,6	55,9%
34D-IMPERIAL	264	2,0	3,6	54,6%
34E-MANCHESTER	437,5	3,2	3,6	87,8%
35-CERN	77		0,3	

36-UCPH	315	2,4	2,9	81,7%
38A-KTH	0	0,0	0,4	0,0%
38B-LIU	274	2,0	1,9	108,2%
38C-UMEA	408	3,0	3,0	100,7%
39-IMCS-UL	246	1,8	3,3	54,1%
40A-E-ARENA	7,3	0,1		
40B-SINP MSU	91,7	0,7	1,3	52,4%
40C-JINR	48	0,3	0,8	42,2%
40D-RRCKI	47,7	0,3	0,8	41,9%
40F-ITEP	44	0,3	0,8	41,9%
40G-PNPI			0,8	
51A-ICI	85	0,6	1,4	40,8%
51C-UPB			0,8	
51D-UVDT	84	0,6	0,6	98,5%
51E-UTC	0	0,0	0,6	0,0%
51H-INCAS			0,2	
51J-UB	15	0,1	0,1	79,1%
Sum:	**27660,1**	**200,6**	**248,2**	**80,8%**

WP5-E - SA2 Provisioning Soft. Infrastr. (EGI)

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	264	1,8	2,3	81,5%
9-CESNET	470	3,1	5,3	58,6%
10D-JUELICH			0,8	
12A-CSIC	420	3,4	3,3	101,4%
12B-FCTSG	279	2,0	1,1	189,1%
16A-GRNET	88,7	0,7	3,5	19,3%
16B-AUTH			0,8	
16E-IASA	0	0,0	0,8	0,0%
16F-ICCS	61	0,5	0,8	57,2%
21A-INFN			1,8	
29-LIP	434	3,3	4,4	74,9%
36-UCPH				
38B-LIU			0,7	
Sum:	**2016,7**	**14,8**	**25,5**	**57,8%**

WP5-N - SA2 Provisioning Soft. Infrastructure.

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	188	1.3	1.5	87.0%
9-CESNET	104	0.7	0.4	182.5%
10B-KIT-G	336.6	2.5	1.5	163.4%
10D-JUELICH	166.9	1.2	0.8	162.4%
10H-LUH	72	0.5	0.5	104.9%
12B-FCTSG	92	0.7	0.8	88.4%
14A-CNRS	133	1.0	1.3	80.9%
21A-INFN	380	3.0	2.8	109.7%
26B-SARA	0	0.0	0.8	0.0%
32-UI SAV	188	1.4	1.5	96.4%
34F-OXFORD	46	0.3	0.8	44.6%
38A-KTH	104	0.8	1.6	49.7%
Sum:	**1810.5**	**13.4**	**13.9**	**96.4%**

WP7-E - JRA1 Operational Tools (EGI)

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
10B-KIT-G	692	5,0	2,9	171,5%
12A-CSIC				
12B-FCTSG	17	0,1	0,8	16,3%
14A-CNRS	98	0,7	0,8	99,4%
16A-GRNET	65,9	0,5	0,8	66,9%
17-SRCE	112	0,8	0,8	103,2%
21A-INFN	168	1,3	1,5	88,9%
34A-STFC	362,8	2,7	1,5	182,4%
35-CERN	184	1,3	0,8	172,0%
Sum:	**1699,7**	**12,5**	**9,7**	**129,5%**

WP7-G - JRA1 Operational Tools

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
10H-LUH	220	1,6	1,1	142,4%
12A-CSIC				
12B-FCTSG	251	1,8	1,3	137,7%
14A-CNRS			3,5	
17-SRCE			0,2	
21A-INFN	271	2,2	1,6	132,4%
34A-STFC	232,8	1,8	1,9	93,6%
35-CERN			0,4	
Sum:	**974,8**	**7,3**	**10,0**	**73,2%**

WP8-S - SA4 Advancing EGIs Strategic Goals

Partner	Hours Declared	Pm Declared	Committed PM	Achieved PM
1-EGI.EU	0	0,0		0,0%
9-CESNET	725	4,8	3,7	130,8%
10D-JUELICH	196,1	1,4	0,9	167,0%
12A-CSIC	260	2,1	1,9	107,9%
12B-FCTSG	382	2,8	1,9	142,7%
14A-CNRS	724,2	5,5	5,9	92,6%
16A-GRNET	74,5	0,6	1,5	37,8%
17-SRCE	189	1,3	1,1	121,9%
18C-MTA SZTAKI			0,6	0,0%
21A-INFN	40	0,3	0,5	65,8%
26B-SARA	424	3,5	3,3	108,0%
28A-CYFRONET	130	0,9	2,5	37,0%
34A-STFC	252,2	1,9	4,5	42,3%
38A-KTH	120	0,9	1,3	69,1%
Sum:	**3517,0**	**26,0**	**29,6**	**87,9%**

I.17.4. Overall Financial Status

Selected period: PM40 to PM42 (August 2013 to October 2013)
Report extracted on 27 November 2013

Partner	Pm Declared	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
1-EGI.EU	42.0	55.8	75.3%	372,960.0	236,309.1
2-UPT	0.0	1.9	0.0%	0.0	0.0
3-IIAP NAS RA	5.7	1.6	362.2%	16,858.4	5,563.3
5A-IICT-BAS	0.9	2.6	33.5%	5,232.9	1,726.8
5B-IOCCP-BAS	0.0	0.5	0.0%	0.0	0.0
5C-NIGGG-BAS	1.3	1.5	89.3%	8,176.3	2,698.2
6-UIIP NASB	0.3	1.9	15.2%	1,097.1	362.1
7A-ETH ZURICH	1.1	2.4	48.0%	9,694.2	3,199.1
7B-UZH	0.9	1.5	60.9%	6,333.7	2,090.1
7C-SWITCH	1.1	2.6	41.4%	14,750.5	4,867.7
8-UCY	0.4	3.8	10.9%	3,540.3	1,168.3
9-CESNET	21.1	21.3	99.0%	138,706.4	66,811.6
10B-KIT-G	26.9	19.1	140.8%	238,973.2	95,696.7
10C-DESY	1.0	1.9	52.6%	9,067.7	2,992.3
10D-JUELICH	5.6	4.2	132.4%	49,409.5	23,325.9
10E-BADW	8.5	3.0	284.4%	75,890.3	25,043.8
10G-FRAUNHOFER	1.2	1.9	62.9%	10,732.3	3,541.7
10H-LUH	3.5	3.1	126.0%	30,830.2	11,171.4
11-UNI BL	3.2	4.7	68.3%	13,056.0	4,308.5
12A-CSIC	13.5	10.9	123.3%	105,525.2	46,811.4
12B-FCTSG	17.7	10.7	165.0%	138,123.2	59,938.4

Partner	Pm Declared	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
12C-CIEMAT	2.6	2.4	108.8%	20,204.3	6,667.4
12D-UPVLC	0.4	3.6	10.1%	2,814.8	928.9
12E-IFAE	3.4	2.9	117.4%	26,396.9	8,711.0
12F-RED.ES	6.1	3.3	186.9%	47,504.1	15,676.4
12G-UNIZAR-I3A	2.5	3.3	77.0%	19,578.8	6,461.0
12H-UAB	4.5	2.5	179.7%	35,128.3	11,592.3
13-CSC	2.3	6.7	33.6%	23,314.5	7,693.8
14A-CNRS	21.7	28.8	75.5%	187,803.8	84,150.3
14B-CEA	8.1	4.7	172.2%	69,750.8	23,017.8
14C-HealthGrid		0.2			
15-GRENA	1.5	1.4	105.5%	3,748.6	1,237.0
16A-GRNET	9.4	19.2	48.8%	72,593.8	33,517.5
16B-AUTH		1.6			
16C-CTI	0.3	0.8	33.8%	2,123.0	700.6
16D-FORTH	0.2	0.8	28.1%	1,769.1	583.8
16E-IASA	0.0	1.2	0.0%	0.0	0.0
16F-ICCS	0.5	0.8	57.2%	3,597.3	1,798.6
16G-UI		0.5			
16H-UP	0.6	0.6	97.5%	4,717.7	1,556.8
17-SRCE	9.7	8.9	108.0%	47,931.4	22,280.9
18A-MTA KFKI	4.1	4.4	93.0%	16,071.3	5,303.5
18B-BME	1.3	2.2	57.6%	7,097.1	2,342.1
18C-MTA SZTAKI		2.0			
19-TCD		3.6			
20-IUCC	6.4	2.1	307.6%	83,121.1	27,430.0
21A-INFN	34.7	37.3	93.3%	227,065.3	88,610.5
21B-GARR		1.5			
22-VU	5.0	1.3	374.0%	41,809.5	13,797.1

Partner	Pm Declared	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
23-RENAM	1.8	1.3	134.5%	5,421.4	1,789.1
24-UOM	2.6	3.6	70.7%	6,135.9	2,024.9
25-UKIM	2.3	4.4	50.9%	9,028.6	2,979.4
26A-FOM	0.3	3.5	8.9%	3,148.8	1,039.1
26B-SARA	10.1	13.4	75.7%	103,676.8	50,637.3
27A-SIGMA		2.7			
27B-UIO	1.4	1.8	78.9%	13,689.6	4,517.6
27C-URA	1.5	1.4	110.2%	15,032.6	4,960.8
28A-CYFRONET	4.5	12.4	36.0%	38,215.7	16,368.3
28B-UWAR	0.6	1.3	48.8%	5,355.1	1,767.2
28C-ICBP	0.0	1.7	0.0%	0.0	0.0
28D-POLITECHNIKA WROCLAWSKA	0.5	1.0	47.2%	4,016.3	1,325.4
29-LIP	15.0	15.2	98.4%	82,148.3	33,792.5
30-IPB	9.1	8.8	104.2%	49,900.3	16,467.1
31-ARNES		4.4			
31B-JSI		4.1			
32-UI SAV	9.8	9.8	108.8%	78,553.8	25,922.8
33-TUBITAK ULAKBIM	9.9	10.6	93.8%	69,696.0	22,999.7
34A-STFC	19.9	23.5	84.8%	204,759.7	96,978.7
34C-UG	2.0	3.8	52.9%	20,806.8	6,866.2
34D-IMPERIAL	2.0	3.9	51.1%	20,334.6	6,710.4
34E-MANCHESTER	3.2	3.9	82.1%	32,677.3	10,783.5
34F-OXFORD	0.3	0.8	89.2%	3,435.8	1,133.8
35-CERN	5.0	5.6	89.7%	71,865.4	35,932.7
36-UCPH	3.1	4.0	78.1%	34,234.5	11,297.4
38-VR-SNIC	0.0	0.1	0.0%	0.0	0.0
38A-KTH	1.7	4.1	40.6%	18,981.9	10,535.0

Partner	Pm Declared	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
38B-LIU	2.9	2.9	98.3%	32,879.4	12,492.5
38C-UMEA	3.0	3.0	100.7%	34,574.2	11,409.5
39-IMCS-UL	1.8	4.6	39.8%	14,448.0	4,767.8
40A-E-ARENA	0.1	1.2	4.4%	206.5	68.1
40B-SINP MSU	0.7	1.3	52.4%	2,593.8	856.0
40C-JINR	0.3	0.8	42.2%	1,357.7	448.0
40D-RRCKI	0.3	0.8	41.9%	1,349.2	445.2
40F-ITEP	0.3	0.8	41.9%	1,244.6	410.7
40G-PNPI		0.8			
41-NORDUNET					
51A-ICI	0.6	1.4	40.8%	3,407.5	1,124.5
51C-UPB		0.8			
51D-UVDT	0.6	0.6	98.5%	3,367.4	1,111.2
51E-UTC	0.0	0.6	0.0%	0.0	0.0
51H-INCAS		0.2			
51J-UB	0.1	0.1	79.1%	601.3	198.4
Totals	**398.2**	**476.1**	**84%**	**3,180,243.9**	**1,361,844.5**

I.18. Issues and mitigation

I.18.1. Deviations from the linear plan

Some partners are deviating from the linear plan committed to the project and they significantly over reported in this quarter:

- WP2-E: LIP, STFC,
- WP4-E: CESNET, KIT-G, JUELICH, FCTSG, SRCE, INFN, LIP, LIU
- WP7-E: STFC, CERN
- WP8-S: CESNET, JUELICH, FCTSG

Partners that over reported within Work Package 2-E, significantly under reported in Work Package 2-N.

Work Package 8 was over reported for some partners in QR13 due to the extra work expended during the start-up phase of the activity. Planning effort and end-dates of certain tasks has subsequently been adjusted. The slight under spend of the linear effort planned in QR14 reflects these adjustments.

Within the N-Work Packages, the deviations are not monitored as 67% of the efforts are funded by the members; more efforts reported within their limited budget are of benefit to the project.

I.19. Plans for the next period

An amendment will be prepared for the European Commission relating to the proposed 8 month project extension.

6. PROJECT METRICS

I.20. Overall Metrics

The Project Metrics are available from the EGI Metrics Portal – http://metrics.egi.eu

No	Objective Summary	Metrics	Achieved				Target
			PQ13	PQ14	PQ15	PQ16	PY4
PO1	Expansion of a nationally based production infrastructure	Total number of production resource centres that are part of EGI (EGI-InSPIRE and integrated partners) (M.SA1.Size.1)	337 (only certified sites)	**341 (only certified sites)**			345 (350) (355)
		Total number of job slots available in EGI-InSPIRE and integrated resource providers (M.SA1.Size.2a)	433,878	**436,922**			400,000 (425,000) (450,000)
		EGI monthly availability and reliability of Resource Centre (M.SA1.Operation.5)	95.41%/ 95.91%	**97.24%/ 97.96%**			97.0/97.5% (97.5/98.0%) (98.0/98.5%)
		Average monthly availability and reliability of NGI core middleware services (MSA1.Operation.4)	98.33%/ 98.53%	**99.29%/ 99.75%**			99.60/99.80% (99.65/99.85%) (99.67/99.87%)
		EGI monthly availability and reliability of critical central operations tools (MSA1.Operation.6a)	99.71%/ 99.91%	**97.39%/ 97.42%**			99.60/99.80% (99.65/99.85%) (99.67/99.87%)
		EGI monthly averaged VO availability and reliability (M.SA1.Operation.7)	97.27%/ 98.34%	**98.13% 99.04%**			98%/99% (98.5/99.0%) (98.7/99.2%)
PO2	Support of European researchers and international collaborators through VRCs	Number of papers from EGI Users (M.NA2.5)	9	**36**			70 (80) (90)
		Number of jobs done a day (M.SA1.Usage.1)	1.19 M (grid) 1.45 M	**1.61 M (grid and cloud)**			1.6 M (1.8 M)

			(grid and local)				(2.0 M)
PO3	Sustainable support for Heavy User Communities	Number of production sites supporting MPI (M.SA1.Integration.2)	80	**89**			90 (100) (120)
		Number of users from HUC VOs (M.SA1.VO.7)	11,656	**11569**			12,500 (13,000 (14,000)
		Total number of High Activity VOs (M.SA1.VO.5)	53	**45**			55 (60) (65)
PO4	Addition of new User Communities	Number of users from non-HUC VOs (M.SA1.VO.6)	10,368 (*)	**7,532(*)**			11,000 (11,500) (12,000)
		Public events organised (attendee days) (M.NA2.6)	210	**2137**			15,000 (17,000) (19,000)
PO5	Transparent integration of other infrastructures	Number of on-going Research Infrastructures/new communities being integrated (M.SA1.Integration.4)	5 (**)	**9 (***)**			5 (7) (9)
		MoUs with resource providers (M.NA2.10)	3	**4**			4 (5) (5)
PO6	Integration of new technologies and resources	Number of resource centres offering federated cloud services accessible to authorised users (M.SA2.16)	14	**19**			15 (20) (25)

(*) The value decreased in PQ13 and PQ14 due an on-going campaign aiming at decommissioning inactive VOs.

(**) DRIHM, EISCAT 3D, MAPPER, VERCE, VPH

(***) EISCAT, CTA, DREAM, VPH, Mapper, Lifewatch, GAIA, ENVRI, DCHRP

I.21. Activity Metrics

See the EGI Metrics Portal - *http://metrics.egi.eu/quarterly_report/QR14/*

I.22. Metrics – Detailed Summary

I.22.1. VO Jobs Review

During PQ14 all but two of the VO groups ran fewer jobs on the infrastructure than during PQ13. In all but three of the VO group, the jobs became larger, requiring more computing capacity from the resource sites. The growth in job size often compensated for the decrease in job numbers, resulting in an overall increase in CPU usage across most scientific disciplines. Specifically:

- Astronomy, Astrophysics and Astro-Particle Physics: 30% fewer jobs, but these jobs are larger than before, so CPU usage only dropped 13%
- Computational Chemistry: 6% more jobs, but overall the jobs became smaller, resulting a 20% drop in CPU usage
- Computer Science and Mathematics: 40% less jobs, but much larger jobs than before, resulting in a 40% increase in CPU usage
- Earth Sciences: 56% less jobs, but much larger jobs than before, resulting a 10% increase in CPU usage
- Fusion: 192% less jobs, but much larger jobs than before, resulting a 47% increase in CPU usage
- High-Energy Physics: 5% less jobs, but larger jobs than before, resulting a 6% increase in CPU usage
- Infrastructure: 6% more jobs, but much smaller jobs than before, resulting a 262% decrease in CPU usage
- Life Sciences: 12% more jobs, but smaller jobs than before, resulting a 17% decrease in CPU usage
- Multidisciplinary VOs: 41% less jobs, but much larger jobs than before, resulting a 53% increase in CPU usage
- Others: 788% less jobs, but these jobs are much larger than before, so CPU usage dropped only 8%
- Unknown: 145% less jobs, but these jobs are larger than before, so CPU usage dropped 87%

I.22.2. New VOs Review

Three new VOs have been established during PQ14:

- projects.nl: A generic, national VO for NGI_NL projects. The VO is used for isolated projects from various disciplines that do not fit in the existing NGI_NL VOs.
- cernatschool.org: A multidisciplinary VO with national scope in the UK to represent the CERN@school project on the Grid. CERN@school aims to bring CERN technology into the classroom to aid with the teaching of physics and to inspire the next generation of scientists and engineers. The CERN@school VO will allow students and teachers involved with the project to harness GridPP to store and analyse data from the CERN@school detectors, the LUCID experiment and the associated GEANT4 simulations.

- peachnote.com: A global VO to support on the EGI Federated Cloud for the Peachnote music score search engine and analysis platform. It seeks to do for music scores what Google Books Search is for books. During the same period, 3 VOs have been closed: minos.vo.gridpp.ac.uk, vo.ucad.sn, cyclops, and the decommissioning of a further 11 VOs has started. The higher than usual number of decommissioning was triggered by the request that EGI.eu sent during PQ14 to VO managers to ask them the update of their VO ID cards in the Operations Portal. The managers of unused VOs typically requested the decommissioning of their VO.

I.22.3. New Users Review

The number of users within any of the VO groups did not change significantly during PQ14. The most significant change was in the HEP and Infrastructure VO groups, in these the number of users decreased with 3% (from 8783 to 8494 in HEP and from 2905 to 2809 in Infrastructure). The user statistics are still missing the number of users who access EGI with robot certificates. The JA1 team has been requested to implement an improved accounting method that can capture the active robot users (for example by tracking their jobs using unique VOMS extensions).

7. ANNEX A1: DISSEMINATION AND USE

I.23. Main Project and Activity Meetings

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
8 October 2013	CERN	Tracking Tools Evolution TF meeting on savannah, jira and a new ggus dev. item	8	https://indico.cern.ch/conferenceDisplay.py?confId=272822
8 October 2013	CERN	3rd savannah-ggus-cms meeting for the WLCG tracktools TF	5	https://indico.cern.ch/conferenceDisplay.py?confId=272817
9 October 2013	CERN	2nd meeting on savannah-to-jira migration of the GGUS dev. tracker for the WLCG tracktools TF	4	http://indico.cern.ch/conferenceDisplay.py?confId=272814

I.24. Conferences/Workshops Organised

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
5 Sep 2013	Amsterdam Chaired webinar	EGI Webinar on CVMFS infrastructure for EGI VOs	45	https://indico.egi.eu/indico/conferenceModification.py?confId=1809
16 Sep 2013	Madrid	EGI TF13	350	https://indico.egi.eu/indico/conferenceDisplay.py?confId=1417
23 Oct 2013	Amsterdam Chaired webinar	EGI Webinar on GSI-SSHTerm	40	https://indico.egi.eu/indico/conferenceDisplay.py?confId=1786
17.10.2013	Online	Meeting	Institute for Informatics and Automation Problems (Armenia, National academy of sciences) + United Institute of Informatics Problems (Belarus, National academy of sciences)	A work program on establishing a joint grid-infrastructure for hydrometeorology research

27 September, 2013	Evagoras Lanitis Centre Limassol	European Researcher's Night, 27 September 2013	150	LINC participated in the annual European Researcher's Night "Exploring science through fun learning", introducing to the public the research activities of the laboratory. The Cyprus 2013 event with theme "Science Rocks" took place in Limassol. http://grid.ucy.ac.cy/index.php/news/103-researchers-night-2013
August 26-30, 2013	Karlsruhe, Germany	GridKa School 2013 "Big Data, Clouds and Grids"	World-wide Grid experts and students	http://gridka-school.scc.kit.edu/2013/index.php
August 26-30, 2013	Karlsruhe, Germany	EGI CSIRT - Security training at GridKa School 2013	security staff	https://wiki.egi.eu/wiki/EGI_CSIRT:Main_Page
17-Sep-13	Madrid, Spain	New developments in WLCG for Run2	M. Salichos, G. Donvito, P. Saiz, J. Flix and J. Pina	A workshop within the EGI Tehcnical Forum celebrated in Madrid from 16-20 September 2013. The link to the session, chaired by J. Flix and M. Delfino, is available in: https://indico.egi.eu/indico/sessionDisplay.py?sessionId=53&confId=1417#20130917
19-20 Sep 2013	Madrid, Spain	IBERGRID 2013, 7th Iberian Grid Infrastructure Conference	(~50)	The 2013 IBERGRID conference was organized by IBERGRID (ES-NGI and PT-NGI), in Madrid and co-located with the EGI Technical Forum 2013. The main topics of IBERGRID 2013 Conference were:
30.9-01.10	CSCS, Lugano (CH)	GridKa Cloud T1-T2 yearly face to face	25	ATLAS German cloud sites' technical solutions discussed. Direct contact between CSCS admins and ATLAS operation experts, https://indico.cern.ch/conferenceDisplay.py?confId=261676
16-Sep-13	Madrid	Training Workshop at EGI Tech Forum	2	

I.25. Other Conferences/Workshops Attended

Date	Location	Title	Participants	Outcome (Short report & Document Server URL to presentations made)
9-11 Sep 2013	Bucharest, RO	EUGridPM A Plenary Meeting	17	URL event: https://www.eugridpma.org/meetings/2013-09/ URL report: https://www.eugridpma.org/meetings/2013-09/summary-eugridpma-2013-09-bucharest.txt
24-25 Sep 2013	Imperial College, London	GridPP 31 – UK Grid for LHC Collaboration Meeting	60	http://www.gridpp.ac.uk/gridpp31/
30 Sep - 3 Oct 2013	Helsinki	VAMP, REFEDS, FIM4R Identity Management Meeting		http://www.terena.org/activities/vamp/ws2/ Attended this meeting discussing progress and plans for federated IdM in eResearch
7-9 Oct 2013	Linkoping, Sweden	Join EGI/PRACE/EUDAT Security Training Group		https://www.nsc.liu.se/joint-sec-training/ Planning future collaboration on security operations, presentation of SCI
14-18 Oct 2013	Amsterdam	CHEP 2013		http://www.chep2013.org Spoke on SCI work in a parallel session on Infrastructures

September 23-27, 2013	Yerevan, Armenia	The 9th International Conference on Computer Science and Information Technologies	Computer Science and Information Technologies experts	http://www.csit.am/, H. Astsatryan made presentation "Deployment of a Federated Cloud Infrastructure in the Black Sea Region"
September 23-27, 2013	Yerevan, Armenia	The 9th International Conference on Computer Science and Information Technologies	Computer Science and Information Technologies experts	http://www.csit.am/, A. Mirzoyan made presentation "Environment for Access to the Inventory of Stationary Point Sources of Emissions of Air Pollutants in Armenia"
September 06-14, 2013	Varna, Bulgaria	XXIV International Symposium on Nuclear Electronics and Computing	Computer Science and High Energy Physics experts	http://nec2013.jinr.ru, H. Oganezov made presentation on TIER3 facilities in Armenia"
23-27.09.2013	Yerevan, Armenia	International Conference on Computer Science and Information Technologies (CSIT'2013), HORIZON 2020 Eastern Partnership Information Day, PICTURE project workshop.	different countries	Establishment of contacts between specialists in grid-technologies and new project ideas.
16.-20. September 2013	Madrid, Spain	EGI Technical Forum	Dobrisa Dobrenic, Emir Imamagic	http://tf2013.egi.eu/
September 16-20	Madrid	EGI Technical Forum	10	https://indico.egi.eu/indico/conferenceDisplay.py?confId=1417
October 7-9	Linköping, Sweden	EGI/PRACE/EUDAT Joint Security Training and Workshop	1	
October 14-18	Amsterdam	CHEP	1	http://indico.cern.ch/conferenceTimeTable.py?confId=214784#20131014
16/9-20/9	Madrid	EGI TF 2013	Christian Soettrup, Anders Waananen	
1/10-4/10	Visegrad	Nordugrid workshop	Christian Soettrup	Helping Super Computer clusters connect to the EGI infrastructure. http://indico.hep.lu.se//conferenceDisplay.py?confId=1362
16.-20.9.	Madrid	EGI Technical Forum	Ulf Tigerstedt, Luis Alves, Jura Tarus, Per Öster	
13.10.	Linköping	EGI/PRACE/EUDAT joint security event	Luis Alves	
15-20/09	Madrid	EGI-TF	15	http://tf2013.egi.eu/
14-18/10	Amsterdam	CHEP2013	10	http://www.chep2013.org/
27/10-01/11	Ann Arbor	HEPiX Fall2013	5	http://indico.cern.ch/conferenceDisplay.py?ovw=True&confId=247864
September 16-20, 2013	Madrid	EGI Technical Forum	DESY-HH, LRZ, KIT	https://indico.egi.eu/indico/conferenceDisplay.py?confId=1417
19-Sep-13	Madrid	GlobusEurope	LRZ	http://www.egcf.eu/events/globuseurope-2013/
Sep. 30-01.Oct., 2013	Lugano	ATLAS gridka Cloud F2F meeting	Wuppertal	http://www.lhep.unibe.ch/gsciacca/GridKa-f2f-2013.html

October 14-18, 2013	Amsterdam	CHEP 2013	DESY-HH	Poster: Job Scheduling in Grid Farms
Sep 16-20	Madrid	EGI-TF		http://tf2013.egi.eu/
22-Oct		TCB and H2020		https://indico.egi.eu/indico/conferenceDisplay.py?confId=1906
Sep 16-20	Madrid	EGI-TF		http://tf2013.egi.eu/
22-Oct		TCB and H2020		https://indico.egi.eu/indico/conferenceDisplay.py?confId=1906
11-13 Sep 2013	Salamanca, Spain	HAIS	1	Conference Programe URL: http://hais13.usal.es/
16-20 Sep 2013	Madrid, Spain	EGI Technical Forum 2013	(~50)	Conference Programe URL: http://tf2013.egi.eu/
16-20 Sep 2013	Madrid, Spain	LIFEWATCH workshop at EGI TF 2013	1	
17-20 Sep 2013	Madrid, Spain	CAEPIA	1	Conference Programe URL: http://caepia13.aepia.org/
19-20 Sep 2013	Madrid, Spain	IBERGRID 2013, 7th Iberian Grid Infrastructure Conference	(~50)	Conference Programe URL: http://www.ibergrid.eu/2013/programme.html
19-20 Sep 2013	Barcelona, Spain	European Conference on Complex Systems 2013	1	Conference Programe URL: http://www.eccs13.eu/
22-27 Sep 2013	Oxford (UK)	EFTC2013	1	Conference Programe URL: http://www.eftc2013.org.uk/
14-Oct-13	Amsterdam	CHEP2013	6	Conference Programe URL: http://www.chep2013.org/
September 16-20, 2013	Madrid	EGI Technical Forum	~12 people from INFN	https://indico.egi.eu/indico/conferenceDisplay.py?confId=1417
20-23.08.13	Chisinau, IMI ASM	International Workshop on Intelligent Information Systems	Representatives from research institutions of the Academy of Sciences and universities of Moldova, R&D representatives from European countries	Inga Titchiev presented joint report: Inga Titchiev, Nicolai Iliuha, Mircea Petic. "Workflow Petri nets used in modeling of Parallel architectures" Elena Gutuleac presented joint report: Boris Rybakin, Grigore Secrieru, Elena Gutuleac. "Numerical analysis of reaction of buried charge to explosive or seismic loading" , "Deployment of a Federated Cloud Infrastructure in the Black Sea Region".walhers?)
23-27.09.13	Erevan, Armenia	Conference: Computer Science and Information Technologies. CSIT	R&D representatives from European countries	Tree articles were published: 1. "e-Infrastructures for Research and Education in Eastern Europe Partnership Countries"; 2. "Deployment of a Federated Cloud Infrastructure in the Black Sea Region".walhers?) 3. "Rising Skill of Young Researches of Moldova in Using High Performance Technologies"
26-28.09.13	Constanta, Romania	Network Architecture for the Development of Scientific Computing Infrastructure in Moldova	R&D representatives from European countries	Dr. Peter Bogatencov presented joint report: Dr. Peter Bogatencov, Dr. Grigore Secrieru and Nicolai Iliuha. "Network Architecture for the Development of Scientific Computing Infrastructure in Moldova"
16-20.09.2013	Madrid, Spain	EGI Technical Forum	16	http://tf2013.egi.eu/

16/09/2013	Madrid, Spain	EGI Technical Forum 2013	~500	The most significant event of the year dedicated to EGI Initiative - EGI Tehnical Forum 2013 was held in Madrid, Spain between 16 - 20 September 2013. Through numerous training sessions, lectures, posters, meetings and demonstration the forum provided current state in E-Infrastructure in Europe, ideas and visions.
2013-09-16 - 20	Madrid	EGI Technical Forum Madrid	4	
23/10/2013	Lausanne	HPC-CH Forum	Michael Rolli, Nico Faerber	
9-11 September 2013	Bucharest	EUGridPMA Meeting	1	http://agenda.nikhef.nl represented WLCG and EGI
16-19 September 2013	Madrid	EGI Technical Forum	7	Poster and presentations - GocDBv5
24-25 September 2012	London	GridPP31	3	Presentation on Accounting. http://www.gridpp.ac.uk/gridpp31/
30 September - 3 October 2013	Helsinki	VAMP/REFEDS/FIM4R Identity Management Meetings	1	http://www.terena.org/activities/vamp/ws2/. Progress plan for federated IdM in eResearch
7-9 October	Linkoping, Sweden	EGI/PRACE/EUDAT Security training and workshop	1	https://www.nsc.liu.se/joint-sec-training/ Planning future collaboration on security operations
16-18 October 2013	Amsterdam	CHEP 2013	2	http://www.cehp2013.org spoke on SCI work in a parallel session on Infrastructures

I.26. Publications

Publication title	**Journal / Proceedings title**	**DOI code**	**Journal references** *Volume number* *Issue* *Pages from - to*	**Authors**
Poster: Handling Worldwide LHC Computing Grid Critical Service Incidents	CHEP2013			HD, GG
More computing resources at no cost: Desktop Grids	Inspired newsletter		Issue 13	Robert Lovas
Cloud resources at BIFI	EGI Technical Forum 2013 Conference Abstract		https://indico.egi.eu/indico/contributionDisplay.py?sessionId=11&contribId=115&confId=1417	J. Ibar et al
Running Hadoop in the cloud	EGI Technical Forum 2013 Conference Abstract		https://indico.egi.eu/indico/contributionDisplay.py?sessionId=11&contribId=115&confId=1417	A. Simon et al

Managing and using interoperable DCIs through a standard-based Science Gateway	EGI Technical Forum 2013 Conference Abstract		https://indico.egi.eu/indico/contributionDisplay.py?sessionId=1&contribId=11&confId=1662	M. Díaz et al
Standard-based Interoperability amongst HPC, Grid and Cloud Resources Distributed Worldwide with Catania Science Gateways	EGI Technical Forum 2013 Conference Abstract		https://indico.egi.eu/indico/contributionDisplay.py?contribId=189&confId=1417	M. Rodríguez-Pascual et al
Towards an Agile Infrastructure: IFCA experience	EGI Technical Forum 2013 Conference Proceedings		https://indico.egi.eu/indico/contributionDisplay.py?sessionId=27&contribId=256&confId=1417	Pablo Orviz, Alvaro Lopez
SPARKS, a dynamic power-aware approach for managing computing cluster resources	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 3-15	G. Borges et al
Towards Federated Cloud Image Management	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 33-44	A. Simon et al
Graph Database for Structured Radiology Reporting	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 61-74	I. Blanquer et al
Big data and urban mobility	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 75-88	A. Tugores et al
Analyzing File Access Patterns in Distributed File-systems	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 89-101	J. Gomes et al
Studying the improving of data locality on distributed Grid applications in bioinformatics	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 103-115	I. Blanquer et al
Platform to Ease the Deployment and Improve the Availability of TRENCADIS Infrastructure	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 133-145	M. Caballer et al
Analysis of Scientific Cloud Computing requirements	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 147-158	Alvaro Lopez et al
Easing the Structural Analysis Migration to the cloud	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 159-171	M. Caballer et al

Leveraging Hybrid Data Infrastructure for Ecological Niche Modeling: The EUBrazilOpenBio Experience	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 175-187	I. Blanquer et al
An unattended and fault-tolerant approach for the execution of distributed applications	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 189-202	Manuel Rodríguez-Pascual et al
Calculation of Two-Point Angular Correlation Function: Implementations on Many-Cores and Multicores Processors	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 203-214	M. Cárdenas et al
Performance Assessment of a Chaos-based Image Cipher on Multi-GPU	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 215-226	J. Rodríguez et al
The LHC Tier1 at PIC: experience from first LHC run and getting prepared for the next	7th Iberian Grid Infrastructure Conference Proceedings		Ed.: Editorial Universitat Politècnica de València, ISBN: 978-84-9048-110-3, Pages: 241-253	J. Flix et al
Utilization of the Computational Resources Provided by HP-SEE Project	International Workshop on Intelligent Information Systems. 20-23 August, Chisinau, IMI ASM, 2013		Proceedings IIS2013, pp. 60-64, ISBN 978-9975-4237-1-7	1. Peter Bogatencov
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8. ANNEX A2: EGI CORE ACTIVITIES

The EGI core activities include the following services and tasks.

Name of service	Overview
1. Message Broker Network	The message broker network is a fundamental part of the operations infrastructure ensuring message exchange for monitoring, the operations dashboard and accounting. As such it is a critical infrastructure component whose continuity and high availability configuration must be ensured.
2. Operations Portal	EGI.eu provides a central portal for the operations community that offers a bundle of different capabilities, such as the broadcast tool, VO management facilities, a security dashboard and an operations dashboard that is used to display information about failing monitoring probes and to open tickets to the Resource Centres affected. The dashboard also supports the central grid oversight activities. It is fully interfaced with the EGI Helpdesk and the monitoring system through messaging. It is a critical component as it is used by all EGI Operations Centres to provide support to the respective Resource Centres. The Operations Portal provides tools supporting the daily running of operations of the entire infrastructure: grid oversight, security operations, VO management, broadcast, availability reporting.
3. Accounting Repository	The EGI Accounting Infrastructure is distributed. At a central level it includes the repositories for the persistent storage of usage records. The central databases are populated through individual usage records published by the Resource Centres, or through the publication of summarised usage records. The Accounting Infrastructure is essential in a service-oriented business model to record usage information.
4. Accounting Portal	The EGI Accounting Infrastructure is distributed. At a central level it includes the repositories for the persistent storage of usage records. The central databases are populated through individual usage records published by the Resource Centres, or through the publication of summarised usage records. The Accounting Infrastructure is essential in a service-oriented business model to record usage information. The Accounting Portal provides data accounting views for users, VO Managers, NGI operations and the general public.
5. Central monitoring services	Infrastructure operations requires in some cases monitoring activities to be run centrally to support specific activities, like monitoring of UserDN publishing in accounting records, GLUE information validation, and of software versions of deployed middleware.
6. SAM central services	Central systems are needed for accessing and archiving infrastructure monitoring results of the services provided at many levels (Resource Centres, NGIs and EGI.EU), for the generation of service level reports, and for the central monitoring of EGI.eu operational tools and other central monitoring needs.
7. Service registry	EGI relies on a central registry (GOCDB) to record information about

(GOCDB)	different entities such as the Operations Centres, the Resource Centres, service endpoints and the contact information and roles of people responsible for operations at different levels. GOCDB is a source of information for many other operational tools, such as the broadcast tool, the Aggregated Topology Provider, the Accounting Portal, etc.
8. Operations support services	Auxiliary services and activities are needed for the good running of Infrastructure Services. Examples of such services are VOMS service and VO membership management for infrastructural VOs (DTEAM, OPS), the provisioning of middleware services needed by the monitoring infrastructure (e.g. top-BDII and WMS), and catch-all services for emerging user communities and activities for service level management, service level reporting and service management in general.
9. Security monitoring and security operations support tools	EGI is an interconnected federation where a single vulnerable place may have a huge impact on the whole infrastructure. In order to recognise the risks and to address potential vulnerabilities in a timely manner, the EGI Security Monitoring provides an oversight of the infrastructure from the security standpoint. Also, sites connected to EGI differ significantly in the level of security and detecting weaknesses exposed by the sites allows the EGI security operations to contact the sites before the issue leads to an incident. Information produced by security monitoring is also important during assessment of new risks and vulnerabilities since it enables to identify the scope and impact of a potential security incident.
10. Security coordination	Security is recognised as an important aspect of e-Infrastructures and requires co-ordination between the EGI participants at various levels, in particular for the prevention and handling of incidents.
11. 1st & 2nd level support	EGI provides support to users and operators through a distributed helpdesk with central coordination (GGUS). The central helpdesk provides a single interface for support. Software-related tickets that reach the second level of support are analysed and if necessary are forwarded to 3rd line support units only when there are clear indications of a defect (in software, documentation, etc.).
12. Collaboration tools/IT support	The task provides the following services for the EGI collaboration, all the services requiring authentication must interface with SSO: EGI.eu Web site hosting and CMS maintenance; EGI main events dedicated webspace; EGI SSO; Including shibboleth access for third party services using SSO as ID provider; Wiki; Mailman; Forum; DocumentDB Indico; RT; Instant messaging (Jabber); RT must interface with the UMD software provisioning system. Tight cooperation with the provider of the UMD infrastructure is expected; Main DNS for egi.eu domain
13. Acceptance criteria	The quality criteria are the functional and non functional requirements that a product must fulfill to be released in UMD, these include generic requirement applicable to every product, and specific requirements applicable to the capabilities supported by a component.
14. Staged Rollout	The Staged Rollout is a procedure by which certified updates of the supported middleware are first tested by Early Adopter (EA) sites before

	being made available to all sites through the production repositories. This procedure permits to test an update in a production environment that exposes the product to more heterogeneous use cases than the certification and verification phase. This allows the discovery of potential issues and potentially to add mitigation information to the UMD release notes.
15. Software provisioning infrastructure	The software provisioning infrastructure provides the technical tools to support the UMD release process from pulling packages from the developers repositories to the build of a release.
16. Incident management helpdesk (GGUS)	EGI provides support to users and operators through a distributed helpdesk with central coordination (GGUS). The central helpdesk provides a single interface for support. The central system is interfaced to a variety of other ticketing systems at the NGI level in order to allow a bi-directional exchange of tickets.

8.1. Overview of costs

In order to match the EGI.eu budget in 2014, the technical description of the Core Activities was revised with the objective of reducing costs by provided a smaller set of functionality without impacting the operational structures of the infrastructure. Cost reductions have been achieved in agreement with the selected partners.

The EGI.eu co-funding rate of 40% was agreed with all selected partners. The following table indicates the partners selected to run EGI Core Activities and the related costs.

Service/Activity	Bidders	Sub task	Hardware and travel costs (Euro)	Allocated effort (PM/year)	Cost for EGI.eu (Euro/year)	EGI.eu Cost (40% co-funding)	Total Activity Cost (EGI.eu and NGI)
Message broker network	GRNET		0	2.5	6300	10620	26550
	SRCE		0	2.5	4320		
Operations Portal	CNRS		3500	24	62840	62840	157100
	GRNET		0	0	0		
Accounting repository	STFC		4800	12	38188	38188	95469
Accounting portal	CESGA		0	6	10152	10152	25380
EGI central monitoring services	GRNET		0	6.5	16380	25884	64710
	SRCE		0	5.5	9504		
SAM central services	SRCE		2500	10	18280	63960	159900
	GRNET		0	10	25200		
	CNRS		0	8	20480		
Service Registry (GOCDB)	STFC		5581	6	32385	32385	80963
Operations Support Services	GRNET		0	2	5040	26160	65400
	CYFRONET		0	6	21120		

Security monitoring	CESNET		0	4	10240	10240	25600
Security coordination	STFC	SPG	5000	4	20236	89348	223371
		SVG	3000	4	16030		
	FOM	IGTF OGF	5000	2	12688		
		IRTF	3000	5	20400		
	SNIC	IRTF	3000	5	19994		
1st and 2nd level support	IberGrid		0	12	27072	62912	157280
	CESNET		0	14	35840		
Collabortion tools	CESNET		0	12	30720	30720	76800
Acceptance criteria	Ibergrid		0	10	22560	22560	56400
Staged rollout	Ibergrid		0	10	22560	22560	56400
Software provisioning infrastructure	GRNET		0	13	29328	47664	119160
	CESGA		12000	6	18336		
GGUS	KIT		18000	12	49896	49896	124740
TOTAL					**606089**	**606089**	**1515223**

I.27. Funded Work Distribution

The following table shows the distribution of effort per partner allocated to run a EGI Core Activity.

PM/year distribution per activity and per partner	GRNET	SRCE	CNRS	STFC	CESGA	CESNET	CYFRONET	NIKHEF	SNIC	IBERGRID	KIT
Message Broker Network	2.5	2.5									
Operations Portal			24								
Accounting Repository				12							
Accounting Portal					6						
SAM Central Services	10	10	8								
Monitoring Central Services	6.5	5.5									
Security Monitoring						4					
Service Registry				6							
Operations Support Services	2						6				
Security Coordination				8				7	5		
Collaboration Tools						12					
Acceptance Criteria										10	
Staged Rollout										10	
Software Provisioning	13				6						
1st and 2nd Level Support						14				12	
GGUS											12

TOTAL PMs/year	**34**	**18**	**32**	**26**	**12**	**30**	**6**	**7**	**5**	**32**	**12**