



# EGI-InSPIRE

## QUARTERLY REPORT PQ7

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#### Abstract

This report details the activity that has taken place during PQ7 of the EGI-InSPIRE project from the start of November 2011 to the end of January 2012.



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## II. DELIVERY SLIP

	Name	Partner/Activity	Date
<b>From</b>	Steven Newhouse	EGI.eu/NA1	22 <sup>nd</sup> February 2012
<b>Reviewed by</b>	<b>AMB &amp; PMB</b>		6 <sup>th</sup> March 2012
<b>Approved by</b>	<b>AMB &amp; PMB</b>		6 <sup>th</sup> March 2012

## III. DOCUMENT LOG

Issue	Date	Comment	Author/Partner
1	22 <sup>nd</sup> February 2012	First edited draft for AMB review	Steven Newhouse/EGI.eu
2	1 <sup>st</sup> March 2012	Second draft for PMB review	Steven Newhouse/EGI.eu
3	6 <sup>th</sup> March 2012	Final draft	Steven Newhouse/EGI.eu

## IV. 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.

## V. 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>

## VI. TERMINOLOGY

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



## 1. PROJECT SUMMARY

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

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

The objectives of the project are:

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

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

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



## VII. EXECUTIVE SUMMARY

This quarter saw the implementation of major changes in the project as a response to the 1<sup>st</sup> EC Review report. User support work (previously part of NA3) was transferred to SA1, and NA2 and NA3 were merged into a new NA2 that focused on Community Engagement through a number of sub-tasks. The NGI International Liaisons, contact points between European and national activities, were established to improve coordination of non-operational activities within EGI. These contact points provided a framework for bringing together experts from within the NGIs as Virtual Teams – short-lived teams designed to allow NGIs interested in a particular issue to work together on a topic for the eventual wider benefit of the community. Several virtual teams have been created, two have completed and a number are in their start-up phases.

The roadmap for the EGI production infrastructure for 2012 has been established and approved to include a campaign to decommission obsolete services, to push forward on GLUE 2.0 adoption, consolidation of security tools and risk assessment, exploring IPv6 adoption, consolidation of NGI core grid services, establishing Operational Level Agreements around the EGI.eu Global Tasks, and the completed integration of other middleware into EGI's operational tools.

As of Jan 2012 NGI performance will be reported upon monthly: underperforming NGIs will be requested to provide service improvement plans, and the set of grid services operated by NGIs whose availability is monitored will be gradually extended in the coming months.

Currently the main software platforms deployed (ARC, gLite, GLOBUS and UNICORE) lack the capability to publish service information (meta-data and dynamic information) through common interfaces and data representation schemata. Work has started to address this issue and provide a service discovery capability across the whole infrastructure by collecting NGI driven use cases, understanding how information systems are used with the operational tools and the development plans of EMI and IGE. Work will continue in this area over the coming months.

The Heavy User Community engagement with EGI continues with the HEP Dashboard for providing a VO oriented monitoring of the infrastructure and specific tools to manage job collections. New releases have been made from the GREIC (for accessing database through grid mechanisms) and SOMA2 (portal infrastructure for running computational chemistry workflows) teams. A&A has deployed a grid enabled version of VisIVO (which includes MPI support) has been made available to help visualise large datasets. The community level coordination within A&A was addressed by recognising that the different parts of the A&A community were working at different speeds and in different directions and would probably need to be recognised in EGI through separate VRCs. Work in ES on GENESI-DR and integration of data with Earth Science Grid continues.

Two releases were made of the Unified Middleware Distribution which provided an update to the Globus platform and important updates to various components from the EMI distribution.

The redesign and review of the website content – partly in response to the comments made during the EC review and partly as part of the continued review of the website – progressed for launch by the end of the project year. Articles were provided through a variety of communication channels including iSGTW, the EGI Blog, social media (through a newly developed social media strategy), the Public Sector Review magazine and the EGI Inspired newsletter.



Planning around the upcoming EGICF 2012 in Munich continued with the finalisation of the programme generated through the meeting's Programme Committee and the preparation of the website for the opening of registration at the end of January. An EGI presence was established at SuperComputing 2011 in Seattle, e-Science 2011 in Stockholm and at SciTechEurope 2011 in Brussels.

Technical outreach and support to new communities continued through updates and management of the content in the Training Marketplace and Application Database. To support the new activity taking place in the NGIs, a Customer Relationship Management (CRM) system has been established to help coordinate our engagement across new user communities.



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## 1. OPERATIONS

### 1.1. Summary

The SA1 activity roadmap for 2012 with the related milestones and timelines was presented at the OMB meeting in Amsterdam, and approved<sup>1</sup>. The expected achievements in 2012 include

- the implementation of the EGI security risk assessment plan and the consolidation of the security tools
- a middleware upgrade campaign to decommission obsolete services and foster GLUE 2.0 adoption, the definition of EGI service decommissioning procedures
- a revision of staged rollout activities
- the definition of a GLUE 2.0 EGI profile
- the completion of the Operational Level Agreement (OLA) framework – including EGI.eu Global Tasks
- the extension of the availability and reliability computation and reporting framework to include statistics about EGI.eu and NGI services
- the consolidation of reliability of NGI core grid services
- the completed integration of ARC, GLOBUS, UNICORE and the EDGI desktop grid platform
- the upgrade of the central accounting infrastructure to SSM (Secure Stomp Manager)
- the assessment of IPv6 readiness of a selected group of grid services

Updated version of the Resource Centre OLA and Resource infrastructure Provider OLA were presented to the January OMB for discussion<sup>2</sup>. An EGI-specific new extended profile (ROC\_CRITICAL<sup>3</sup>) for Availability and Reliability computation was approved by the OMB and came into force as of Jan 2012. The impact of the extensions introduced was thoroughly assessed in November and December to prepare NGIs to this change.

The information discovery service deployment across EGI was assessed and guidelines for the enhancement of the top-BDII performance were distributed. NGIs relying on the deployment of the CERN top-BDII instance were requested to deploy an own service and a list of authoritative top-BDIIs – whose usage is recommended to end-users in each NGI – was defined<sup>4</sup>.

As of Jan 2012 NGI performance will be reported upon monthly: underperforming NGIs will be requested to provide service improvement plans, and the set of grid services operated by NGIs whose availability is monitored will be gradually extended in the coming months.

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<sup>1</sup> [https://wiki.egi.eu/wiki/EGI-inSPIRE\\_SA1#2012](https://wiki.egi.eu/wiki/EGI-inSPIRE_SA1#2012)

<sup>2</sup> <https://documents.egi.eu/document/31> and <https://documents.egi.eu/document/463>

<sup>3</sup> [http://grid-monitoring.cern.ch/myegi/sam-pi/metrics\\_in\\_profiles?vo\\_name=ops&profile\\_name=ROC\\_CRITICAL](http://grid-monitoring.cern.ch/myegi/sam-pi/metrics_in_profiles?vo_name=ops&profile_name=ROC_CRITICAL)

<sup>4</sup> [https://wiki.egi.eu/wiki/Top-BDII\\_list\\_for\\_NGI](https://wiki.egi.eu/wiki/Top-BDII_list_for_NGI)



The operations roles defined in GOCDB were reviewed and a new proposal was discussed at the January 2012 meeting of the OMB. This review is needed to identify the roles of those responsible at an NGI level and at a Resource Centre level of the acceptance of security policies, and of the RC and RP OLAs.

The second release of the security dashboard prototype was validated in December and January, and a final version is expected at the end of PY2. The security challenge framework is being developed to support the SSC5 NGI run. SVG has significantly improved co-ordination of fixing of issues and release of advisories, with EMI and the EGI DMSU. SVG received the report on the Vulnerability Assessment of VOMS core from EMI.

CSIRT issued two security alerts of which one is “critical” and the second “high risk”, and handled 3 security incidents; SVG has handled 11 reported software vulnerabilities and issued 4 advisories.

Staged Rollout activities were carried out in preparation to the release of UMD 1.4 (19 Dec 2011) and UMD 1.5 release (30 Jan 2012). 30 products entered staged rollout and were included in UMD 1.4.0 and 1.5.0, none was rejected. 50 tests in total have been conducted. The EA teams currently amount to 56.

Operations interoperations focused on two activities:

1. the need of an integrated information system
2. the integration of desktop grid software into the Service Availability Monitoring framework and the service registry (GOCDB)

Currently the main software platforms deployed (ARC, gLite, GLOBUS and UNICORE) lack the capability to publish service information (meta-data and dynamic information) through common interfaces and data representation schemata. Because of this, service discovery across the whole infrastructure is currently not possible. A workshop was held on the 1<sup>st</sup> of December<sup>5</sup> to assess:

1. the operations use cases in collaboration with NGI\_CH, NGI\_DE, NGI\_NDGF, NGI\_PL and NGI\_NDGF;
2. the current usage and dependencies of the information discovery system of the various operations tools (in collaboration with JRA1);
3. the development plans of the technology providers (EMI and IGE).

As output of the workshop, various integration requirements were identified and submitted to the technology providers and the teams responsible of tool development (JRA1). A follow-up workshop will take place during the EGICF 2012.

Two software upgrades were applied to the message broker network to improve load distribution across the broker instances, reliability of message delivery and the automatic clearing of inactive connections. GOCDB was upgraded to version 4.2 on November 25<sup>th</sup>. Two different upgrades of the central Operations Portal were rolled into production (v. 2.7 and 2.8). Six new Nagios metrics were turned to OPERATIONS in order to raise alarms in the operations dashboard in case of failure. SAM Update 15 was released at the end of November and subsequently rolled to production.

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<sup>5</sup> <https://www.egi.eu/indico/conferenceDisplay.py?confId=654>



Two releases of GGUS were deployed, the latter bringing an enhanced GGUS web interface for the user.

The central grid oversight team was engaged in the definition of a NGI metric to estimate the quality of the support services (ROD performance index) and of a metric – which will be prototyped in March – which will be introduced to automatically notify Resource Centres that are underperforming as soon as the problem appears and before end of the calendar month. From Jan 2012 COD is monitoring the quality of the measurement results collected with SAM to make sure that the percentage of UNKNOWN monitoring test results at an NGI level does not exceed 10%. The implementation of a IPv6 testbed for testing of readiness of operational tools and various grid products was discussed and a testing plan was defined in collaboration with HEPIX and EMI.

Three surveys were distributed to collect feedback about: the need of SLURM support in EMI, the perceived quality of the EGI.eu Global Services (in preparation to MS 115) and the sustainability of NGI operational services<sup>6</sup>.

EGI regularly contributed to the works of the WLCG operations technology group for the enhancement of operational services tailored to the WLCG user community.

Three OMB meeting were organized in PQ7, and fortnightly operations meetings were regularly held to discuss middleware deployment and release plans with the NGIs<sup>7</sup>.

An extensive list of middleware requirements was collected, discussed and prioritized in preparation to the TCB February meeting<sup>8</sup>.

## 1.2. Main achievements

### 1.2.1. Security

The second release of the security dashboard<sup>9</sup> - bringing several important improvements – was deployed centrally in December 2011 and validated. The enhancement of security dashboard is ongoing and the tool is expected to be in full production by end of PY2. The development of the security challenge framework for the streamlining of Security Service challenge tracking and reporting activities, continues. The SSC5 “NGI” run is expected to start in PQ8. The next CSIRT face to face meeting is being organized.

SVG has significantly improved co-ordination of fixing of issues and release of advisories, with EMI and EGI DMSU. SVG received the report on the Vulnerability Assessment of VOMS core from EMI.

CSIRT issued two security alerts of which one is “critical” and the second “high risk”, and handled 3 security incidents; SVG has handled 11 reported software vulnerabilities and issued 4 advisories.

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<sup>6</sup> [https://wiki.egi.eu/wiki/EGI\\_Operations\\_Surveys](https://wiki.egi.eu/wiki/EGI_Operations_Surveys)

<sup>7</sup> <https://wiki.egi.eu/wiki/Operations#Meetings>

<sup>8</sup> [https://wiki.egi.eu/wiki/OMB\\_Requirements](https://wiki.egi.eu/wiki/OMB_Requirements)

<sup>9</sup> <https://operations-portal.egi.eu/csiDashboard>



### 1.2.2. Service Deployment and Integration

Staged Rollout activities were carried out in preparation to the release of UMD 1.4 (19 Dec 2011) and UMD 1.5 release (30 Jan 2012). The number of EA teams has slightly increased.

All products from EMI and IGE are now covered by EAs, with the exception of FTS and VOMS/Oracle, for which it was decided not to support them in UMD due to their small deployment footprint. LFC/Oracle is deployed to support BIOMED and IN2P3 will participate to its staged rollout.

The staged rollout process is being analysed to reduce the time lag between the certification by technology provider and the start of validation and testing activities in EGI. A draft proposal was provided and is being evaluated by the SA2 partners.

The procedure for staged rollout of new CA trust anchor releases is being reviewed in order to allow sites more time for testing.

Operations interoperations focused on three activities: the need of an integrated information system, and the integration of desktop grid software into the Service Availability Monitoring framework and the service registry (GOCDB).

Currently the main software platforms deployed (ARC, gLite, GLOBUS and UNICORE) lack the capability to publish service information (meta-data and dynamic information) through common interfaces and data representation schema. Because of this, service discovery across the whole infrastructure is currently not possible. A workshop was held on the 01<sup>st</sup> of December<sup>10</sup> to assess:

1. the operations use cases in collaboration with NGI\_CH, NGI\_DE, NGI\_NDGF, NGI\_PL and NGI\_NDGF;
2. the current usage and dependencies of the information discovery system of the various operations tools (in collaboration with JRA1);
3. the development plans of the technology providers (EMI and IGE).

As output of the workshop, various integration requirements were identified and submitted to the technology providers and the teams responsible of tool development (JRA1). A follow-up meeting will take place during the EGICF 2012.

The integration of Desktop Grids into operational tools already started in PQ6 in collaboration with the European Desktop Grid Initiative (EDGI)<sup>11</sup>, continued. Three new service types were added to GOCDB<sup>12</sup>: dg.CREAM-CE (CREAM gateway to Desktop Grid), dg.ARC-CE (ARC gateway to Desktop Grid), dg.TargetSystemFactory (UNICORE gateway to Desktop Grid). The first version of the probe for monitoring Desktop Grids services was provided by the Desktop Grids team for integration into SAM.

### 1.2.3. Help desk & Support Activities

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<sup>10</sup> <https://www.egi.eu/indico/conferenceDisplay.py?confId=654>

<sup>11</sup> <http://edgi-project.eu/>

<sup>12</sup> <https://wiki.egi.eu/wiki/GOCDB/services#EDGI>



The implementation of the new report generator has started and a first prototype will be presented during the EGI CF 2012. All NGI helpdesks systems are integrated in GGUS (either in the form of interfaced helpdesk systems deployed locally by the NGIs or in the form of GGUS support units hosted on the central helpdesk instance of EGI. The interface between GGUS and Service NOW (the CERN helpdesk<sup>13</sup>) was fine tuned to improve the synchronization of the workflow. New support units were rolled to production: EMI UI, EMI WN and MPI User Support, while the GridMap support unit was decommissioned. VOs "israelvo.isragrid.org.il" and "shiwa-workflow.eu" were added to the list of VOs which provide support via GGUS.

The GGUS web interface was improved with the latest release rolled to production<sup>14</sup> providing:

- in case of concurrent ticket updates a warning is issued;
- Grid certificates now required for registration in GGUS, while still supporting a login/password access;
- The verification of tickets in status "solved" or "unsolved" is now automated;
- Mail templates were updated;
- The priority colour algorithm was updated.

Three issues of the Regional On Duty (ROD) teams newsletter<sup>15</sup> were released for better communication between the central grid oversight teams and the NGI support teams.

A new performance indicator (called "ROD performance index") was prototyped and now is rolled to production to measure NGI support performance on a monthly basis. The ROD performance index<sup>16</sup> is an indicator of the number of tickets and alarms that the NGI had trouble to handle in due course (it is the sum of the number of daily tickets "expired" and of daily pending alarms older than 72 hours).

NGIs with ROD performance index larger than 10 are supported to improve their on duty activities. This task is contributed to reduce the index, and a gradual decrease was observed during the months it was prototyped.

The underperforming Resource Centres are supported by COD, and suspended in case of prolonged low availability. COD is responsible of suspending these sites. COD also participated to the definition of the specifications of a Nagios test that will automate the notification of performance issues to sites, so that administrators are proactively warned and can take counter measures during the course of the month. The Nagios probe measures availability and computes it daily across the last 30 calendar days. It returns WARNING if  $70\% \leq \text{availability} \leq 75\%$ , and CRITICAL if  $\text{availability} < 70\%$ . A prototype version (provided by SRCE) will be available in March for testing.

During the last months several NGI SAM installations and sites were affected by problems that caused of a high percentage of UNKNOWN results. This can compromise the effectiveness of the service level management procedures, and of the monitoring infrastructure itself. COD carried out an analysis

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<sup>13</sup> <https://cern.service-now.com/service-portal/>

<sup>14</sup> <https://ggus.eu/pages/owl.php>

<sup>15</sup> <https://documents.egi.eu/document/298>

<sup>16</sup> [https://wiki.egi.eu/wiki/Grid\\_operations\\_oversight/ROD\\_performance\\_index](https://wiki.egi.eu/wiki/Grid_operations_oversight/ROD_performance_index)



of the various causes<sup>17</sup> as different factors can contribute to the problem. To proactively improve the quality of the monitoring results, from Jan 2012 if the percentage of UNKNOWN rest results exceeds 10%, COD will notify affected NGIs through a GGUS tickets.

Network support team finalized a IPv6 survey to collect expressions of interest from NGIs about participating to IPv6 readiness tests of the deployed technologies (ARC, gLite, GLOBUS, UNICORE)<sup>18</sup>. A collaboration framework with HEPIX and EMI was defined. The implementation of EGI IPv6 testbed is being prepared. In addition to this, the usage of the PerfSONAR MDM monitoring and HINTS tools was disseminated.

The operation of catch-all services continues including: WMS, LB and Top-BDII for site certification, site certification catch-all portal, and VOMS/VORMS service administration for the DTEAM VO<sup>19</sup>.

### User Support Teams:

Besides the standard operation of user support services (training, VO setup, consultancy, etc.) several NGIs invested work into the improvement of existing support services and the development of new tools and services. Particularly:

- Armenia: ARMNGI began support for ALICE, ATLAS and EnviroGrid VOs, as well as on networking issues for the same communities. Regular meetings with ARMNGI potential user communities have been taken place and new scientific software packages (NAMD, SAGE, CROMACS, WRF) have been integrated to computing sites and. The regular updates of the ARMNGI development plan has been carried out.
- Croatia: CRO NGI organized the annual meeting of the Croatian grid community – The Third CRO NGI Day. At the meeting grid community members presented their use cases, experiences and challenges with grid technology. Each presentation contained specific technical requests by users (e.g. improving user credential management, addition of specific applications) and suggestions on improving the user support. All requests were thoroughly discussed with the operations staff and requested changes were implemented. In order to keep grid community updated with status, activities and usage of national grid infrastructure, in October 2011 we started publishing monthly reports. Reports are written in Croatian language and contain important operations actions and usage statistics per institute in a given period. Reports are available on the following page: <http://www.cro-ngi.hr/izvjestaji/>.
- Cyprus: During PQ7, our support team got in contact with new users from Cyprus Institute who want to use the grid mainly for Data set download. We have provided to those users with basic training in order to start using the grid (MPI and OpenMP for LQCD calculations, LTools, UCNS3D - CFD Software, Metis/ParaMetis/ParMGridGen, PRACE). Besides this the NGI-CYGRID user support team continued to work with their current users from WLCG, Biomed, See,

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<sup>17</sup> [https://wiki.egi.eu/wiki/Grid\\_operations\\_oversight/Unknown\\_issue](https://wiki.egi.eu/wiki/Grid_operations_oversight/Unknown_issue)

<sup>18</sup> <https://wiki.egi.eu/wiki/IPv6>

<sup>19</sup> [https://wiki.egi.eu/wiki/Dteam\\_vo](https://wiki.egi.eu/wiki/Dteam_vo)



VOs providing them help and support on their applications e.g. R project, SimpleScalar Simulator, Scheduler Sim, and NS2.

- Czech Republic: Standard support activities (monitoring, helpdesk, etc.) continued in PQ7 to support current user communities (VOs VOCE, AUGER, BELLE,...) by the Operations Unit of the NGI. A Grid Computing Seminar<sup>20</sup> was organized as part of the MetaCentrum project by the CESNET association and the CERIT-SC Center (large cloud resource center in the Czech Republic). The main purpose of the event was to inform existing as well as potential users of high-performance computing about the state-of-the-art technologies available to solve a wide range of research issues and challenges.
- France: The France Grilles web site<sup>21</sup> has been completely refurbished in order to be more attractive for new user communities. The French site is on line and our team works on the English version of the site. France Grilles team supported new users from the CEFE laboratory who are porting their application on the grid for the first time. The CEFE is currently the largest French research center in Ecology. The BEDOFIH project, which aims to create a European intraday financial database, was selected by an international jury as one of 36 projects within the framework of the "Excellence facilities" (Equipex) program launched by the French government. This project will store its data in the France Grilles infrastructure (at the LPSC laboratory). CNRS, through Institut des Grilles et du Cloud and the LPSC laboratory is one of the BEDOFIH partners. The France Grilles publications collection set up during 2011 is growing and sums up to 103 articles now and 165 references of publications (55 for 2011).
- Georgia: Support users in solving their problems, regular meetings with NGI\_GE users to clarify and identify issues in the users support and inform them about possible new procedures. Regular updates of the NGI development plan in Georgia.

These cover:

- Meteorology: Investigation of Advanced Research WRF (ARW) modelling system for weather research and forecasting – Meteorology Department – national project.
- Biophysical Chemistry: Modeling of some biochemical processes with the purpose of realization of their thin and purposeful synthesis – Tbilisi State University and Sokhumi State University – national project.

GRENA together with these groups and research groups in High Energy Physics and Plasma Physics are discussing possibility of further development of Grid infrastructure in Georgia with the Ministry of Education and Science.

- Hungary: The operation of NGI\_HU user support team relies on the Operation procedure<sup>22</sup> where weekly shifts are defined for BME and SZTAKI. KFKI (Wigner RC) provides support for users within the institute. SZTAKI has set up a cloud infrastructure that – after the testing phase – will be opened for users of the Hungrid VO. The first event of e-Science Café was held on 14th November at the Obuda University. The covered topics included GPGPU, HPC, Cluster Grids,

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<sup>20</sup> <https://metavo.metacentrum.cz/en/seminars/seminar4/index.html>

<sup>21</sup> <http://www.france-grilles.fr/>

<sup>22</sup> [https://www.mgkk.hu/wiki/index.php?title=Operation\\_procedures](https://www.mgkk.hu/wiki/index.php?title=Operation_procedures)





Desktop Grids & Clouds. The event has been advertised in several national media, as a result of which 563 hits (345 unique) were counted on the event's website<sup>23</sup>. The event was attended by 51 people. Each presentation was subject to intense discussion afterwards, and from the feedback results the event can be considered highly successful (5.45 on the scale of 1-6). Release 3.4 of WS-PGRADE/gUSE portal environment has been released in January. Collaboration has started between Hungarian BioVel project members and the Grid Application Support (GASuC) team of SZTAKI for porting Biome-BCG Sensitivity Assessment Test to SZTAKI Desktop Grid in the form of Web Service based workflow.

- Ireland: TCD / NGL\_IE continues to provide a help desk and user support. In PQ7 this included support for existing astronomy research and new student research using GPU resources.
- Israel:
  - Supported users with running Gromacs (biochemical apps) jobs on the Grid.
  - Helped academic user (Biology, Technion) to run Fortran code that was compiled under Windows using Wine and appropriate libraries, on the Biomed VO of EGI. (~10000 jobs).
  - New website is up with lot of new and improved content, for example: Grid Intro tutorials and HOWTO's.
  - Our effort to insert Life science users shows results and we have lot of active users from various institutions. We support them from getting the certificate, via adapting their environment to the grid and also with scripts to collect the results.
- Italy: NGL\_IT completed the restructuring of its user support unit. Separate subgroups got established for technical support (porting new applications) and for training coordination, dissemination and event organization. Support for users and communities in this period were:
  - The pharmacological institute Mario Negri<sup>24</sup> based in Milan: some of their applications were ported to the NGL\_IT catch-all VO:
    - Matlab based applications
    - Computation Fluid Dynamics applications based on OPENFOAM package. This package is now available in some NGL\_IT sites with documentation<sup>25</sup>.
    - Statistical application based on the R package. R was ported and installed on various NGL\_IT sites. Documentation is under construction.
  - Technological Transfer institute "Istituto Superiore Mario Boella"<sup>26</sup>, Turin: interest in running a New Generation Sequencing workflow in the NGL\_IT cloud resources based on WNoDes. Tests are in a preliminary phase.
  - Astraproject.org: a Science Gateway was developed for the project with the support of the NGL.
  - INFN SPES experiment: the porting and license handling of ANSYS packages (in particular FLUENT and MULTIPHYSICS) were ported, and are now under testing and being documented<sup>27</sup>.

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<sup>23</sup> <http://www.lpds.sztaki.hu/roadshow/>

<sup>24</sup> <http://www.marionegri.it/mn/it/index.html>

<sup>25</sup> <https://wiki.italiangrid.it/twiki/bin/view/UserSupport/OpenFoam>

<sup>26</sup> <http://www.ismb.it/>



- National Institute of Astrophysics (INAF): ongoing discussions about the porting of the VISIVO system and its distribution to other communities and about distributed databases access.
- SPACI consortium and the ELETTRA synchrotron: ongoing discussion about their involvement focusing on the GREIC and Instrument Element systems.
- Naples University: discussion on possible collaborations has just started.
- The COMPCHEM VO:
  - focus was given to the porting of the CRYSTAL<sup>28</sup> and VolSurf+<sup>29</sup> applications. Both are licensed applications, so the COMPCHEM VO signed MoUs with the providers to regulate access and support:
    - For Crystal with the University of Turin
    - For VolSurf+ with the “Molecular Discovery” private company.
  - COMPCHEM VO continued the development of the GRIF framework and is collaborating with the NGI\_IT and the CINECA Supercomputing Centre on creating a prototype for the HTP-HPC bridge called HiPEG.

Dissemination activities in the quarter were focused on reviewing and updating: the NGI website content ([www.italiangrid.it](http://www.italiangrid.it)); the Grid tutorial video (activity ongoing); the NGI presentation brochure. Besides these, presentations were given at the Division of Computational Chemistry Congress (February); the COMCHEM VO setup an electronic magazine<sup>30</sup> (ISSN enabled) offering a forum for presenting the work carried out by Virtual Innovation, Research, Teaching & Learning Communities. The magazine is reachable at and is addressed mainly to the European Division of Computational Chemistry, the International Committee of the European Master of Theoretical Chemistry and Computational Modelling (TCCM), the European Chemistry Thematic Network (ECTN), EGI and IGI. The editorial board is coordinated by COMPCHEM through the MASTER-UP spinoff.

During PQ8, NGI\_IT will continue the activities started in PQ7 and is planning a series of meetings with other communities and with some of the national contacts of the ESFRI projects, focusing on those for which the Italian partners are the coordinators (i.e the EMSO project). Meetings are already planned with the representatives of the following communities:

- The INFN experiment GERDA
- The National Council of Research (CNR) about the D4Science and iMarine projects
- Elixir, Lifewatch and Biovel projects (the Bari and Milan partners)
- The National Institute for Geophysics and Volcanology (INGV) about the EMSO ESFRI project and other IT activities.
- Poland: Cooperation with CTA ESFRI is getting momentum. A close contact with CTA management in Poland has been established. New versions of CTA software have been

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<sup>27</sup> <https://wiki.italiangrid.it/twiki/bin/view/UserSupport/PortingDiSwANSYSPerSPESLNL>

<sup>28</sup> <http://www.crystal.unito.it/>

<sup>29</sup> [http://www.moldiscovery.com/soft\\_volsurf.php](http://www.moldiscovery.com/soft_volsurf.php)

<sup>30</sup> <http://www3.compchem.unipg.it/virtl-comm/>



successfully ported to NGI\_PL infrastructure. Integration of new functionalities required by CTA community into InSilicoLab work environment is progressing according to schedule. Execution of batches of jobs has been enabled together with implementation of a basic mechanism necessarily parse the results. Current efforts include adoption of InSilicoLab visualisation engine to specific CTA data requirements. Also there is undergoing work concerning second level of results analysis (so called trigger level) as well as improvements in a part responsible for optimisation of the mirror parameters. In addition help for CTA computations with and without InSilicoLab have been provided for CTA users from Poland.

- Portugal & Spain: Portugal together with Spain has produced a list of guidelines and best practices<sup>31</sup> to user support team members in the region. The documentation defines the procedures and the tools available for the shifters and user support shifts will start in a near future in order to provide a more systematic, coherent and integrated approach to user problems. Also the IBERCLOUD initiative has started and aims to provide a cloud infrastructure for IBERGRID users.
- Serbia: Due to strong advertisement of AEGIS and EGI to the user communities in Serbia, a significant increase of AEGIS VO members (more than 20%) was recorded during PQ7, the total number of members reached 111. As planned together with the Serbian chemistry community in PQ6, a set of programs for molecular modelling and cheminformatics provided by OpenEye software was deployed at the AEGIS01-IPB-SCL Grid site:
  - EON - an electrostatics comparison program which compares electrostatic potential maps of pre-aligned molecules and determines the Tanimoto measures for the comparison.
  - OMEGA - performs rapid conformational expansion of drug-like molecules.
  - ROCS - virtual screening tool which can rapidly identify potentially active compounds with a similar shape to a known lead compound.
  - QUACPAC - provides pKa and tautomer enumeration in order to get correct protonation states.
  - FRED (Fast Rigid Exhaustive Docking) - a protein-ligand docking program, which takes a multiconformer library/database and receptor file as input and outputs molecules of the input database most likely to bind to the receptor.

Regular maintenance operations of NGI\_AEGIS Helpdesk were performed together with the update of the AEGIS website.

- Slovakia: The main effort was focused on testing the EMI-1 functionality with emphasis on the submission of parallel jobs of type MPI, OpenMP, and hybrid MPI+OpenMP, using the MPI-Start software. Once the tests are finished the experiences will be reported to the related Virtual Team (MPI in EGI) We continued in supporting the researchers in the upgrading and porting their applications to the EGI infrastructure – we have dealt particularly with the FDS (Fire Dynamics Simulator) model, WRF (Weather Research and Forecasting) system, chemical DIRAC application (Atomic and Molecular Direct Iterative Relativistic All-electron Calculations), and application from the electronics domain.

In PQ8 we will continue in providing for the operation of the present NGI-SK infrastructure and its upgrading, and in supporting the scientific communities in the process of the development and running their applications on the cluster and grid.

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<sup>31</sup> [http://ibergrid.lip.pt/USP/technical\\_documents/User%20Support%20Shifts](http://ibergrid.lip.pt/USP/technical_documents/User%20Support%20Shifts)



- Switzerland: GC3Pie framework and AppPot frameworks have been adapted and used for a computational chemistry use case in collaboration with University of Perugia. Initial tests run on the Swiss national infrastructure were performed. Outcomes to be presented at the EGICF 2012.
- Turkey: We support users from the CMS and ATLAS experiments with Tier-2 centres. Typical problem that we solve relate to dataset transfer to these Tier-2 centers, or to the installation of specific software tools and documentation for job submission and data analyses for national users on User Interface. Furthermore, we began the organisation of a national conference<sup>32</sup> (National High Performance Computing Conference) for 12-14 April 2012, where researchers from all user communities will be represented. We expect about 120 researchers.

#### 1.2.4. Infrastructure Services

Two new versions of ActiveMQ were deployed on the production broker network: 5.5 on (29 November) and 5.5.1 (30-31 January). With the new deployed software versions the following features were introduced:

- Usage of “Virtual destinations”. “Camel routes” support was switched off and replaced by Virtual destinations in order to solve the problem of asymmetric load across the broker network (Camel routes were configured on a single instance of the brokers network). In order to adapt to virtual destinations, SAM was changed to use wildcard subscriptions instead.
- Reliable message delivery. Messages with time-to-live attribute are now supported to avoid the overloading of message brokers (TTL is now set to 3 days).
- Automatic closing of inactive STOMP connections after one hour. Inactive connections had been overloading brokers. The problem required manual restarts of the broker network to be solved. Now clients reconnect automatically in case of time out.

AUTH provided protected wiki pages with documentation and configuration description<sup>33</sup>.

A test instance of the broker network is now available to test new software versions and the integration of clients.

GOCDDB version 4.2 was released on the 24<sup>th</sup> of November. The major change in this version is scoping of sites and service endpoints into EGI and Local categories. Sites and service endpoints marked as being part of the EGI grid are exposed to the central operational tools such as monitoring, while Local entities are not considered part of EGI for monitoring purposes.

Two new versions of Operations portal were deployed in this quarter: 2.7 (9 November) and 2.8 (21 December). At the end of PQ7 there were four NGI instances: NGI\_BY, NGI\_CZ, NGI\_GRNET and NGI\_IBERGRID. Decommission of the old CIC portal (cic.egi.eu) was postponed and is planned by the end of April 2012.

The List of operations tests was extended on January 2nd with the following metrics: org.nagios.BDII-Check, org.sam.CREMCE-DirectJobSubmit, hr.srce.LB-CertLifetime, hr.srce.MyProxy-Store, org.nagios.GridFTP-Check, org.sam.WMS-JobSubmit.

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<sup>32</sup> <http://www.basarim.org.tr/2012/doku.php>

<sup>33</sup> <https://trac.hellasgrid.gr/trac/broker-network.egi.eu/wiki/broker-network%20configuration>



The Operations Portal is being tested to migrate to the virtual destination feature of the messaging infrastructure in order to improve its synchronization with NGI SAM instances.

One new versions of SAM was deployed in this quarter: SAM-Update15 on the 29<sup>th</sup> of November. By the end of PQ7 the following SAM/Nagios instances were in production:

- 26 NGI instances covering 37 EGI partners
- 2 ROC instances covering 2 EGI partners
- 1 project instances covering 1 EGI partners
- 3 external ROC instances covering the following regions: Canada, IGALC and LA.

The implementation the GOCDB load-balancing DNS setup is in progress for the address goc.egi.eu. The secondary instance in Fraunhofer institute (NGI\_DE) is still being deployed. Delay is caused by the development and deployment of the new GOCDB version.

The implementation of a Nagios probe for the monitoring of underperforming sites was approved. The running of this probe and the generation of alarms in case of low availability will allow the streamlining of the current manual procedure for notifying underperforming sites and collecting justifications, which is currently under the technical responsibility of COD. Such approach allows site managers to proactively correct performance figures before the end of the calendar month in order to comply to the Resource Centre OLA<sup>34</sup>. The implementation details were defined.

The production accounting repository ran with no internal problems during PQ7. There was one scheduled firewall outage of 45 minutes at RAL and a few very small network breaks which prevented the service receiving new data. This data would all have been received the next time the affected clients tried to publish. Total availability 99.79%. The rollout of CREAM CE caused a heavier support load mainly due to configuration errors during setup. It would be good to have second line support for APEL as for the other middleware. The APEL Team should only be providing third line support. There is a test repository running all the time to receive tests from other sites developing their software against SSM the new STOMP and Python-based messaging layer which runs on the production EGI Messaging Infrastructure. All of the other existing and new accounting services have tested using SSM except SGAS where the developer has moved on and has not yet been replaced. SL4 to SL5 migration requires all APEL servers to be down together for several days. Downtime was announced well in advance.

The accounting portal ran with no operating problems. The VM was configured with 3Gb (1Gb more) to avoid memory shortages on user decryption due to the ever growing number of user records. The new ActiveMQ connector should provide a definitive solution to this problem. The last release with the new codebase caused some early problems and regressions that were quickly fixed. After that, the number of user problems decreased sharply, and most tickets and mails are feature requests. Since the Portal is a VM machine, it can grow easily to accommodate more load, but currently the growth in data size seems to be reasonable.

The new profile (ROC\_CRITICAL) for EGI availability and reliability reporting was tested validated, approved and rolled to production in Jan 2012. Starting in Jan 2012 official NGI service performance

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<sup>34</sup> <https://documents.egi.eu/document/31>



reports are distributed. The prototype of these reports was distributed for the first time in Sep 2011 and was circulated in November and December to let NGI fix their deployed services (currently top-BDIs) in case of low performance.

## 1.2.5. Operations Tool Maintenance and Development

### 1.2.5.1. Operations Portal

Two versions of the Operations Portal were released during PQ7: Version 2.7 on 2011-11-09 and Version 2.8 on 2011-12-21. Major improvements by component are summarised in the following.

#### 1) Security Dashboard

Upgrade of the tool according to the feedback of the security group:

- Site information is available in the action menu with a link to the GOC DB record
- Mails to sites (from notepads) will be sent to the both the CSIRT contacts and all the security officers mails as per GOCDB.
- A description of the impacted packages is available near the CVE links into the menu and into the issues record.
- GGUS integration: the users are able to create tickets into GGUS via a form .
- Notepads being added from sites' detail
- Sorting by NGI: the tables are sorted by alphabetical sort on the right and by number of items into the menu
- The details in the issue history have been reviewed to display only a subset of the youngest one.
- The messages related to sites without problems / bad links / security restrictions have been improved.
- A menu is available on the left with different entries:
  - The summary of the current problems by NGI/Site with link(s) to them
  - The summary of the current problems by type of problems with link(s) to them
  - The details of the user scope with link(s) to the problems related to this scope
  - The on-going events

#### 2) Metrics for ROD activity

- A new "Rod OLA metric" has been added => GGUS Ticket 75216
- A new Escalation Step has been added : after 5 days in 3rd step issue is raised on COD dashboard. GGUS Ticket 77457

#### 3) VO Module

- Link to the VOMS server web interface added  
Status of VOMS server(s) is now displayed in each VO details, with HTTP code returned
- Update/Registration forms: to validate VO name against chosen VOMS server a "Test Url" button has been added to directly query the "listMembers" VOMSADMIN method  
RT Ticket 2241
- All sections can each have only one pending modification waiting for validation by UCST  
RT Ticket 1970
- A report of VO's URLs statuses is now available through this kind of permalink and floating menu on each vo line in search tool
- Direct links for private/public VoIDcards XML feed are available in search tool legend.



- Automatic closing of VO "follow-up" GGUS ticket when a VO is set in production.
- All GGUS tickets submitted via VO tools (New registration, VOMS help request, GGUS support unit request) are now sent with the involved field set to VO manager email.
- operations@egi.eu mailing list has been added along with to [ucst@egi.eu](mailto:ucst@egi.eu)

### 1.2.5.2. GGUS

- 1) **LHCOPN TTS:** Opened LHCOPN TTS towards standard GGUS tickets
- 2) **Report Generator:** Implementation of the new report generator has started. A first prototype will be presented at the EGICF 2012.
- 3) **Integration of new NGIs:** Assuming that the Nordic and Baltic countries are covered by NGI\_NDGF all NGIs besides Russia are integrated now. ROC\_Russia awaits finishing the setup of NGI Georgia before starting the transition process.
- 4) **GGUS-SNOW interface:** Enhanced GGUS-SNOW interface and fine-tuned synchronization work flow.
- 5) **GGUS structure:**
  - Support units: New support units (EMI UI, EMI WN & MPI User Support) have been introduced in PQ7 and the GridMap support unit has been decommissioned. All decommissioned support units have been moved to the list of former support units. The "Operations" support unit was moved from category "Other" to category "EGI" in the support unit drop down list.
  - VOs: VOs "israelvo.isragrid.org.il" and "shiwa-workflow.eu" were added to the list of VOs which provide support via GGUS.
- 6) **GGUS web interface:**
  1. Implemented warning in case of concurrent ticket updates
  2. Grid certificates now required for registration in GGUS
  3. Implemented automatic ticket closing for tickets in status "solved" or "unsolved"
  4. Updated mail templates
  5. Replaced reply mail address "ignored@ggus.org" by "ignored@ggus.eu" for reminder mails
  6. Updated priority colour algorithm

### 1.2.5.3. GOCDB

GOCDB-4.2 was released 25th November 2011 and included data scoping to 'EGI' or 'Local'. The user interface and PI queries were updated to include a new 'scope' tag to limit results to 'EGI' or 'Local' scope. A finer grained role/permissions proposal was refined and documented at <https://wiki.egi.eu/wiki/GOCDB/Release4/Development/NewRoles>. This was prioritised ahead of VSites. A new role/permission model has been in development for the next release which replaces the former hierarchical permissions model (v4.3 is expected in PQ8). Further abstraction and refinements of the database API in the form of a DB agnostic IDBDatabaseBinding interface, DBConnectionFactory and PromAPIFactory (v4.3) were implemented. A secure download of the GOCDB data in the form a .dmp file was provided for the failover solution (refreshed every 2 hours). Detailed instructions for importing the .dmp file into the failover database instance were provided. The GOCDB installation docs were updated on the wiki. The DNS switching mechanism was tested and verified.



#### 1.2.5.4. SAM Monitoring Framework

In PQ7 there were many improvements in the development and deployment of the Service Availability Monitoring (SAM). Decommissioning of the entire old SAM infrastructure including Gridview, Gridmap and the old SAM database and Web interface is on going and should be finalized at the beginning of PQ8 following successful deployment and transition to the new SAM/Nagios infrastructure. We have extended the stability of the central services for EGI and performed two major releases.

##### **SAM-Update 15 and SAM-Update 15.1**

- Improved scheduling and logging mechanism in the Availability Computation Engine (ACE)
- Support for EGI operational tools in the Aggregated Topology Provider (ATP)
- Improved validation of ATP synchronizers' input data
- Automatic retrieval and synchronization of service flavours from GOCDB
- New probes monitoring entries in Metric Results Store (MRS) were introduced
- GLUE 2 publication in Nagios GlueService
- Reduced browser cache time to 10 minutes in MyEGI Portal
- MyEGI filters are now visible by default
- Improvement of error messages and error handling in MyEGI web services
- The first testing version of Profile management system (POEM) is distributed in this release.
- Added access statistics to the central MyEGI portal
- ARC metrics moved to the default NGI/ROC profile
- Improved NCG concurrency behaviour (new configuration stored to temporary directory, locking mechanism introduced, stopping ncg service cleans all remaining processes)
- Improved uncertified sites setup for CREAMCE metrics
- Introduction of the eu.egi.sec probes (support for both gLite and ARC probes in security monitoring)

##### **SAM-Update 16 (internal only)**

- The first integrated version of the Profile Management System (POEM)
- OpenReports instance integrated into SAM-Gridmon
- First version of WLCG data transfer computation engine
- Alignment of service flavours with OSG OIM
- Improvements in UNICORE and ARC support
- NCG gathers all needed information from ATP (users, contacts, service URLs)
- Integration of the version of Nagios Core (3.3.1)
- Scope support in NCG
- Improvements in concurrency and reloading of core components
- Layout and functionality improvements in MyEGI
- Instant availability computations (minimum latency down to 15 minutes)
- Improving the overall data flow between major architectural components

##### **Messaging**

- Use of mbcg tool to generate configurations for message brokers





- Upgrade of the ActiveMQ from version 5.3 to version 5.5
  - First utilised mbcg tool
  - Major changes in configuration due to ActiveMQ version change
- Upgrade of the ActiveMQ from version 5.5\_06 to version 5.5\_20
  - Removal of the Camel routes
  - Enforced idle connection eviction (after 1 hour with no message sent or received)

#### 1.2.5.5. Accounting Repository and TJRA1.4

In PQ7 the APEL team completed the APEL Accounting Repository major redesign presented in previous QRs including the migration to the production EGI Messaging Infrastructure and to make the repository suitable for regionalisation. The development from the new transport layer (SSM) was completed. This uses STOMP and Python and will work on the production EGI Messaging Infrastructure. SSM and the new repository were tested by the other accounting systems which currently send their data by direct database insertion.

About the TJRA1.4 (Accounting for new resource types):

\* Cloud: the APEL PT actively attended the FedCloud taskforce (Scenario4- accounting) to include into the accounting system records coming from the federated cloud infrastructure. A “straw man” Usage Record starting from the CPU one has been defined and the partners running the various infrastructures are reporting back on how well they can cut them

\* Storage: The PT also participated in the definition of the accounting storage record within standardization bodies(OGF UR-WG ). Meanwhile it is moving forward as an interim standard in EMI where the storage product teams are preparing to populate records. They will publish using SSM and the APEL repository will receive the records and load them into a database. The release of the EMI products is not scheduled until EMI-3 in May 2013 but this may be negotiable if EGI has a strong requirement

\*Parallel Jobs: the PT also participated in the definition of the accounting for parallel jobs usage record within standardization bodies(OGF UR-WG ). It was confirmed that it was sufficient for parallel jobs to publish the number of compute nodes used by a job and the number of CPUs. It is intended that CPUs contains the number of cores for compatibility with the accepted practise for serial jobs which run on a single core. Unfortunately APEL did not implement these fields so that is a target for 2012. The repository will be ready to receive them when the database is migrated but will not actually receive the data from most sites until the new APEL client is rolled out.

#### 1.2.5.6. Accounting Portal

The following developments were completed in PQ7:

- Change to new codebase and code repository
- View reorganization
- Query optimization
- Corrected Tier2 reporting



- Extensions and maintenance of the VO Manager views
- Sundry bug fixes and maintenance

#### **1.2.5.7. Metrics Portal**

The following features were added to the metrics portal:

- Per country metrics (only on requested NGIs).
- Heavy query optimization.
- XLS output support.
- Aggregated metrics (sum of all NGI predicted metrics + entered metrics).
- Internal documentation and refactorization.
- Many metric fixes and modifications.

### **1.3. Issues and Mitigation**

#### **1.3.1. Issue 1: SAM 2<sup>nd</sup> Level Support**

SAM 2<sup>nd</sup> level support is still composed by too few (voluntary) people. We will provide a plan to fix the situation before the end of PY2.

#### **1.3.2. Issue 2: Unreliable Message System**

The messaging system is unreliable in some cases for the ops portal, too many tests result missing. Mitigation: moving from topics to queues under testing.

#### **1.3.3. Issue 1 (SA1 PQ5): Participation to SR activities**

**Update.** All NGIs failing to contribute to Staged Rollout were contacted and follow-up discussions took place in January 2012. A few additional NGIs started contributing to Staged Rollout. The participation to Staged Rollout is now being reviewed in preparation of EGI 2.0, as glite 3.2 is reaching its end of support date.

#### **1.3.4. Issue 2 (SA1 PQ5): Integration of middleware stacks into the EGI Information Discovery System**

**Closed.** A successful workshop was held in December 2011. A follow-up meeting is planned at the EGICF 2012 in order to follow-up developments about identified actions and requirements.

#### **1.3.5. Issue 3 (SA1 PQ6): Underperformance**

During PQ6 the performance of several NGIs significantly dropped: NGI\_ARMGRID (Armenia), NGI\_ME (Montenegro) and NGI\_MARGI (Macedonia). In addition, the performance of Asia Pacific significantly dropped for almost all sites.

**Update.** A support plan for some of the NGIs belonging to the South-East European region was discussed and approved in the Jan PMB meeting. GRNET is now supporting Armenia, Montenegro and FYRoM to overcome some identified technical issues. Progress of the support programme defined will be monitored in the coming months. The (overall) performance of Asia Pacific improved in PQ7.



### 1.3.6. Issue 4 (SA1 PQ6): Integration of Albania and Moldova

To date the plans and timeline for the integration of Albania and Moldova into EGI are unknown.

**Update.** The operations manager of Moldova was appointed during PQ7. Albania is still facing recruiting problems.

### 1.3.7. Issue 1: Finding adequate resources for users in Switzerland (NA3 PQ6)

Swiss NGI: The main issue was to find adequate computing and storage resources to cope with the specific requirements from the user groups. Sometimes the need of a tightly coupled solution (like being attached to their own storage system or to integrate their own local computing facilities) makes the integration effort even harder. We leveraged heavily the GC3Pie framework<sup>35</sup> to abstract even further the access details of the underlying computing and data infrastructure; this gave us the possibility of developing end-to-end solutions that are better tailored with the end-user needs. EGI.eu UCST project is currently in discussion with the Swiss user support team about the possibilities of extending the national VO into an international VO and inviting sites from EGI to support the VO members with computing and storage resources. The agreement of the Swiss partners of the VO is needed and they will be consulted with in November.

**Progress in PQ7:** In terms of enabling CH users accessing international resources, contacts have been established with NDGF (or NGI-FI) for a possible collaboration. The current idea is to mutually share resources on well pointed use cases already supported at the national level. At the moment we are in the phase of identifying the use cases and see how the requirements can be met by both NGIs. Next step will be to either group those use cases in one of the already available international VOs or to expose one of our national one at the EGI level.

## 1.4. Plans for the next period

### 1.4.1. Operations

#### Security

- The security dashboard will be in full production by end of PQ8.
- Domain name of CSIRT Nagios box will be migrated from current srv-102.afroditi.hellasgrid.gr into to the egi.eu domain
- SSC5 regional run in NGIs, to pilot at least one NGI run in PQ8, and assist NGI security officers for their regional runs after the initial pilot.
- SVG: improvement of usage of the EGI RT tracker to allow better reporting, including metrics. Discussion and plans on what should be done to assess new software, e.g. software from providers with which EGI is forming a relationship. EMI starting on Security Vulnerability Assessment of WMS. The chair of the SVG will co-ordinate the EGI Security Threat Risk Assessment.

#### Software deployment and integration

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<sup>35</sup> <http://appdb.egi.eu/?p=L2FwchMvZGV0YWlscz9pZD00OTk>



- EAs requested the possibility to submit staged rollout reports through via web. This features will be discussed together with the team responsible of IT support in EGI.
- Staged rollout and EA teams are being prepared to the testing of the upcoming EMI 2.0 release (sl6 and Debian), so that a sufficient amount of resources is available for the testing of this major release.

### Tools

- The decommissioning of the old CIC Portal is planned for May 2012.
- A new version of the Security Dashboard will be released to production in PQ8.
- An enhanced version of the VO Dashboard will be released to production in PQ8.
- The deployment of the refactored Operations Dashboard is planned for PQ8/PQ9.
- Robustness of failover configurations of central EGI.eu (where existing) will be tested.
- A new central SAM instance for monitoring of EGI.eu operational tools with a set of new probes (provided by operational tools developers within JRA1) will be rolled to production.

### Interoperations

- The status of GLOBUS and UNICORE probes in the SAM framework will be assessed and the integration of more probes finalised if needed.
- Definition of set of GLOBUS and UNICORE OPERATIONS Nagios metrics to assist day-by-day operations by raising alarms into the Operations Portal in case of failure.
- Overall integrations status assessment of GLOBUS and UNICORE.
- Definition of set of checks to be used for certification of UNICORE and GLOBUS Resource Centres.
- Currently different NGIs supporting UNICORE deployed different accounting solutions that do not interoperate with the central infrastructure of EGI. The status of a GLOBUS and UNICORE accounting developments will be assessed with the technology providers in the framework of a new TCB accounting task force<sup>36</sup>.
- A SAM update integrating Desktop Grid metrics will be released.
- Assessment of needs of integration of QCG middleware to support multiscale simulations in collaboration with the MAPPER project<sup>37</sup> and to foster collaboration with PRACE.
- Implementation of a demonstrator of iRODS service integration in EGI. iRODS<sup>38</sup> is a service used by the EUDAT project<sup>39</sup>. The first step will be adding the new service type in GOCDB.

### Accounting

- A production service will be established that receives summaries from other accounting services over Secure STOPM Messenger and integrates them with the old summary system. Once all

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<sup>36</sup> [https://wiki.egi.eu/wiki/TCB:Accounting\\_Task\\_Force](https://wiki.egi.eu/wiki/TCB:Accounting_Task_Force)

<sup>37</sup> [https://wiki.egi.eu/wiki/MAPPER-PRACE-EGI\\_Task\\_Force\\_%28MTF%29](https://wiki.egi.eu/wiki/MAPPER-PRACE-EGI_Task_Force_%28MTF%29)

<sup>38</sup> [https://www.irods.org/pubs/iRODS\\_Fact\\_Sheet-0907c.pdf](https://www.irods.org/pubs/iRODS_Fact_Sheet-0907c.pdf)

<sup>39</sup> <http://www.eudat.eu/>



systems have migrated, the old database will be migrated to a new one and the old clients piped into that. This second step is likely to be completed in PQ8. After the first step we will be ready to receive prototype records from storage and cloud infrastructures.

- Portal: Update the operating system on production to SL5, and to SL6 on some future date.

### Helpdesk

- Implementation of the first report generator prototype
- Assessment of needs for the adaptation of GGUS for the follow-up of security-related operational issues (the GGUS authorization mechanism to access information needs to be adapted).
- Further tuning of the GGUS-SNOW interface
- Set-up of a new ticketing system in NGI\_FRANCE (OTRS)
- Start of a GGUS working group for coordination of development and deployment plans with the involvement of the GGUS team, NGIs and DCIs.
- Implementation of a high-availability set-up featuring: auto-switching between web Front-ends, auto-switching between servers, on call duty service integration

### Network support

- Complete implementation of a IPv6 testbed
- Porting of HINTS to 64bit and dissemination on PerfSONAR-MDM and HINTS usage

### Availability and Operational Level Agreements

- First release of the EGI.eu OLA
- Discussion of requirements about availability/reliability reporting with the Operations Portal team for EGI.eu availability reports
- Definition of a profile for EGI.eu availability monitoring
- **Documentation**
- Improvement of navigation through operations wki pages
- Approval of site and service decommissioning procedure
- Finalization of VO decommissioning procedure

## 1.4.2. Tool Maintenance and Development

### 1.4.2.1. Operations Portal

The Security dashboard will be finalized to be use in production in March and the VO Dashboard first pilot version will be available in mid-February

### 1.4.2.2. GGUS

- 1) GGUS report generator: The new report generator will be implemented and a first prototype presented at the EGICF 2012.
- 2) xGUS for France Grilles: The PT will set up a xGUS based helpdesk for the French national VO vo.france-grilles.fr which is a catch-all VO for multiple communities
- 3) GGUS-SNOW interface: There are still some minor changes waiting for implementation and testing.
- 4) Interfaces with other ticketing systems: The PT will set up interface for new NGI\_FRANCE ticketing system OTRS



- 5) High availability: The following development will be carried on:
- Auto-switching between Web Front-ends
  - Auto-switching between Logic Servers
  - On call duty service integration

#### **1.4.2.3. GOCDB**

The following activities will be carried on in PQ8:

- Release GOCDB-4.3 (Feb) to include the new finer grained permissions/role model.
- Refine and document Virtual Sites proposal with the aim to release VSites in March/April (v4.4). VSite developments constitute the majority of the work in this period and will include a new VSite GOCDB entity, supporting PI queries, new user interface and potentially new VSite permissions/roles.
- Re-prioritise and plan next potential developments within OTAG/JRA1 (e.g. support for VOs, GLUE2 compatibility, and potential redevelopment of the XML output module, as this will be required for GLUE2 related developments).

#### **1.4.2.4. SAM Monitoring Framework**

1. SAM Update 17: The major improvements planned are the final integration of the Profile Management System (POEM), new bootstrapping mechanism for MRS and NCG, extended synchronization of external sources in Aggregated Topology Provider (ATP) and improvements in the configuration and deployment of SAM-Nagios. In addition, new SAM instance for monitoring operational tools is planned. The new instance will rely on operational tools information defined in GOCDB.
2. Messaging: The PT is planning the implementation of a credential-sharing procedure between brokers that are members of the same network. This is needed in order to have the same credentials available to all brokers and allow clients to choose on their own which endpoint to use. This is an action has to be finished before requesting clients to migrate to authenticated connections.
3. EGICF2012: The PT is planning to actively participate in the EGICF 2012. An entire session will be devoted to SAM and we will present latest status of developments and support for SAM as well as organize a closed session for the training of the EGI second level support.

#### **1.4.2.5. Accounting Repository**

The plan for PQ8 is to move to production the new SSM based accounting system. Moreover the receiving of first accounting records for storage and cloud resources will be tested.

#### **1.4.2.6. Accounting Portal**

The PT plans to include during the next quarter the following features:

- An ActiveMQ interface with repository.
- Foreign user - VO scope computation.
- Documentation of the XML interface.
- Extension of XML to all views.



#### **1.4.2.7. Metrics Portal**

A Permission model will be implemented for the metrics portal and the PT plans to improve estimations and possibly to use per-NGI BDII's

### **1.5. NGI Reports**

The link to the NGI reports is: <https://documents.egi.eu/document/1002>



## 2. DOMAIN SPECIFIC SUPPORT AND SHARED SERVICES & TOOLS

### 2.1. Summary

The support of the Heavy User Community engaged with EGI continues. Advances have been made in the HEP Dashboard to provide monitoring of jobs, data, sites and services for the WLCG community. The reuse of these tools into the Life Sciences Grid Community is on hold as work needs to be reassigned within the French JRU. HEP lead tools – Ganga and HammerCloud – continue to advance.

The Hydra service is awaiting the reassignment of effort within the French JRU to run an additional server. In the meantime work is progressing on encouraging sites to upgrade and correctly configure the Hydra client on their resources. New releases of the GReIC software which has provided improvements in the back end service and the web interface to provide improved monitoring and discovery services. The SOMA2 web portal (that includes customised application interfaces and visualisation tools for computational modelling) has made its first release of developments targeted towards the EGI community.

Domain specific support for the HEP community continued with the completion within LHCb's DIRAC framework for consistency checks between the stored files and the file catalogues. Data management tools for ATLAS and CMS have been improved. The LSGC continued with its community based support through regular coordination telecons. A&A has deployed a grid enabled version of VisIVO (which includes MPI support) has been made available to help visualise large datasets. The community level coordination within A&A was addressed by recognising that the different parts of the A&A community were working at different speeds and in different directions and would probably need to be recognised in EGI through separate VRCs. Work in ES on GENESI-DR and integration of data with Earth Science Grid continues.

### 2.2. Main achievements

#### 2.2.1. Dashboards

##### 2.2.1.1. HEP Dashboard Application

During the referenced period substantial progress was made for the Dashboard application in the following monitoring areas:

##### 2.2.1.2. Job monitoring

A new version of the Interactive View has been developed in the hBrowser framework. The new version provides better performance and advanced visualization. It was deployed for validation by the CMS VO in the middle of December. More than 20 feature requests and bug fixes have been done for the ATLAS job monitoring accounting portal. The new version of the accounting portal for CMS will be deployed for validation at the beginning of PQ8. Following feedback of the ATLAS production team, multiple improvements were performed in the beta version of the production display.





### **2.2.1.3. Data Management monitoring**

The 2.0M3.1 release of the ATLAS DDM dashboard was deployed in production in the middle of December. Data model of the DDM Dashboard was refactored to simplify development. The queries for detailed transfer information were tuned in order to decrease response time. Navigation to the transfer details information was improved with a possibility to bookmark every page.

The first prototype of the WLCG Transfer Dashboard which monitors transfers of the pilot version of the FTS 2.8.8 was deployed in the middle of November. Consistency checks of the monitoring data provided by the new WLCG Transfer Dashboard with the existing transfer monitoring systems demonstrated good agreement. In order to provide a reliable service the alarm system was developed. The alarms are raised when monitoring information is not updated. The first prototype provides basic functionality which allows for the monitoring of transfers performed via FTS. Requirements for the additional functionality are currently being discussed with the LHC VOs.

### **2.2.1.4. Site and Service monitoring**

Validation of the new Site Usability Monitor (SUM) compatible with the new SAM/Nagios architecture had been performed successfully. The purpose of the validation was to ensure a transparent switch to the new SAM infrastructure without disruption of the LHC VOs operations which heavily rely on SAM. Multiple bugs were discovered and fixed in SAM components and SUM interface. According to the pilot users of the SUM, it is ready to be used in production.

During PQ7, special attention was given to the SiteView application. The application aims to provide a site-oriented view for sites which serve several LHC VOs. Multiple changes have been performed in the collectors in order to improve data completeness and reliability.

### **2.2.1.5. Life Science Dashboard design**

Close collaboration has been pursued with monitoring tool designers - in particular Nagios probe developers, MyEGI SAM visualization portal, CESGA accounting portal, VO operations dashboards, the VO Operation Dashboard that shall derive from the EGI Operations Portal and the information systems and their topology generation solutions (lcg-infosites, BDII, VO Feeds...) - to identify the best practices in VO-related information collection and presentation. The profusion of existing tools, the identification of their partially overlapping features and specific weaknesses has slowed down the development of an integrated Dashboard. It also underlines the limitations of the existing information sources on the Grid to build such a Dashboard. This work led to a publication submitted to the HealthGrid conference 2012.

## **2.2.2. Tools**

### **2.2.2.1. HammerCloud**

The highlight of PQ7 was the completion of the migration from v2 to v4 for the ATLAS HammerCloud service. This means that v2 is completely deprecated and all VOs are now running with the same generic codebase. Following this milestone, effort was made to find a more stable database service to host the HC databases (previously the HC team has been running its own MySQL servers). It was originally planned to port the HC object layer to Oracle, however a new hosted MySQL service



became available in CERN IT in PQ7, so the database was moved to this service. The plan to use Oracle has therefore been scratched.

In PQ8, we expect stable operations of the service. Effort will be made to study the cross-VO relationships that can be observed in the concurrent tests running at all grid sites. The result of this work will be presented at CHEP 2012 in New York.

#### **2.2.2.2. Ganga**

PQ7 saw the transition of the Prepare() method from beta-testing into the production release of Ganga. In summary, this method provides functionality which allows users to preserve most applications (and thus jobs based on such applications) in a known, configured state. Benefits of this are twofold; firstly, the application/job can be re-run in the future, using different input data if required, with the assurance that the options and environment used will be identical to those at the point the application was first 'prepared'. Secondly, the same prepared application and its associated files can be used as the basis for many jobs, which inevitably leads to a more efficient use of a user's available disk space by the Ganga client.

Feedback received from both users and developers during the beta-testing phase was used to implement additional functionality. For example, HammerCloud developers requested that a mechanism exist which allows their tools to effectively bypass the Prepare() method (since HammerCloud already passes a pre-prepared application object to Ganga). This and others such feature requests have been implemented in subsequent Ganga releases.

There has also been significant development within the Ganga Tasks framework, a suite of tools that provide for more powerful job handling techniques. In particular, LHCb users are now able to use book-keeping query objects (i.e. queries against a database which return a specific set of input data) within the context of the Tasks framework.

In addition to the above major developments, work has continued on implementing feature requests and bug-fixing.

Notable ongoing and future work includes a project to unify the treatment of all output data generated by Ganga, for jobs executed across a range of different platforms (e.g. locally, on batch systems or the WLCG computing infrastructure). As a result of this, users will be able to easily redirect their job output to (grid) mass storage elements.

#### **2.2.3. Services**

##### **2.2.3.1. Hydra**

An experimental Hydra service is provisioned for testing. Its planned extension to a distributed triple-key store was not possible within this period, as one of the servers planned for this installation should have been provisioned by the HealthGrid association, which has been dissolved recently by court decision. Negotiation is on-going to find a replacement service provider.

The work on Hydra client provision for sites providing resources to Life Sciences has started. It was discovered that only few sites currently provide client command line interface (CLI), many of them are misconfigured, some publishing hydra-related tags (probably related to older versions of gLite installation) while the client is not installed, others providing older versions of the client. The situation



is being clarified with all sites involved. Finally, the up-to-date Hydra CLI package appears to have been developed as part of the EMI middleware but its dependencies are not compatible with the current release of gLite installed on production resources. Discussions are on-going to find how to create client packages compatible with the current installation.

### 2.2.3.2. GReIC

During PQ7, the first production release of the DashboardDB registry has been deployed and integrated into the official GReIC website ([www.grelc.unile.it](http://www.grelc.unile.it)). The functionalities tested, validated and now available to the end users in the official release are: user registration, user profile management, grid-database registry, grid-database search and discovery, discussion groups (including group subscription and notification), grid-database rating and tagging. Moreover the permalink feature allows the registry to be easily “exported” (as a gadget) into other web contexts. This functionality has been exploited to integrate the DashboardDB registry into the official GReIC website, under the tab “Registry”. The back-end of the DashboardDB (developed during PY1) has been also deployed and it is now running in the production release.

As a showcase, some preliminary grid-database entries have been also stored into the DashboardDB registry (some examples are related to the UNIPROT data bank for the LS domain and to some test DBs for tutorial purposes). New grid-database entries will be added in PQ8.

Another important task carried out during PQ7 has been the porting of the GReIC software on the SL5.x x86\_64 platform. This activity, started during PQ6, has been completed. The software has been packaged and tested on a gLite 3.2 UI machine. Three rpms are now available to the end-users through the GReIC website. The porting issues documented in QR6 and related to some libraries missing on the gLite 3.2 UI and needed by the GReIC software has been successfully solved by providing them (as external libraries) in a new rpm. The documentation to install, configure and use the software is also available to the end users.

During PQ7 the documentation and the general information available on the GReIC website have been updated.

Another activity started during PQ7 (January) is related to the integration of the GReIC service into the Italian Grid Initiative (IGI) release. A new repository for this software is being set up. This activity is still on-going and will be finalized during PQ8.

A new use case for the GReIC middleware in the Life Sciences domain and concerning biodiversity aspects has been defined during PQ7 jointly with the Biology group at the University of Salento. This use case foresees the adoption of the GReIC middleware to support a platform for sharing invasive species information at a global level in the Italian LifeWatch Virtual Laboratory. The GReIC software will be exploited to manage metadata information (stored into both XML documents and relational databases) about *Invasive Alien Species* (IAS) making them available to the end users in a grid environment. The use case has been well described and defined taking into account needs and requirements coming from the Biology group. Based on the available metadata, a search and discovery functionality will be developed as a Command Line Interface. Even though the use case is starting considering a single GReIC service instance at the University of Salento in Lecce (Italy) with some biodiversity databases, the long term plan (1 year) should involve more than ten nodes across the Italian country and hosting several databases exposed in grid through the GReIC grid-database



interface. The design and development of specific clients performing distributed queries across different multiple GRelC service instances have been also planned at this stage, to completely address more complex needs concerning data correlation among different data sources. This interoperability exercise of data stored in distributed databases will allow mapping the fragility of ecosystems to alien species invasion and estimating a long-term impact of alien species on biodiversity.

A new x86\_64 machine to support the IAS use case has been provided by SPACI during PQ7. The gLite 3.2 compliant release of the GRelC service has been also deployed on this machine. In terms of user support and dissemination, a tutorial titled “*Grid Database Management: the GRelC Middleware and Its Applications in the Environmental Context*”, has been presented at the Parallel and Distributed Computing and Systems conference (PDCS2011, December 14–16<sup>th</sup> 2011, Dallas, USA)<sup>40</sup>. Moreover, the participation to the American Geophysics Union (AGU2011) conference in S. Francisco (5-9 Dec 2011) has been key in collecting new needs and requirements related to the Earth Science and Environmental domains. Finally a talk about the GRelC middleware has been also presented at the ASQ & GS-CAD Technical Talk, at the PCMDI/Lawrence Livermore National Laboratory (Livermore, CA - USA) in November.

#### 2.2.4. Workflow & Schedulers

During PQ7 the work has been focused on finishing the development of the FAFNER+ISDEP use case and on performing the tests of the proposed solution. This use case allows the study of the movement of particles in the plasma. It follows a parametric + parametric model where the results from the first parametric scan are collected and put together so they can be used by the second parametric scan. Both, FAFNER and ISDEP, use the actors previously developed which integrate the functionality to interact with the grid infrastructure. The actions of these actors change by using different values for the variables being considered by the different actors. The GatherAndPrepare actor, which retrieves the outputs from FAFNER and arranges these results so they can be used by ISDEP, differs from the actor used by FAFNER and ISDEP. Pages related with the different use case descriptions have been updated. We have also analysed requirements coming from Computational Chemistry applications. Different variations of the workflow for the combination of the GFIT3C, ABC (that is parameter study app), has been developed.

SOMA2 is a versatile modelling environment for computational drug discovery and molecular modelling. SOMA2 is operated through a WWW-browser and it offers an easy access to third-party scientific applications. The SOMA2 environment offers a full scale modelling environment from inputting molecular data to visualization and analysis of the results, and including a possibility to combine different applications into automatically processed application workflows.

Main outcome of PQ7 is a new version release of SOMA2. On 31.1.2012 SOMA2 version 1.4 (Aluminium) was released and made available on the SOMA2 web site. The new release contains most of the EGI related development work so far consisting of the SOMA2 grid integration and other improvements. Most of the work performed in this PQ7 was put to finalizing and packaging the version release. Also, CSC has maintained and operated CSC’s SOMA2 service.

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<sup>40</sup><http://www.iasted.org/conferences/speaker1-757.html>



### 2.2.5. MPI

An EGI MPI Virtual Team was established. The SA3 MPI (CSIC, TCD, UNIPG) activity participates in this group. The EGI MPI Support Unit is now fully functioning and available in GGUS.

CSIC has reviewed and updated MPI documentation available on the EGI wiki.

In addition, CSIC has also:

- Tested tight integration with SGE and PBS included in newer versions of mpich2 (1.3.1 and 1.5.b1),
- Tested accounting on SGE with different MPI implementations,
- Started to test MVAPICH, an MPI distribution with advanced Infiniband support, which is not currently supported by the default MPI-START,
- Submitted the abstract Parallel Computing workshop at EGI-CF 2012. CSIC are co-ordinating the programme.

CSIC also contributed to the SIESTA computation chemistry application software<sup>41</sup>. UNIPG has been working on parallelization of the CHIMERE application. The detailed analysis has identified the extent to which the application will achieve the highest level of parallelization possible, and thus the greatest efficiency. This model is structured around a task-farming model, in which some worker processes share the work by taking charge of part of the domain (subdomain) under the control of the master that sends and receives the relevant data, and that writes the results. The application can read initial input data based on the output of a previous run for a given timeframe. The model has several advantages:

- By chaining the results of many shorter runs allows simulations to run over much longer timeframes, and thus overcomes issues with CPU time-bound usage limitations at most resource centres.
- Can also be used as a form of application check-pointing.
- Allows greater granularity/resolution.

The CHIMERE parallelization pattern can be reused in many other applications

TCD has investigated the possibility of supporting generic parallel jobs (non-MPI) using the MPI-START framework. This work aims to exploit the OpenMPI mpiexec as a generic remote node process launcher. This was investigated in response to a query from the Life Science Grid Community as to whether it was possible to support hybrid DIRAC/MPI workloads.

TCD has also investigated a serious issue in site configurations that may contribute to non-optimal job allocations and MPI job failures. A test suite has been developed to probe all sites supporting MPI-START/(Torque/PBS). Some sites are configured with the job CPU time limit (CPUT) to be set less than the total time for an individual CPU core (PCPUT). In addition, we have been following up on a requirement for the appropriate Information Provider to be fixed and made available as part of the

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<sup>41</sup> Jornada de usuarios de Infraestructuras Grid” Workshop. See: <http://indico.ifca.es/indico/contributionDisplay.py?contribId=21&sessionId=14&confId=399>



UMD distribution. This issue affects 17 sites. Tickets are being opened against these sites, with recommendations on how to solve the problem.

TCD provided input for GPGPU Information System requirements at the “Towards an Integrated Information System” workshop<sup>42</sup>.

## 2.2.6. High Energy Physics

### 2.2.6.1. LHCb DIRAC

DIRAC framework was developed in order to provide a complete solution for using the distributed computing resources of the LHCb experiment. DIRAC has been developed in a very generic way and with a modular architecture that has made it suitable for serving other VOs as well. LHCb DIRAC framework is the DIRAC extension specific to the LHCb experiment, which has been formally separated from DIRAC in order to streamline the implementation of features requested by LHCb community. Its support in EGI has started in October 2010. The progress during PQ7 is summarized in the following items:

- As reported in previously<sup>43</sup>, work on providing consistency checks between grid storage elements and files catalogues has continued. The system is currently in production and the activity in PQ7 was focused on the validation of its results and in applying some improvements to the code and correcting small bugs. The system has also been adapted to parse and read storage dumps with a different format than the defined standard.
- The results of the consistency checks relative to the sites that are currently providing storage dumps has been presented in WLCG meetings and to the LHCb collaboration.
- The implementation of some new accounting tools for space usage, mentioned in the previous quarterly reports, has been further improved and is currently in production and being used by the LHCb collaboration members. It provides accounting plots for the storage resources usage for LHCb data over the storage elements of all Grid sites supporting the VO. The information provided by this tool has been very useful to select the data to be removed from the Grid, in order to make room for the new MC simulation campaign just started.
- The improvements applied to the LHCb DIRAC module to manage read/write operations on the grid storage elements, mentioned in QR6, have been released, certified and put in production.
- The development of a new service aiming to keep account of the data sets popularity and provide a ranking of the most popular data-sets (i.e. data most frequently accessed by users) has been started. The final goal is to use the information about data popularity to implement a dynamic data placement model, where the number of replicas of a given data-set is related to its popularity. A preliminary phase was dedicated to study the LHCb use case, focus on the objectives and understand how this new service could be implemented in LHCb DIRAC framework in the most efficient way. The development will continue in PQ8.

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<sup>42</sup> <https://www.egi.eu/indico/conferenceTimeTable.py?confId=654>

<sup>43</sup> <https://documents.egi.eu/document/312>



### 2.2.6.2. ATLAS Distributed Data Management (DDM)

Support for DDM Site Services, which are the set of agents responsible for the ATLAS data discovery and placement using the underlying EGI middleware (mainly FTS, LFC & SRM).

- Minor patches for the version that was released PQ7.
- Setting up new pilot sites to evaluate the DDM Site Services adaptation for Tier3s.
- Operational support, in particular to optimize transfers during periods of peak loads generated by strong production activity.
- Migration of the Site Services instance serving US sites from BNL to CERN.
- Evaluation of running the service on virtual machines with lower CPU and memory profiles.

### 2.2.6.3. CMS Data Management

In PQ6 the automatic, popularity-based Site Cleaning Agent was introduced for the CMS experiment to identify physics-groups that are exceeding their pledges and suggest old, unpopular replicas they can remove without disrupting analysis activity. During PQ7 this has improved the system by adding an Oracle backend that stores the space information of the sites and the suggested dataset replicas over time. This backend replaces the previous implementation that logged the daily actions on a directory tree in the file system. It is now easier and more efficient to extract the information. A new monitoring frontend has been implemented to visualize the information using modern technologies such as the *Django* web framework, the *jQuery* library and interactive plots using *Highcharts*. The webpage provides the experiment with a basic accounting system of the storage space information as well as offering a “shopping cart” system for the group managers where they can select the datasets to delete from a site and pass this request to the Data Management system to request the deletion of unused replicas.

### 2.2.6.4. CRAB Client

During PQ7 a new release of both CRAB2 Client and CRAB2 server has been produced. Both are intended to be bug fix releases and include some external updates needed to keep CRAB and CMSSW analysis software aligned.

On the development side the main functionality added is the user data publication. Regarding the user documentation has been decided to use sphinx and a first integration has been done on the client side. The extension to the server and the AsyncStage out is needed. A factorization of the CRAB REST and the UserFileCache is now completed and the current setup is in line with the specific CMS requirements (all the services which will be deployed on CMSWEB will communicate each other through the frontend). The support to the glide-in WMS has been developed and the implementation is now under test.

Also during PQ7 an internal review of the status of the CRAB3 development was made. A four days meeting has been organized in order to include also a follow-up of the beta test addressed during October. The outcome of the meeting was helpful to refine the schedule for the next 6 months.

In the last part of PQ7 we started a complete rewrite of the monitoring system which design now is based on the couch continuous replication. This means that every distributed instance produce internal document with summary information and these documents are replicated in a central DB (at runtime). The CRAB REST interface is under review and a first version of the design document is ready to be



discussed. We are planning to produce a version 2 of the API which will include all the security aspect needed for the final production deployment.

### 2.2.7. Life Sciences

In addition to the monthly phone meetings organized to coordinate the Life Sciences Grid Community (LSGC), the technical team is having regular phone meetings (every one or two weeks) to coordinate its activity. Many standard monitoring procedures are still being strengthened. New resources are now monitored, in particular all WMSs and CEs accessible to the biomed VO users. A paper describing the role, the organization and the impact of the Life Sciences technical team in experiments support was submitted to the HealthGrid conference.

### 2.2.8. Astronomy and Astrophysics

As for the previous PQ6 period, during PQ7 activities in TSA3.5 focused on three different aspects: a) visualization tools and services; b) Grid and HPC; c) Access to Databases and interface with Virtual Observatory. Activities b) and c) mentioned here have also a direct impact on the coordination of the A&A HUC in EGI.

The first grid-enabled version of VisIVO service has been deployed. It is based on a specific grid-enabled library that allows users to interact with Grid computing and storage resources. The current version of VisIVO is also able to interface and use the gLite Grid Catalogue. Although VisIVO has been conceived and implemented as a visualization tool for astronomy, it is now a generic multi-disciplinary service that can be used by any other community that needs 2D and 3D data visualization. Further developments of VisIVO include: a) the implementation of a VisIVO web portal for gLite; b) the production of a MPI-compatible version of VisIVO for gLite; c) the production of a CUDA-compatible version of VisIVO for gLite. All these activities are already in progress.

GPUs are emerging as important computing resources in Astronomy; they, in fact, can be successfully used to effectively carry out data reduction and analysis. The option of using GPU computing resources offered by Grid sites to make visualization processing on VisIVO is currently under evaluation.

During PQ7, contacts have been established with EGI and with IGI, the Italian NGI, for what concerns activities related to Grid and HPC. A tight coordination with EGI and with NGIs, in fact, is of utmost importance given that collaborations and agreements with PRACE and with other entities that operate and maintain HPC resources are very important for this activity. Within TSA3.5 we currently operate to introduce small-size HPC resources in Grid. This implies from one side to install and configure HPC clusters (based on low latency/high throughput networks, HPC libraries and tools, modules and compilers) and from the other side to make the grid middleware aware of these resources. The plan is to verify at a later stage such small-size HPC resources and the middleware aware version vs. the most popular cosmological applications like FLY and Gadget + Flash.

This activity may have a significant impact also on other disciplines that need HPC and MPI to efficiently run their applications.

During PQ7, the activity aimed at integrating the BaSTI (A Bag of Stellar Tracks and Isochrones) Astronomical Database and its feeding FRANEC code in Grid was temporarily frozen; the highest





priority, in fact, was given to the setup and test of a new cluster and to the deployment of the corresponding small-size HPC resources.

Given that access to databases from DCIs and interoperability with the Virtual Observatory data infrastructure remains one of the hot topics in astronomy, the activity aimed at identifying use-cases and test-beds (both applications and complex workflows) that require simultaneous access to astronomical data and computing resources is going ahead. As the data infrastructure of reference in astronomy is the Virtual Observatory, end users should be able to access astronomical data in Grid through the VObs standards and launch computational tasks on DCIs. In this context two key issues to tackle concern the SSO (Single Sign On) mechanism able to grant access to computing and data resources through a single authentication phase (users do not need to authenticate themselves multiple times) and a tool/service to access astronomical databases federated in the VObs from DCIs. GRelC is one of the tools under evaluation to verify its ability to meet the most important requirements of the A&A community.

Because activities scheduled for TSA3.5 impact the coordination of the A&A HUC in EGI and vice versa, a significant percentage of time in PQ7 was dedicated to the coordination of the European A&A community in EGI in order to stimulate and to foster the requirements gathering process to be fed to EGI and to involve a larger part of the community into the use of e-Infrastructures. The coordination of activities within the European A&A community concerning the usage of DCIs for both small-scale and large-scale projects, in particular the ESFRI ones, i.e. SKA (Square Kilometer Array) and CTA (Cherenkov Telescope Array) has been intensified. A coordinating workshop<sup>44</sup> took place at the Astronomical Observatory of Paris on November 7th 2011, where the major astronomical projects and research areas were represented.

During this workshop the current status of the A&A HUC was discussed. The most important topics raised from the discussion highlighted the need of having multiple astronomical VRCs each of them aggregated around a big project or Institution well representative of one of the major A&A research areas. A unique catch-all VRC, in fact, has proven to be not suitable to represent the whole community and poses strong limitations for what concerns the requirements gathering process and the preparation and implementation of a sustainability plan. All participants who attended the workshop agreed that the major effort within the A&A HUC should be focused on the identification of big A&A projects and Institutions for which the adoption of DCIs could be beneficial, so they could be good candidates to lead new astronomical VRCs.

### 2.2.9. Earth Sciences

Earth Science (ES) applications cover various disciplines like seismology, atmospheric modelling, meteorological forecasting, flood forecasting, climate change and many others.

The presence of Earth Science in SA3 is centred in the implementation and maintenance of interfaces or tools to provide access to Earth Science specific resources from the grid, in particular to large data infrastructures; for example resources within the infrastructure of the Ground European Network for Earth Science Interoperations - Digital Repositories (GENESI-DR), or climate data within the Earth System Grid. The community is supported independently by organisations and NGIs, and additional

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<sup>44</sup> <http://twiki.oats.inaf.it/twiki/bin/view/AstroVRC/AstroVRCWorkshop>



effort is put into fostering the community and to provide value-added services around EGI. The Services for Earth Science task covers the implementation of data access scenarios, to permit the utilization of Earth Science data resources in Grid jobs.

Regarding access to the GENESI-DR repository, the work was influenced by changes to the underlying infrastructure and protocol. Parts of the code needed to be adapted to these changes. Apart from that, the following progress has been made. Improvements on the “*gsearch*” utility for easy search and discovery in OpenSearch supported search of data, including a reworked *ncurses* interface, more sophisticated data handling and a few bug fixes to solve some rare crashes. In addition, a system for configuration over a dot file was added, which enables the user to permanently save and modify some variables like the preferred top request site. Documentation was started with a description of the functionality of *gsearch*, as well as a few standard user scenarios and examples to get started with the utility. An *ncurses* text-based user interface for command-line usage over e.g. in the typical situation of a terminal SSH connections to gLite User Interface nodes has been developed. A new version of the Gi-cat distributed catalog service, which is able to broker between heterogeneous search and metadata infrastructures, has been deployed and experimented on a server at SCAI. The command-line and web clients will be adapted.

The team that works on Earth System Grid (ESG) interoperability has made considerable progress. The intelligent data transfer tool, now named “*synchro-data*” that facilitates the command line, bulk oriented access to ESG CMIP5 data. The tool can download files from the CMIP5 archive in an easy way, through a list of variables, experiments and ensemble members. It will evolve together with the CMIP5 archive backend functionalities. The user defines one or many templates that describe the desired data, each of them listing variables, frequencies, experiments and ensemble members. The user separately defines a list of models. Using these templates, the tool explores the ESGF grid and downloads all the corresponding available files. The program may be run regularly to download the possible new files. Major added features include multi-threaded downloading, incremental downloads through keeping a history, caching to limit the stress on ESGF metadata server, additional actions (delete, cancel, retry), and a statistics module to report about remaining download volume, disk space requirements, etc. The *synchro-data* tools have been presented by J. Raciazek and S.Denvil during the last two ESGF developers meeting, the 22 of September in Abingdon (UK) and the 29 of November in Livermore (USA). For the authentication interoperability, a prototype adaption of MyProxy is currently developed that will issue ESG certificates based on EGI certificate authentication.

The EGI Earth Science community is in contact with the FP7 project Virtual Earthquake and seismology Research Community e-science environment in Europe (VERCE), which aims at integrating a service-oriented architecture with an efficient communication layer between the Data and the Grid infrastructures, and HPC. A second novel aspect is the coupling between HTC data analysis and HPC data modelling applications through workflow and data sharing mechanisms. Discussions about effective and goal-oriented exploitation of Grid resources in the projects infrastructure have taken place. The projects members were suggested to register for the ESR general purpose Virtual Organisation to immediately be able to use computational resources. The setup of a dedicated VERCE VO or VRC is being discussed at present.

## 2.3. Issues and Mitigation

### 2.3.1. Hydra Package delivery



The dependency on software developed by EMI slows down the planned deployment of a file encryption service. Currently, the hydra client packages cannot be deployed on production resources. A close collaboration is ongoing with the EMI team in charge of Hydra development and packaging.

### **2.3.2. HealthGrid Status**

The HealthGrid association was dissolved by judicial decision due to its inability to finance its debt. A reorganisation is needed inside the CNRS partner to handle the tasks managed by HealthGrid, in particular the Life Sciences dashboard design.

### **2.3.3. Life Sciences technical team activity**

The work performed by the Life Sciences technical team is mostly a generic infrastructure monitoring, probing and troubleshooting activity, due to the complexity of middleware configuration and maintenance. Despite the automation of many monitoring procedures, the work remains dominated by the increasing number of incidents detected, which number follows the increased capability of the team to identify misconfigured or faulty services. The technical team longs for the time this background work will prove to stabilize the infrastructure, but experience shows that this should not be expected in a short future. Hence the technical team cannot for now focus on its real, application community-oriented missions.

### **2.3.4. MPI**

The predominant job scheduler MAUI needs to be upgraded at affected MPI sites. A node allocation bug/problem has been discovered in the standard distribution. EMI does not provide support for MAUI, and the software license may impose significant software distribution restrictions. We are currently working around this problem by recommending that sites install a version from an un-official repository.

MPI/Parallel Computing surveys delayed until month PQ8.

## **2.4. Plans for the next period**

### **2.4.1. GReIC service**

During PQ8, the DashboardDB will be extended to support a global monitoring view. In particular the new view will display the network of GReIC services (and their status) deployed in EGI. Further support to the heavy user communities will be provided addressing the requirements highlighted in the current use cases. In particular a strong support is foreseen for the Italian Lifewatch use case about IAS. At the end of PQ8 the GReIC middleware should be part of the Italian Grid Initiative (IGI) release, providing the end users with a yaim compliant installation and configuration procedure. Moreover the DashboardDB registry will be publicized as a new EGI gadget at the European level ([www.egi.eu/user-support/gadgets](http://www.egi.eu/user-support/gadgets)).

### **2.4.2. Hydra service**

Investigate the way the Hydra client commands from EMI development code base can be installed and published on the current production version of gLite.

### **2.4.3. LSGC Dashboard**



Reorganize French JRU activity after the stop of the HealthGrid association.

#### **2.4.4. MPI**

MPI related tickets in GGUS shall be assigned to the new MPI User Support unit.

PQ8 work shall follow directly on from PQ7.

EGI-CF 2012 Parallel Computing Workshop.



### 3. SOFTWARE PROVISIONING

#### 3.1. Summary

During PQ7 SA2 focused on two releases of the Unified Middleware Distribution. Initially planned for End of January 2012, UMD 1.4.0 was scheduled for mid-December to include an update to the Globus platform, and provide important updates to various components of the gLite platform. However, a regression defect was detected in an important component to the gLite CREAM Job submission service so that inclusion of a number of related components had to be postponed to a later UMD release (UMD 1.5.0, see below).

Initially, the Software Provisioning process was designed to provide a single Grid Middleware repository, which would be updated in quarterly intervals<sup>45</sup> after careful planning based on Technology Provider release schedules covering the next half year to a year. To be able to respond to uncommon, unplanned incidents and needs (for example, critical security vulnerabilities in a deployed software component) the software provisioning process was designed to accommodate more frequent releases than that. However, long-term planning of UMD releases is challenging with Technology Provider release schedules that rarely extend more than 6 weeks into the future (EMI), or do not provide enough detail to cover intermediate updates (IGE)<sup>46</sup>. Being confronted with this uncertainty, the natural response of an Operations community is to push for timely deployment of published software updates. This aligned well with the first UMD releases that strived to provide as much coverage of products that face end of support with gLite 3.2. Consequently, UMD releases continue to be published in a 6-week cycle<sup>47</sup>, reflecting the situation described above. In terms of effort spent for Quality Criteria Verification of software for inclusion in UMD SA2 is managing well; nonetheless a consistent and proactive release planning for UMD remains unsatisfactory.

The Federated Clouds Task Force was set up in PQ3, tasked to provide a blueprint for setting up a prototype of a federated Clouds infrastructure. After an initial phase of constituting itself the Federated Clouds Task Force has begun document the Blueprint and test-bed details in the Task Force's central Wiki location<sup>48</sup>. The work is organised around Federated Clouds usage scenarios reflected in respective sections in the blueprint, and focus workgroups that will contribute to the blue-print and the test-bed. The test-bed currently provides consistent access to virtualised compute resources<sup>49</sup> through

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<sup>45</sup> MS501: Establishment of the EGI Software Repository and associated support tools  
<https://documents.egi.eu/document/46>,

MS503: Software Provisioning Process <https://documents.egi.eu/document/68>,

MS504: EGI Software Repository – Architecture and Plans <https://documents.egi.eu/document/89>,

MS506: EGI Software Repository – Architecture and Plans, <https://documents.egi.eu/document/503>

<sup>46</sup> [https://wiki.egi.eu/wiki/Technology\\_Provider\\_Release\\_Schedules](https://wiki.egi.eu/wiki/Technology_Provider_Release_Schedules)

<sup>47</sup> [http://repository.egi.eu/category/umd\\_releases/distribution/umd\\_1/](http://repository.egi.eu/category/umd_releases/distribution/umd_1/)

<sup>48</sup> <https://wiki.egi.eu/wiki/Fedcloud-tf>

<sup>49</sup> <https://wiki.egi.eu/wiki/Fedcloud-tf:Blueprint:Capabilities:VMManagement>



OCCI 1.1<sup>50</sup>, and is monitored using a central Nagios instance<sup>51</sup>. Definitive results for data management and accounting are expected soon; possible solutions are discussed and developed for Information Discovery, Authentication & Authorisation Infrastructure, and Information discovery.

## 3.2. Main Achievements

### 3.2.1. Quality Criteria

The Quality Criteria Task is in the process of releasing the third version<sup>52</sup> of the Quality Criteria, due in February. A first draft was available for review in PQ6. Two more drafts were produced during PQ7 incorporating reviews from Quality Assurance teams of EGI Technology Providers. All publicised drafts are available in DocDB<sup>Error: Bookmark not defined.</sup> as earlier versions 1 and 2 of the DocDB entry.

The latest draft now covers all the capabilities defined in the UMD Capabilities, including the ones missing in previous versions related to VM Image Distribution and Workflows. Besides the definition of criteria for those new capabilities, the Quality Criteria team has continued to review and improve the existing material by constantly monitoring the UMD Software Provisioning process and by checking any advisories by the EGI Software Vulnerability Group. Review and improvement of Quality Criteria are curated so that a balance is struck between assuring software quality through coverage with quality criteria, trade-off between specificity and generality of individual criteria, and workload of verification engineers. In particular, two new quality criteria were developed related to default passwords of services, and passwords stored in publically accessible files, both triggered by two incidents that resulted in one EGI Security Advisory<sup>53</sup>.

In order to facilitate the identification of applicable criteria to each product, a reorganisation of the Criteria into products was created. A document per product is available<sup>54</sup> with all the criteria that must be checked during verification for the given product. This eases the verification task by providing verifiers with a unique document.

### 3.2.2. Criteria Verification

By implementing internal reporting on verification efforts the SA2 accuracy on reporting verification efforts significantly improved. The overall Software Provisioning process was amended so that individual verifiers report the spent efforts per product using the TSA2.4 infrastructure after finishing the verification process. The details of this change are documented in the SA2 Verifier Guideline<sup>55</sup>. TSA2.4 provides daily reports on key metrics of the Software Provisioning including the verification effort across all provisioned software products in an Excel sheet available for download via RT<sup>56</sup>.

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<sup>50</sup> <http://occi-wg.org/tag/1-1/>

<sup>51</sup> <https://wiki.egi.eu/wiki/Fedcloud-tf:Blueprint:Capabilities:Monitoring>

<sup>52</sup> Draft of the 3<sup>rd</sup> iteration of the EGI Quality Criteria <http://go.egi.eu/qualitycriteria-draft>

<sup>53</sup> EGI Security Advisory on the use of passwords <https://wiki.egi.eu/wiki/SVG:Advisory-SVG-2011-1414>

<sup>54</sup> EGI Software Verification report templates per Product <https://documents.egi.eu/document/945>

<sup>55</sup> EGI Software Verification guideline [https://wiki.egi.eu/wiki/EGI\\_Verifier\\_Guideline](https://wiki.egi.eu/wiki/EGI_Verifier_Guideline)

<sup>56</sup> SA2 RT-based Verification metrics <http://rt.egi.eu/rt/SA2/sa2-sw-rel-verification-metrics.xls>



The UMD documentation process also started in PQ7. Designed as a medium-term activity, it is aimed to supplement existing Grid middleware documentation by providing oversight, possible usage scenarios and deployment profiles. A new wiki skeleton<sup>57</sup> was created and will be continuously expanded in contents and coverage provided as a volunteer effort by SA2 and interested NGIs.

UMD 1.4.0 comprised of all components of the Globus platform provided by IGE, as well as maintenance updates to gLite components provided by EMI. The UMD 1.4.0 Release Notes<sup>58</sup> provide more detail.

UMD 1.5.0 focused on a comprehensive update of the gLite Compute and Storage components provided by EMI, with WMS 3.3.4 and GE utils 1.0.0 being included for the first time in the UMD<sup>59</sup>.

In general, increased quality in delivered software and documentation contributed to overall improved efficiency in software verification as demonstrated in metrics for individual software verification provided through RT<sup>60</sup>.

### 3.2.3. Deployed Middleware Support Unit

DMSU work followed its established procedures, as reflected by the following figures:

- Tickets assigned to DMSU: 104
- Tickets re-assigned back to TPM: 13
- Tickets forwarded to 3rd level support: 61 (58% of all DMSU tickets)
- Tickets solved by DMSU: 27
- Tickets solved by 3rd level support: 201

In PQ7, 104 tickets were received (-46%, compared to 183 in PQ6), corresponding to the less busy end-of-year time. On the other hand, DMSU solved 26% of those tickets (+6% compared to PQ6). The fraction of tickets returned to TPM remains at approx. 10%.

The mean/median time to solve a ticket continues to improve to 9.5/4.1 days (-7.5/-6.9) improved from 17/11 days to 9.5/4.1. Since PQ6 included the top holiday season, these promising numbers are not suitable to draw a sound conclusion yet.

Discussions on relating to the criteria relating to passing a ticket from DMSU to 3rd line support, and under what condition 3rd line can bounce the ticket back to DMSU, as well as on the details of estimated time-to-fix, differentiated by ticket priority, continued in PQ7. Outcome of the discussions has been captured at DMSU wiki pages, and it will serve as input to the upcoming TCB.

### 3.2.4. Support Infrastructure

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<sup>57</sup> UMD Documentation skeleton <https://wiki.egi.eu/wiki/UMD-1:Documentation>

<sup>58</sup> UMD 1.4.0 Release Notes <https://wiki.egi.eu/w/index.php?title=UMD-1:UMD-1.4.0>

<sup>59</sup> UMD 1.5.0 Release Notes <https://wiki.egi.eu/w/index.php?title=UMD-1:UMD-1.5.0>

<sup>60</sup> SA2 RT-based Verification metrics <http://rt.egi.eu/rt/SA2/sa2-sw-rel-verification-metrics.xls>



During PQ7 TSA2.4 continued to support SA2 software provisioning activities as usual, in more detail we released:

- UMD 1.4.0 (9 items) <http://repository.egi.eu/2011/12/19/release-umd-1-4-0/>
- UMD 1.5.0 (11 items) <http://repository.egi.eu/2012/01/30/release-umd-1-5-0/>
- SAM Update 15 <https://rt.egi.eu/rt/Ticket/Display.html?id=3099>
- CA Update 1.43.1 <https://rt.egi.eu/rt/Ticket/Display.html?id=3191>

According to Google analytics the front end the number of unique visits for this period dropped to 1100 in PQ7 (-8% compared to 1184 in PQ6). Correspondingly, visits to the repository back end dropped to 4009 in PQ7 (-13% compared to 4556 in PQ6). This decline is mainly attributed to site admins refraining from updating/upgrading the local infrastructure short before the end-of-year break.

During PQ7 TSA2.4 started to update the internal workflow of the repository to add support for Debian based PPAs as outlined in following paragraphs. In parallel, we deployed EGI instances of the Stratuslab marketplace (<http://marketplace.egi.eu/>) and appliance repository (<https://appliance-repo.egi.eu/>) to be used by TSA 2.3 in a pilot service that will offer virtual machines with preinstalled middleware services.

### **Repository Front End Activities**

- Upgraded wordpress engine and plugins to 3.3.1
- Fixed a minor bug that produced duplicate posts.
- Added support for Release Candidate posts.
- Updated the post creation plugin to cater for Debian support that is about to be introduced.

### **Repository Backend Activities:**

- Debian support: Design, development, integration and testing on the admin-repo module
- Developments related to the 'testing' repositories manipulation. More specific:
  - The UMD release under testing appears in the corresponding RSS feed once the "Deploy for testing" button has been pressed.
  - The 'updated' value exist in the RSS feed, is updated once the "Deploy for testing" button has been (re)pressed.
  - The corresponding, to the UMD Major version, testing areas is cleaned-up once the release under-composition goes into production or being deleted.
- Minor bug fixing

### **RT Activities**

- Implemented a new Mediawiki RT plugin
- Implemented verification and general SA2 metrics scripts
- Implemented SLA Metrics script
- General maintenance tasks.

### **IT Support Activities:**

- Research on bounce creation for Debian architectures.
- Research on APT like dependency retrieval tool.
- Web site restructuring





- Preparation for Indico upgrade
- Performed regular monthly updates of the inspire-members group from PPT Excel table
- Solved various user problems with Indico and other systems
- EGI Wiki/Indico/Jabber/DocDB, SSO groups and mailing lists administration

### 3.3. Issues and Mitigation

#### 3.3.1. Issue 5: UMD Capabilities not yet defined

The current draft of the Quality Criteria covers all the UMD Capabilities defined in the Roadmap. This draft is currently in the process of being reviewed by the Quality Assurance teams of the Technology Providers. We do not expect significant changes in the overall set of Quality Criteria. In particular the new Quality Criteria for Capabilities that were not covered on PQ6<sup>61</sup> are unlikely to be rejected or dropped so that full coverage of all Capabilities will remain. Therefore this issue is considered resolved.

#### 3.3.2. Issue 14: SA2.3 PMs and effort usage overhead

TSA2.3 is gradually transforming the organisation and implementation of the verification of the supplied software products into a community effort. What started as a funded global task to initiate the verification of Quality Criteria is transitioning into a service delivery model that aligns well with a horizontal platform oriented software provisioning. Well aligned with the platform model, Software Verifiers are self-organising themselves into clusters of experts around a particular type of Grid middleware, thus improving Verification efficiency through specialisation<sup>62</sup>. Through this, and better organisation of the verification processes and documentation, the funded software verification effort returned to acceptable and expected levels.

#### 3.3.3. Issue 15: Distorted DMSU statistics when waiting for a user reply

The GGUS development team communicated a number of reasons why DMSU statistics cannot be reliably cleaned from user reply distortions by automatically setting ticket states based on user interaction. Although those reasons are considered technically sound and valid, a reasonable implementation would overcompensate and therefore cause distortions in the opposite direction, simply because of manual time delays between users replying to the ticket and support staff (not only DMSU) adjusting the ticket state back to “in progress”.

However, even with including the “waiting for reply” time, the DMSU is operating at 9.5 (mean)/4.1 (median) days to solve ticket in DMSU and 1.3 days/1.3h to reassign to 3rd line support, which are acceptable figures. This raises the question whether a technical solution for this issue is warranted based on these figures.

#### 3.3.4. Issue 16: GGUS does not provide sufficient reporting for DMSU

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<sup>61</sup> MS113: Quarterly Report (PQ6) <https://documents.egi.eu/document/881>

<sup>62</sup> Software Verifier Skill matrix [https://wiki.egi.eu/wiki/EGI\\_Quality\\_Criteria\\_Verification\\_-\\_Verification\\_engineer\\_skill\\_matrix](https://wiki.egi.eu/wiki/EGI_Quality_Criteria_Verification_-_Verification_engineer_skill_matrix)



During PQ7 GGUS significantly improved the situation by adjusting the processes and formats of notification Emails sent to support staff. The changes to the Email format was made to allow reliable processing and extraction of information that is currently not supported by the GGUS online reporting engine. This corrective measure was implemented as a transitional solution to allow for better reporting of DMSU needs while the GGUS reporting engine is refactored.

Formally this issue will be kept open until the new GGUS reporting engine will be available.

### **3.3.5. Issue 17: Non-gLite tickets are still not routed through GGUS**

In PQ7a total of 8 tickets on ARC (3) and UNICORE (5) were submitted to DMSU, witnessing that these support channels are getting known, and they were handled with special care to encourage the users. We will monitor these figures for the upcoming reporting periods to be able to draw a conclusion.

### **3.3.6. Issue 18: EMI to stop producing release.xml for EMI version 2**

During the 9<sup>th</sup> TCB meeting<sup>63</sup> EMI announced that they would cease providing release.xml artefacts for software provisioning, beginning with the publication of EMI-2 (planned in April 2012).

At the F2F in December 2011<sup>64</sup> SA2 decided to develop a small web based tool that will assist with generating a release.xml for all technology providers. This tool should be able to extract valuable information such as release notes from the Technology Providers information feed (e.g. RSS).

### **3.3.7. Issue 19: Unclear distinction of documentation responsibilities and UMD repository purpose**

We find out repeatedly that the structure of documentation available with the UMD repository is rather difficult to follow; it is rather difficult to point users to comprehensive documentation covering quite typical cases like "I want to install WMS from scratch", or "I want to upgrade from dCache installed previously according to EGEE recipes". Documents covering such use cases should be linked in the repository.

SA2 concludes that the primary UMD repository purpose is to deliver software that was verified against publically available quality criteria and behaves well in a near-production environment (through StagedRollout). It lies within the remit of the Repository and associated documentation to communicate known issues with installation, configuration and documentation of delivered software, but not to host, provide or even maintain the documentation for software itself.

## **3.4. Plans for the next period**

SA2 started to explore how its services to the EGI community need to evolve to secure continuous and efficient delivery of quality. In collaboration with the Federated Clouds Task Force and volunteering pioneer NGIs and Resource Centres, SA2 will further explore how to organise the services and

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<sup>63</sup> TCB-9 F2F meeting, 23 November 2011 <https://www.egi.eu/indico/event/672>

<sup>64</sup> EGI-InSpire SA2 F2F meeting, 2 December 2011, <https://www.egi.eu/indico/event/683>



supplementary processes and documentation so that they can be reused in a similar or perhaps simplified fashion by communities that integrate on top of a future federated infrastructure platform.

The Quality Criteria are already organised in a product-orientated set of documents, reflecting that a given EGI Capability may be implemented in more than one service present in the UMD. This structure needs to stabilise and prove its usefulness in the ongoing software verification service provided by TSA2.3. These documents then may serve as the basis for community platform-specific quality criteria in the future. TSA2.2 will continue to maintain and update these documents as required through proven feedback mechanisms that were implemented in previous project quarters.

The transitioning of the Software Verification activities will continue in PQ8. Now partially a voluntary effort provided by interested EGI communities, already a “cheat sheet” of verification specialists is maintained within TSA2.3. This organisation is flexible enough to form the basis for platform-focused software verification as part of a platform deployer role in a platform-orientated future of EGI.

Likewise, the technical services provided by TSA2.4 will be evaluated for possible re-use as technical support services integrated into a currently discussed EGI Collaboration platform. Candidates are a simplified Software Provisioning support infrastructure that is easily set up for multiple communities, which might include RT with user group functionality, integration with VM repositories and the EGI VM Marketplace. At the same time the support infrastructure for the current software provisioning service will be maintained according to requirements, such as support for Debian and derivatives, independent sourcing of software updates, and integration of the EGI VM Marketplace and Appliance repository into the general provisioning infrastructure.

The daily work of DMSU will continue, following the established procedures, which are getting well stabilized. The rules of interaction between DMSU and 3rd line support will be clarified and discussed at TCB, aiming at their final approval.



## 4. COMMUNITY ENGAGEMENT

### 4.1. Summary

The community engagement activity within EGI-InSPIRE is now supported through the merged NA2 and NA3 work packages as the 'new' NA2.

The redesign and review of the website content – partly in response to the comments made during the EC review and partly as part of the continued review of the website – progressed during PQ7 with an eventual launch during PQ8. Articles were provided through a variety of communication channels including iSGTW, the EGI Blog, social media (through a newly developed social media strategy), the Public Sector Review magazine and the EGI Inspired newsletter.

Planning around the upcoming EGICF 2012 in Munich continued with the finalisation of the programme generated through the meeting's Programme Committee and the preparation of the website for the opening of registration at the end of January. An EGI presence was established at SuperComputing 2011 in Seattle, e-Science 2011 in Stockholm and at SciTechEurope 2011 in Brussels.

Virtual Teams (VT)s were established and completed their work relating to Inter NGI usage reports and in generating new material from the NGIs for the development of the website. Additional VTs are underway and others are being formulated.

Technical outreach and support to new communities continued through updates and management of the content in the Training Marketplace and Application Database. To support the new activity taking place in the NGIs, a Customer Relationship Management (CRM) system has been established to help coordinate our engagement across new user communities.

### 4.2. Main Achievements

#### 4.2.1. Marketing & Communication

Design work in PQ7 has focused on creating a new look and feel for the project website, introducing more visual elements and giving a greater prominence to social media channels. The new content structure is based on a dynamic two tier menu, which focuses content into strands for new users, existing users, the general public, policy makers and others. The new layout will be realised in html/css, and then imported into the CMS by CESNET in PQ8, for launch at the EGICF 2012.

Additional use cases have been developed<sup>65</sup>, including a story on the LizzaPAKP grid-enabled application, which is helping city planners to manage drinking water supplies around Belgrade, Serbia. A case study on hunting viruses using the grid was published in iSGTW in January 2012, and is currently one of the top rated stories on the iSGTW website<sup>66</sup>. The EGI blog has continued to be active, and there are now 84 blog posts in total. Members of the dissemination team have also blogged

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<sup>65</sup> [http://www.egi.eu/results/success\\_stories/](http://www.egi.eu/results/success_stories/)

<sup>66</sup> <http://www.isgtw.org/feature/hunting-viruses-finding-needle-haystack>



for the GridCast blog<sup>67</sup> at events such the Innovation Forum, Brussels, the eScience2011 event in Sweden and the SARA 40<sup>th</sup> anniversary event. A new social media strategy was developed in PQ7, creating dedicated social media feeds for general, user community, tech/ops and policy through Twitter, Facebook and the blog, bringing the strands together through IFTTT<sup>68</sup>. To publicise the revitalised Facebook page<sup>69</sup>, a mascot competition was launched on 11 January to choose a mascot for EGI from designs and concepts submitted by the EGI community. Voting is open until 8 February, with a winner to be announced via social media on 15<sup>th</sup> February 2012.

In PQ7, the work packages NA2 and NA3 merged. The new collaborative events team formed between TNA2U.2 and TNA2U.4 is jointly planning outreach and attendance at events, and has worked on attendance at events such as the SHIWA workshop in Budapest and CloudScape IV, Brussels in February and is looking ahead to ISGC 2012 in Taipei, the EGICF 2012, the EGU General Assembly in Vienna and the HealthGrid 2012 event in Amsterdam. A Virtual Team has been established in order to coordinate on NGI participation in the EGU event to reach out to current users of the infrastructure in the earth sciences field. A further Virtual Team has been set up to work with the NGIs to contribute organisational and people profiles, together with local success stories to the EGI website.

NA2U.2 has continued to participate in the Programme Committee for the ISGC2012 event in Taiwan in March 2012 and to the PC and LOC for the EGICF2012, contributing to the website, the exhibition and sponsorship guides, the marketing materials and advertising of the event. Through the media partnership with Tabor Communications, the EGI Community Forum is a banner featured event on the HPCwire events website, and is included in the events feed sent to all subscribers for *HPCwire*, *HPC in the cloud* and *Datanami*.

In PQ7, NA2U.2 worked with Public Service Review to produce a dedicated 8 page booklet about EGI<sup>70</sup>, which included an article about the Digital Agenda Commissioner, Neelie Kroes by the *Public Service Review: European Union* Editor, a 4 page article on EGI and a full page advert for the Community Forum. This was distributed to 140,000 policy subscribers by email and in printed form at the SciTech Europe event in Brussels in November.

The marketing team also attended and prepared for a number of additional events during PQ7. NA2U.2 produced an EGI postcard added to the delegate pack for the first European Gender Summit in Brussels, which led to EGI signing the European Gender Summit Policy Manifesto. Activities also included hosting a booth at SC11, Seattle, US in November, an event which attracted around 10,000 delegates. EGI distributed T-shirts at the event which featured a QR code leading to a hidden “Easter Egg” page on the website<sup>71</sup>, so that access to the page from the T-shirts could be tracked. EGI also hosted an information stand and a masterclass by the Director at SciTech Europe in Brussels, Belgium

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<sup>67</sup> [www.gridcast.org](http://www.gridcast.org)

<sup>68</sup> IFTTT (If This Then That), a social media aggregator.

<sup>69</sup> <https://www.facebook.com/europeangrid>

<sup>70</sup> [http://www.egi.eu/export/sites/egi/results/EGi\\_8pg\\_Booklet.pdf](http://www.egi.eu/export/sites/egi/results/EGi_8pg_Booklet.pdf)

<sup>71</sup> <http://www.egi.eu/node.html>



in November. A DVD featuring the masterclass, slides and the 8 page booklet is in preparation for distribution on the cover of *PSR: Science & Technology*. The team also attended the eScience 2011 event in Stockholm in December, including blogging from the event and publishing an article in *iSGTW* based on an interview with Nobel Prize winning scientist, Brian P Schmidt<sup>72</sup>.

The sixth issue of the *EGI Inspired* was distributed on 1 November to the project team, on the website and via social media. The project team also produced two Director's letters in November and January. Extended articles about EGI were published in the first issue of *PanEuropeanNetworks: Science & Technology* and in *Public Service Review: Science & Technology*. There were seven EGI-related items in *iSGTW*, which in December and January corresponded to an average of nearly one article per issue<sup>73</sup>. The article in *PanEuropeanNetworks: Science & Technology* included a front cover logo, and an advert for the Community Forum in the inside cover, next to a full page article by David Willetts, UK Minister for Universities and Science who is a known proponent of e-infrastructures.

#### 4.2.2. Strategic Planning & Policy Support

Resulting from the first project review, the name of this task was expanded from "Policy Development" to "Strategic Planning and Policy Support". The new task description includes activities at the strategic level that were started during the first year and it is now structured to better support the strategic decision making process. Three partners participate in this task: EGI.eu, STFC and FOM.

In EGI.eu, the Strategy and Policy Team (SPT) has been active in both the organisation of community events as well as the attendance of external ones. The SPT supported the organisation of the first NGI International Liaisons Kick-off Meeting held in Amsterdam on 10 Nov 2011. In addition to pre-event organisation, the SPT supported the event through summary notes and. The SPT also supported a 2<sup>nd</sup> workshop around User and General EGI Sustainability held 24-26 Jan 2012 also in Amsterdam. In addition to supporting the agenda structure and content, SPT members managed a break-out session and provided a presentation on value and governance of EGI. Resulting from the workshop was an article to be included in the next *EGI Inspired* Newsletter.

Preparations have also gone underway for the EGIF 2012 in Munich, Germany through the submission and acceptance of two sessions around sustainability and NGI policy development as well as participation in the Program Committee. Several events have also been attended and supported in a variety of way such as the TCB F2F, Amsterdam, 23 Nov 2011 with secretariat support provided, CHAIN-EGI meeting, 27 Jan 2012, Amsterdam also with secretariat support. External networking events include SciTech Europe, Brussels, 24 Nov 2011; EGI Info Service workshop, Amsterdam, 1

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<sup>72</sup> <http://www.isgtw.org/feature/where-astronomy-meets-data>

<sup>73</sup> <http://www.isgtw.org/feature/protecting-portugals-aveiro-lagoon>

<http://www.isgtw.org/feature/hunting-viruses-finding-needle-haystack>

<http://www.isgtw.org/spotlight/gem-user>

<http://www.isgtw.org/feature/roots-all-arabic>

<http://www.isgtw.org/feature/fixing-analog-link-digital-chain>

<http://www.isgtw.org/feature/horizon-2020-structural-funds-2014%E2%80%932020-%E2%80%93-what-expect>



Dec 2011; 2012 Internet Society Event, Amsterdam 12 Jan, 2012; ERA Conference, Brussels, 30 Jan 2012 with supporting article for the EGI Inspire Newsletter. Further information provided in Section 2. Regarding the establishment of external collaboration, 5 new MoUs were signed over the last quarter: EDGI, e.nventory, SHIWA (Project), BCC/Ukraine (Resource Provider) and the WLCG (VRC). Five other MoUs are still under active negotiation: DANTE (Organisation), UVACSE (Technology Provider), DC-NET/DHC, Comp Chemistry and Astronomy/Astrophysics (VRC)<sup>74</sup>. Concerning the advancement of ongoing activities within current MoUs, the achievement of milestones are tracked through direct engagement with the partners and recorded via dedicated pages on the DocDB. In the area of the SLA with the technology providers, requirements for enabling SLA monitoring were fed to the GGUS development team.

During PQ7, the SPT has been supporting the EGI Strategic Plan in providing several key pieces of information such as a market segment analysis and a detailed value network analysis. In terms of the evaluation of EGI as an ERIC, the SPT put together a series of questions posed to the ERIC Team for clarifications. The SPT has also analysed the European Research Area Committee (ERAC<sup>75</sup>) and ESFRI input on ERA and produced an EGI ERA Position Paper<sup>76</sup>. In the area of virtual team project, the SPT has created and is leading the EGI Compendium<sup>77</sup>. In the area of surveys and questionnaires, the SPT has worked the wider e-Infrastructure community, which can require a significant amount of time and effort. These have included an “Impact of e-Infrastructure” questionnaire; analysis for an “ICT Survey for standardization”; and “European e-Infrastructure Observatory”.

The SPT strives to communicate on-going developments through targeted messages that have included two articles, one published in iSGTW “Horizon 2020 & Structural Funds (2014–2020) – What to expect”<sup>78</sup> and another in the e-IRG newsletter on “Towards a sustainable EGI ecosystem”<sup>79</sup>. Two other articles are currently being produced which regard the outcomes from the 2<sup>nd</sup> EGI Sustainability Workshop and from ERA conference, both to be included in the next issue of the EGI Inspired Newsletter<sup>80</sup>.

The website and wiki of EGI.eu have been updated by creating dedicated collaboration pages for each of the newly signed MoUs; updating the Digital Agenda actions list status in the EGI wiki; updating description of EGI services<sup>81</sup>; and refactored PDT/SPT page<sup>82</sup> according to the new DoW.

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<sup>74</sup> <https://wiki.egi.eu/wiki/PDT:Agreements>

<sup>75</sup> [http://ec.europa.eu/research/era/pdf/contributions/erac/erac-opinion-final\\_en.pdf](http://ec.europa.eu/research/era/pdf/contributions/erac/erac-opinion-final_en.pdf)

<sup>76</sup> <https://documents.egi.eu/document/891>

<sup>77</sup> [https://wiki.egi.eu/wiki/VT\\_EGI\\_Compndium](https://wiki.egi.eu/wiki/VT_EGI_Compndium)

<sup>78</sup> <http://www.isgtw.org/feature/horizon-2020-structural-funds-2014-2020---what-expect>

<sup>79</sup> [http://www.e-irg.eu/images/stories/e-irg\\_newsletter\\_dec\\_2011.pdf](http://www.e-irg.eu/images/stories/e-irg_newsletter_dec_2011.pdf)

<sup>80</sup> [http://www.egi.eu/export/sites/egi/results/newsletters/Newsletter\\_Winter\\_2012.pdf](http://www.egi.eu/export/sites/egi/results/newsletters/Newsletter_Winter_2012.pdf)

<sup>81</sup> <https://wiki.egi.eu/wiki/EGI-InSPIRE-Tasks>

<sup>82</sup> <https://wiki.egi.eu/wiki/Policy>



The SPT provided several support services for a number of policy groups both in terms of secretariat support and handling policies and procedures. This includes the SPG meeting and minutes as well as handling the approval of two SPG policies (service operations security policy; and endorsement of VM policy approval); SCG minutes; TCB F2F, Amsterdam, 23 Nov 2011 and minutes; and UCB meeting and minutes on 25 November 2012. In addition, the SPT has provided a draft escalation section for OLA and has updated the list of policies and procedures on the relevant wiki pages and aligning appropriate copyright statements.

FOM has worked on two new releases of the trust anchor distribution, extending the range of trusted identity providers around the Mediterranean and the Americas. Also, based on the feedback from operations, technical guidelines for authentication operations in the PKIX domain were tightened. A significant number of new authorities are still coming in, with policy support for the appropriate integration of trust fabrics with EGI deserving special attention, thus consuming more resources.

STFC has continued to provide leadership for the Security Policy Group (SPG). Two security policies were finished, approved and adopted (with effect from 1st Feb 2012), namely "Service Operations Security Policy"<sup>83</sup>. Same also happened for "Endorsement and Operation of Virtual Machine Images"<sup>84</sup>. Work continued on the revision of the old top-level Security Policy and of the Accounting data handling policy. The SPG Chair also worked on the following topics:

1. Attended several TAGPMA (International Grid Trust Federation) phone conferences
2. Continued work on the activity called "Security for Collaborating Infrastructures" which is a collaboration between EGI, WLCG, OSG, PRACE, and XSEDE to build a standard framework for security policy for interoperation. A videoconference was arranged and chaired
3. Attended the 2nd workshop on Identity Management for Scientific Collaborations held at RAL in early November 2011. The SPG chair was on the organising committee for this event both as a local host and as a Security architect/contact person for the HEP community. Chaired a session and prepared and presented the Summary Vision Statement
4. Attended EUGridPMA meeting in Ljubljana (Jan 2012). Led an activity preparing Guidelines on Attribute Authority Service Operations. V1 of this document was finalised during this meeting
5. Participated in Security Risk assessment sub-group of an activity evaluating future technology choices for WLCG (HEP) in the area of security
6. Other tasks included reviewing papers submitted to the Security and Networking track for the ISGC2012 conference and a peer-review of the self-audit of the DutchGrid CA at Nikhef.

#### 4.2.3. Community Outreach

PQ7 included the following events, meetings and planning discussions that contributed to EGI's community outreach activity. Community outreach events and meetings:

- The Astronomy and Astrophysics VRC coordinated a meeting in Paris on the 7<sup>th</sup> November with other specialist sub-communities relating to Astronomical research<sup>85</sup>.

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<sup>83</sup><https://documents.egi.eu/document/669>

<sup>84</sup><https://documents.egi.eu/document/771>

<sup>85</sup> <http://twiki.oats.inaf.it/twiki/bin/view/AstroVRC/AstroVRCWorkshop>





- The goal of the event was to reorganise the astro community to be able to proceed with EGI engagement, possibly in the form of multiple even more specialist VRCs. Decisions have been made about this and a number of VRCs will be established.
- During the meeting several groups or projects from the astro community gave presentations. These were quite heterogeneous. Some groups/projects have strong need, others weak needs yet others have no need for DCIs. They talk about DCI adoption at completely different levels, from different perspectives, with different motivations and timelines.
- Many groups have already used grids (since EGEE) or still use EGI. The talks by these group articulated many complaints or requirement concerning EGEE/EGI. UCST went through these slides from the agenda and collected these requirements and issues. Complaints about MPI came up several times.
- Cracow Grid Workshop 2012 on the 8<sup>th</sup> November 2011.
  - EGI.eu provided a keynote on EGI's support for communities. There was much evidence of projects and work based on the Polish Grid infrastructure. This included the MAPPER-related activity with which we are already involved. The key follow on from this event will be for us to continue to work with the Polish NGI to support their users in the wider context where applicable.
- The first NGI International Liaisons (NILs) meeting was held in Amsterdam on the 10<sup>th</sup> November. This meeting established the NIL role in a formal meeting and countries were invited to nominate their representatives.
- UCB met on the 25<sup>th</sup> November<sup>86</sup> with the NILS and Virtual Teams model was discussed, the EGICF2012 was previewed and those communities present presented their reports.

Community-related achievements:

- WLCG (Worldwide LHC Computing Grid) signed a MoU to integrate their VRC with EGI.
- WeNMR (structural biology) produced an impactful and compelling poster outlining their activities and acknowledging the support that they receive from EGI in the form of a stamp of endorsement. The concept of the stamp was discussed with the other community representatives and all were invited a) to produce a poster promoting their VRC and b) to add this or a similar stamp of endorsements. The WeNMR stamp graphic is freely available from: <http://www.wenmr.eu/wenmr/>.
- With respect to Humanities, having signed a three-way Letter of Intent with DARIAH and CLARIN towards establishing a Humanities VRC, it has emerged that the two ESFRI projects are now moving towards two separate ERICs and therefore establishing two separate VRCs would be more appropriate. To this end Martin Wynne from CLARIN attended the User Sustainability meeting and an extended teleconference was held with Sally Chambers, Secretary General of DARIAH on the 30<sup>th</sup> January. It was agreed that we would talk again in May after the group have held their first All Hands meeting in April and once they have a clearer understanding of their own goals and needs. During the conversation the goals and structure of DARIAH was discussed. Of

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<sup>86</sup> <https://www.egi.eu/indico/getFile.py/access?resId=1&materialId=minutes&confId=702>



the four Virtual Competency Centres, the one relating to e-Infrastructures will probably be of most interest to EGI.

Other activity of note:

- Steve Brewer was assigned as programme chair for the EGICF 2012 and various meetings and activity took place towards planning and preparation for this event. Submissions were sought, approximately 170 were received. Most were accepted – some were reassigned as posters or demos. The programme has been prepared and the Programme Committee have met and reviewed the detail.
- Progress is being made with the Digital Cultural Heritage Community. Key areas where technical collaboration with EGI's partners and members of the DCH community have been identified and it is anticipated that these will come in to play during PQ8.
- HealthGrid 2012 and the collocated ISGW-LifeScience meetings will take place in Amsterdam in May. Meetings were held to discuss the opportunities for collaboration and EGI's potential contribution. EGI agreed to sponsor the event and also we will host a facilitated discussion to for a roadmap to develop Science Gateways for research groups across the Life-Sciences community.
- EGI.eu and SHIWA<sup>87</sup> supported two co-located linked workshops about workflows in e-Science. It is anticipated that there is sufficient commonality in the likely attendance at each of the two workshops for them to be run 'back to back' and thereby for each to benefit from enhanced attendance and greater impact. The event is scheduled to take place 9-10 February in Budapest and 29 participants have registered. The first workshop is focused on the SHIWA project with the main goal to introduce and collect feedback about the SHIWA solutions that enable cross-workflow and inter-workflow exploitation of Distributed Computing Infrastructures. The second workshop is for EGI.eu and the Hungarian National Grid Infrastructure. This workshop seeks to bring together representatives of e-Science communities together with the providers of services, workflow technology and grid infrastructure. The objective is to further clarify the requirements of 'Scientific workflow systems'<sup>88</sup> in order that such systems can be incorporated into the European Grid Infrastructure.

The User and General EGI Sustainability meeting took place in Amsterdam on the 24<sup>th</sup> – 26<sup>th</sup> January 2011. The following communities were represented through invitations issued through the UCB:

- Worldwide LHC Computing Grid (WLCG)
- Life Sciences Grid Community (LSGC)
- Astronomy and Astrophysics (A&A) – LOFAR & SKA
- Worldwide e-Infrastructure for NMR (WeNMR)
- Computational Chemistry (COMCHEM)
- Humanities (DARIAH, CLARIN)

At the start of the meeting the emerging strategic plan was presented to representatives from the user communities. The representatives then presented their perspective on the current situation and on

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<sup>87</sup> [www.shiwa-workflow.eu](http://www.shiwa-workflow.eu)

<sup>88</sup> [http://en.wikipedia.org/wiki/Scientific\\_workflow\\_system](http://en.wikipedia.org/wiki/Scientific_workflow_system)



future needs and plans. This strategic presentation focussed on the concept of the separation of core services that should be supported and delivered by the EGI community, and domain specific services which will increasingly need to be supported and often delivered by the communities themselves. There then followed two sets of parallel breakout sessions during which participants discussed these issues. Firstly the two groups discussed user community service needs then the participants, still within the same groups, discussed how these services would be developed. The goal of the afternoon was to capture a comprehensive picture of what services are needed in the future for each user community, where they need to be deployed, and how they will be supported. As a result of these discussions services were grouped under four headings:

- **Community-specific services**
  - Eg. VisIVO, GReIC, Climate-G, GROMACS?
- **Common front-end services: portals...**
  - TAVERNA, MOTEUR2, DIANE, Ganga, PGRADE?
- **Services to access infrastructure resources**
  - CREAM, AMGA, GridWay?
- **Core services exposed to users**
  - Monitoring, Accounting, Messaging, Logging

The important points for user-related services were:

- Core infrastructure services can be considered separately from community specific services
- There will be some services that are common to multiple but not all communities
- Support services are important but can be considered in a similar way in that there will be common core support services but communities will also want to supply their own support services that can build upon and extend these services.

Overall, the following conclusions emerged from the user community phase of the meeting:

1. General enthusiasm for this grouping of services
2. Generic solutions should be sought where possible
3. Production-grade solutions are required
4. Agreement on a distinction between the development/maintenance role and the hosting of software applications
5. A mixture of open source, commercial and project-based software is acceptable where applicable
6. There should be a focus on e-Infrastructure not 'grid' in general
7. Much work will be required to coordinate elements through interfaces, standards and communication between NGIs, VRCs & projects

The remaining days of the meeting went on to discuss the formal development of the strategies relating to this which is discussed elsewhere.

#### **4.2.4. Technical Outreach to New Communities**

##### **4.2.4.1. User and Community Support Team**

PQ7 marked the start of the "Technical Outreach to New Communities" (TONC) subgroup of the User Community Support Team within EGI.eu. As part of the restructuring the management of VO



registration and validation has been transferred to SA1 together with the technical support provided for existing users. The TONC group consists of three persons and made the following progress in PQ7:

- During the period 20 user requirements<sup>89</sup> were solved. Two new requirements<sup>90</sup> were discussed with technology providers through the EGI Helpdesk and got accepted as bugs. These are promised to be fixed in forthcoming middleware releases. TONC keeps track of through the recently restructured Open requirements page<sup>91</sup>, which shows solved and open requirements separately, through an interface which is connected to the RT ticketing system. During QP6 experts through the EGI Helpdesk helped us identify five requirements<sup>92</sup> as features related to multiple middleware products. TONC collected the low-level details from requestors for these. Two out of the 5 requirements got closed because of the lack of information that the user was able/interested to provide. The remaining three are part of a batch of 8<sup>93</sup> requirements which were submitted to the TCB. Out of 8 submitted requirements, technology providers endorsed 5 of them. The remaining three will be discussed at the next TCB meeting (TCB-10).
- The team is involved in four, already active Virtual Team projects (Intelligence Collection; ESFRI Contact List; MPI; Federated Identity Providers Assessment) and helped NGIs formulate and promote four additional VTs (Fire simulation; Speech Processing; Application Porting Howto Guide; ESFRI Demonstrators). In case of enough interest from the NGIs, these projects will start in PQ8.
- Together with the owners of “robot certificates” the TONC team tried to establish a process that could help EGI assess the size of user communities who access the infrastructure through applications and portals that use robot certificates, and therefore are invisible by the current statistics. The full picture will be visible only in PQ8, however based on the initial findings these 50-55 robots currently serve around 200 users, which is still insignificant compared to the size of community who use personal certificates to access EGI. (around 20k)
- The EGI Federated Cloud Task Force was supported by setting up a requirement tracking dashboard and by formalising a use case from the developer team of gUSE high-level user support tool.
- Collaborations with the ScalaLife project cross-referenced user support web pages, training materials and on the identification of EGI users who could benefit from the application support that ScalaLife can provide for GROMACS and DALTON users.
- The AppDB team completed sprints with the support of EGI.eu, particularly (1) the consolidation of duplicated and similar entries in the Database; (2) the removal of “orphan entries”, whose owner left the EGI community and his/her institute and NGI does not provide support for the application any longer. By the end of PQ7 a written AppDB development plan for 2012 emerged. The plan defines tasks for several phases, separated by the key events EGICF 2012, EGI-InSPIRE review and EGITF2012.

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<sup>89</sup> Solved user requirements: [https://wiki.egi.eu/wiki/Solved\\_user\\_requirements](https://wiki.egi.eu/wiki/Solved_user_requirements)

<sup>90</sup> RT ticket numbers: 3087, 2491

<sup>91</sup> Open user requirements: [https://wiki.egi.eu/wiki/Track\\_User\\_Support\\_Requirements](https://wiki.egi.eu/wiki/Track_User_Support_Requirements)

<sup>92</sup> RT ticket numbers: 910, 2023, 926, 2969, 2985

<sup>93</sup> RT ticket numbers: 910, 926, 916, 919, 922, 924, 2024, 2877



- Finalised an MoU with the SHIWA project which, among other items provide workflow-specific user support services for EGI communities. The organisation of a joint workshop with SHIWA on related topics has begun with involvement from TNA2.4.
- Established a “portal community” within EGI to provide a forum for those developers, operators and users who work or are interested in portal and gateway related activities. Through this community TONC finalised assessment aspects to be used within a “portal technology comparison table”. The table aims to provide an analysis of existing and reusable portals, portal developer frameworks, portlets and components to help scientific communities and their supporting NGIs identify solutions that best meet their needs and should be considered when building and using portals. The table will be setup during PQ8.
- In late November an email list has been established for those EGI members, who are interested in and/or who already use the MATLAB software on NGI resources. The list has ~20 members and aimed to be used for information exchange between these partners, and as a discussion forum where the details of possible need for wider, more harmonised MATLAB access in EGI can be clarified. Such request has not emerged from the email list yet.
- With SA1 identify those VOs that were inactive in the last 12 months, and – after consultation with the VO managers – suspend the VOs so their users do not appear in EGI & NGI statistics. While this had a slight drop in user numbers, the addition of new users in almost all of the disciplines compensated this and overall the number of registered users increased with ~10%.
- As primary authors, TONC members are involved in the following contributions to the EGICF 2012: (1) Evolution of User support platform, (2) The Virtual Team framework for outreach to new communities, (3) Workflow integration & interoperability workshop, (4) Requirements - process and achievements, (5) Assessing the number of EGI users
- Published four posts in the EGI blog about: Last major AppDB release; MapReduce-Hadoop technology and use cases; Portal community and portal comparison table; Assessing the size of robot certificate user communities.
- Support the Ibergrid team (Spain-Portugal) in the refocused global task (VO services → Customer Relationship System) with defining use cases, goals as well as providing feedback for/on the system. The activity was also driven by the needs identified in the “Intelligence Collection” and “ESFRI Contact List” Virtual Team projects. Detailed report about the CRM system is included in this section of the quarterly report below.
- Contributed to the development of the EGI Strategy through internal discussions in EGI.eu, as well as public discussions at the EGI Sustainability Workshop. These will continue in PQ8.
- Work with SA1 on defining a monitoring framework with documentations within the EGI service monitoring system that can be used by projects of the EGI ecosystem that provide user level software services. The development is expected to conclude in PQ8.

#### 4.2.4.2. Applications Database

During PQ7, the Applications Database received several new features pertaining to dissemination and notification. In particular, registered users now have the ability to monitor information flow through XML feeds. These feeds support both the RSS and Atom formats, compatible with the majority of modern feed readers, and may be personalized by the user, in order to inform only about events of his or her choosing. Examples of such events would be the addition of a new application under a specific discipline, the addition of a ranking or comment entry to an existing application, etc. Furthermore, this



information may be also delivered through individualized mailing lists apart from feeds. In this case, the user has a choice of receiving a daily, weekly, or monthly digest of each particular mailing list. Privileged mailing lists have been also added, in order to inform administrators, managers, NGIs, etc. accordingly, about important and/or special events, such as role verification requests.

Another important issue completed during PQ7 is the merging of multiple instances of the same application into one. In order to achieve this, some improvements were introduced into the data model; applications can now be listed under more than one (sub) discipline, individual application contacts feature expertise information, and application name uniqueness has been enforced. Moreover, validation rules concerning entered data have been rendered stricter, and the information editing experience has been greatly improved in general.

Finally, it should be mentioned that version 2.3.0 of the AppDB is fully compatible with Internet Explorer 9.0, that the wiki pages have been updated with the relevant documentation for version 0.2 of the AppDB REST API, and that there has been much work done concerning the improvement of the graphical user interface and the correction of bugs, so as to provide a smoother user experience.

#### **4.2.4.3. Customer Relationship Management system (CRM)**

As part of the strategy focused on embracing new user communities in EGI and maximizing the potential of existing communities, an optimised management of relationships between EGI, NGIs and their potential user leads has emerged as a priority. The work developed during PQ7 has focused on the research, test, deployment and configuration of technical solutions that could support EGI and NGI representatives managing their contacts and activities through the overall process of bridging EGI with (new) user communities. The purpose of this task was presented and explained in detail during the first EGI NIL Kick-Off Meeting held in November 2011.

During PQ7 the following activities were performed:

- Capture and review the requirements concerning the implementation of a Client Relationship Management (CRM) process in EGI.
- Research and study different CRM technologies.
- Installation of a CRM development instance based on vtiger technology. Understand how the technology could be customized to satisfy the requirements and be used in the EGI context.
- Discussion and definition of the data models (structures and entities) to be adopted in order to implement different use cases for EGI.eu and NGI representatives.
- Explore vtiger functionalities that could be important for EGI such as the implementation of new modules.
- Explore vtiger capabilities such as the ones offered by the reporting module (creation of dashboards, creation of automatic reports, etc...), implementation of automatic filters, and configuration of the vtiger web interface.
- Integration and testing of the EGI SSO LDAP authentication
- Participation in the Intelligence Collection and ESFRI Contact list EGI Virtual Teams to receive input and feedback on CRM configuration.

The EGI CRM has been tested and will be presented and demonstrated to EGI.eu and NGI representatives on the 13th February 2012 in a webinar. According to the received feedback the fine



tuning of the system will take place before the EGI Community Forum, where presentations and discussions will indicate the official opening of the tool for the EGI community.

#### 4.2.4.4. Training Marketplace

During PQ7 significant improvements have been made to the user interface for the Training Marketplace (TM). The calendar display has been updated and improved to support multiday events and the calendar has become the default display option when browsing for events (enabled using a new module and also required development work to get it integrated with ammap). Ammap pop-ups display past events as well as future events - five each by default and a more button to view fuller content. A new content type, online training, has been enabled in the live site. A number of bugs have been fixed including the Go Back button working correctly with the calendar and tickets have been closed. The administration interface has gone live and has also been upgraded. This allows the UCST to manage TM entries from one simple interface without needing knowledge of Drupal. Further fields, such as submitter's email and name have been included. A number of routine and security updates have been applied to Drupal modules. Cookie Law has been extensively investigated. until a Drupal module is developed to enable full compliance the TM is adopting EGIs policy wrt Cookie Law.

Work already started in PQ7 but which will be ongoing in PQ8 is to develop improvements to search functionality and display. Already the search results have been cleaned and superfluous search display options have been removed. The results display has been weighted to show newer results first. Ongoing work is to provide further improvements to the results display. It is possible that an added benefit of this will be an improved search functionality of the legacy “EGEE Digital Library” training marketplace events. Another method being investigated to improve the legacy EGEE Digital Library data is adding tag fields to entries, to allow users and administrators to either tag an entry with relevant keywords, categorise it into one of the TM entry types (e.g., event, online training) or mark it as obsolete which will hide it from display. Later in PQ we will be working on improvements to the TM gadget generator, to allow users to filter results by country. Currently this is possible in the map display but filters will be applied to the calendar and list views too. Longer term the sustainability model for the TM will be developed. Currently the UK NGI is looking into attracting non-HEI training providers including commercial providers to user the TM as a long term sustainability option.

#### 4.2.5. Current Community Virtual Teams

##### 4.2.5.1. Intelligence Collection & Analysis Process

EGI needs a process to capture and analyse conversations that NGIs have with scientific communities. This process can help EGI to know who we (as a community) talk to:

- What is the “big picture” of the collaborations between NGIs and scientific communities?
- What are the commonalities in the requested support and services?

A VT<sup>94</sup> has been established in PQ7 to define this process. The VT is led by EGI.eu and has active members from Finland, France, Germany, Hungary, Lithuania, Poland, Portugal, Slovakia, Spain,

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<sup>94</sup> Intelligence Collection VT: [https://wiki.egi.eu/wiki/VT\\_Intelligence\\_Collection](https://wiki.egi.eu/wiki/VT_Intelligence_Collection)



Switzerland and the United Kingdom. The team progressed according to plans and so far performed the following activities:

1. Defined what we (an NGI, or as a community) would like to know about the conversations of NGIs and scientific communities.
2. Provided instructions and feedback to the Ibergrid team in TNA2.5 Global task on how to setup and configure the “Customer Relationship Management” system which is envisaged as the tool that will underpin the intelligence gathering process within the community.
3. Attended a webinar<sup>95</sup> delivered by Ibergrid and EGI.eu about the CRM system, the implemented use cases.

Concerning plans for the future: VT members (and members of the ESFRI Contact list VT as well as other NILs/NGI persons) are being invited to try the CRM system and provide feedback on it's processes and configuration by February 27 2012. The system will be finalised by mid-March. Presentations and discussion of user experiences in Munich, at the Community Forum will mark the opening of the CRM system for the whole EGI community and the end of the Virtual Team project.

#### **4.2.5.2. ESFRI Contact list**

The ultimate goal of this project is to gather and distribute within EGI-InSPIRE a comprehensive list of relevant ESFRI project contact points. This will build upon the initial information gathered earlier in 2011 by UCST. That investigation provided comprehensive information about ESFRI projects, the sites associated with these projects and the countries involved at that point in time. Not all sites are connected to NGIs in a particular country. The aim now is to define a two-step process: firstly to establish and confirm the sites associated with relevant (i.e. DCI-dependent) ESFRI projects and secondly to identify EGI/NGI appropriate contact points for those sites as well as appropriate and useful contact points for the ESFRI projects at a higher/international level.

The participants of this VT will act as the guinea pigs to test this data gathering process and then act as the reviewers to improve the process. The refined process will then be circulated to all of the NILs in order to complete the data gathering exercise across EGI. This project is running in parallel with the Intelligence Collection & Analysis Process VT project which is also responsible for the implementation of the CRM system. The two projects are coupled in such a way that the data collected on contacts will be fed into the CRM and then the system will be evaluated by the team.

The project is on track as defined in the plans for this quarter. Most of the participants have followed up on the data supplied to them by UCST and have supplied comprehensive contact details for their country. The next stage will be to enter this data into the configured CRM and for this selected group to evaluate the CRM in terms of the relevance and flexibility of the data and interpreted intelligence. The project will end at the end of February approximately at the point when the pilot data has been entered into the CRM and a preliminary evaluation of the new system conducted.

#### **4.2.5.3. MPI within EGI**

MPI within EGI virtual team was created in November 2011. The aim of this virtual team is to collaborate with MPI user communities and enhance MPI experience and support for EGI users. The

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<sup>95</sup> EGI CRM Webinar: <https://www.egi.eu/indico/conferenceDisplay.py?confId=818>





first steps of this new virtual team were to identify the current MPI deficiencies within EGI and to get in contact with the different NGIs and MPI groups to know their success stories and feedback. The first month was created a new wiki space dedicated to the new MPI VT<sup>96</sup> and a new SSO group (vt-mpi) plus a mailing list ([vt-mpi@mailman.egi.eu](mailto:vt-mpi@mailman.egi.eu)). During the last months six tasks were created to track the effort of the different MPI members.

One of the initial problems was located in MPI documentation, this documentation was fragmented between different sources. The MPI documentation was restructured to be merged in a single wiki page. Now this documentation includes a MPI administrator guide as well as new sections to clarify other MPI issues<sup>97</sup>.

The MPI monitoring system uses the SAM MPI Nagios probes. These do not currently check all the MPI features and do not really detect if a site is providing a good MPI service or not. MPI VT has discussed about the need to develop a new set of MPI probes to improve MPI reliability and availability statistics. This task is still in progress, a new set of requirements are being written by MPI members to include the new probes to be developed by SA3 members. Meanwhile a new VO was created to include and support MPI sites (VO MPI-Kickstart). This VO was created to test and help MPI support within MPI, several sites are already included and the new VOMS configuration is available to be used by the different NGIs<sup>98</sup> a new web page was created to registry the new VO members<sup>99</sup>.

MPI VT has just started its work and some tasks still need to be defined, such as accounting for MPI jobs and the information system enhancements. The roadmap for the next months is oriented to these tasks:

- Continue to collect feedback from NGIs and users: NGIs are preparing different surveys for MPI VT working group. These surveys are devoted to identify the current status of the computational resources made available by those sites that are part of the National as well as EGI infrastructure, focusing the attention on the resources devoted for parallel calculations.
- Study the usage records of the different batch systems and collaborate with JRA1.4 members to provide a complete accounting system in EGI.
- Nagios probes: MPI VT has requested to include a new GOCDB service (MPI)<sup>100</sup>, at this moment this requirement is on hold status, waiting for the MPI VT tests and nagios development before its implementation.
- Add new sites from different NGIs to support MPI-Kickstart VO.
- Include a new user documentation section into EGI MPI wiki page.
- Information system: MPI VT group will continue working to detect information system gaps or issues about the information published by the MPI sites.

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<sup>96</sup> [https://wiki.egi.eu/wiki/VT\\_MPI\\_within\\_EGI](https://wiki.egi.eu/wiki/VT_MPI_within_EGI)

<sup>97</sup> <https://wiki.egi.eu/wiki/MAN03>

<sup>98</sup> <https://www.metacentrum.cz/en/VO/MPI/index.html>

<sup>99</sup> [https://egee.cesnet.cz/mpi/registration/prihlaska\\_priprav.php](https://egee.cesnet.cz/mpi/registration/prihlaska_priprav.php)

<sup>100</sup> <https://rt.egi.eu/rt/Ticket/Display.html?id=3396>



#### 4.2.5.4. Assessing the adoption of Federated Identity Providers within the EGI Community

The goal of the VT<sup>101</sup> is to explore the current coverage of NGIs with identity federations and their potential for within EGI.

The VT started in the middle of December 2011 and consists of representatives from seven NGIs (Czech Republic, France, Greece, Ireland, Italy, Germany, and Switzerland). In order to assess the readiness of the NGIs in adopting of the Terena Certificate Service, a questionnaire has been developed and thoroughly discussed. Most of the participating NGIs has collected the results and filled in the questionnaire. The results so far have revealed a large difference between the NGIs in terms of the support and availability of the TCS in the NGIs. Proposing alternative ways of utilizing of the identity federations and their assessment will be the main task of the VT in the next months.

#### 4.2.5.5. EGI Compendium

The Virtual Team project "EGI Compendium"<sup>102</sup> has been established 5th December 2001 to meet the need of EGI for a structured collection of information describing NGIs/EIROs and their relationships to the user communities. The goal is to:

1. Increase the visibility of NGI structures.
2. Support better strategic making process.
3. Provide an essential body of information for the various stakeholders.

The Virtual Team has been established and is led by EGI.eu's Strategy and Policy Team and has active representatives from the Irish and Moldovan NGIs. The activity has been structured in terms of the following tasks:

1. Agree and define a set of standardised information.
2. Define the tools necessary to collect/publish the data.
3. Define how to present the data online.
4. Perform the first iteration of information gathering from the NGIs/EIROs.
5. Provide guidelines to the EGI Marketing and Communication team on own to aggregate/present the information.
6. Collect feedback and refine the process.

The team progressed according to plan and during PQ7 performed the following activities:

1. Through a number of VT meetings a number of related works have been analysed (i.e. EGI Design Study knowledge base, e-IRG knowledge base, TERENA Compendium, OSIRIS Study).
2. Define a set of standardised information has been defined and organised into categories.
3. Has selected a tool for the first year data collection.

In PQ8 the VT will:

1. to prepare the online survey for data collection.

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<sup>101</sup> [https://wiki.egi.eu/wiki/VT\\_Federated\\_Identity\\_Providers\\_Assessment](https://wiki.egi.eu/wiki/VT_Federated_Identity_Providers_Assessment)

<sup>102</sup> [https://wiki.egi.eu/wiki/VT\\_EGI\\_Compendium](https://wiki.egi.eu/wiki/VT_EGI_Compendium)



2. to launch a public comment phase and invite few NGIs for a pre-test phase to validate the structure.
3. to launch the data collection; 4) to present preliminary results at the EGI Community Forum.
4. discuss with the EGI Marketing and Communication team a possible structure for annual report based on the collected data.

#### **4.2.5.6. EGI at the 2012 European Geosciences Union (EGU) General Assembly**

The aim of this VT project<sup>103</sup> is to organise a high impact presence for EGI at the 2012 European Geosciences Union (EGU) General Assembly in Vienna at the end of April. This should involve:

- hosting a stand to promote EGI and its partners,
- disseminating material to this community which describes how EGI can support them and how existing researchers are utilising grid technology;
- participating in the session on Grid and Cloud computing and finally;
- identifying in advance of the meeting sub-communities within Geoscience/Earth Sciences (especially those connected with ESFRI projects and/or connected to the NGIs).

The expected outcomes of this project are: a successful stand and presence at the event; increased awareness of the role of EGI and its benefits for this community; the identification of new sub-communities with Earth Sciences that have needs that EGI can potentially satisfy.

The project has made good progress: a stand has been booked (which also supports two guests from EGI.eu at the event); a suitable proposal to present an abstract by EGI.eu was submitted and has recently been accepted. A request has been circulated to the NILs asking that those with an interest in supporting researchers engaged in the Earth Sciences participate. The wiki page will be maintained with details of NILs interested in participating.

#### **4.2.5.7. Digital Cultural Heritage – EGI integration**

The purpose of this VT project<sup>104</sup> is to establish a permanent bridge from EGI to digital cultural heritage resources in a manner that is both easy to use, extensible and furthermore exploits the full benefits of grid technology.

This project builds upon the prototyping work that has already been achieved within the INDICATE project and the international coordination that is being achieved through the DC-NET initiative. The INDICATE project has already delivered two pilot applications which are available through the e-Culture Science Gateway which enables access to resources hosted on EGI sites. There are two strands to this VT project: firstly to migrate the two INDICATE pilot applications to a more secure footing through the support of EGI partners and secondly to host the e-Culture Science Gateway in a more permanent environment after the end of the INDICATE project.

Of the two existing INDICATE pilot applications, the first will benefit from the continued development of the cloud approach currently underway. EC2 is being used now but the intention is to

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<sup>103</sup> [https://wiki.egi.eu/wiki/VT\\_EGU-GA-2012](https://wiki.egi.eu/wiki/VT_EGU-GA-2012)

<sup>104</sup> [https://wiki.egi.eu/wiki/DCH-EGI\\_Integration](https://wiki.egi.eu/wiki/DCH-EGI_Integration)



either extend or migrate this to one or other of the EGI solutions being developed within the EGI Federated Cloud Taskforce. The second pilot involves access control and rights management to provide secure access to two e-collaborative repositories. Again full integration within EGI will benefit the wider e-culture community.

The expected outputs of this project are:

- Establish a gateway to Digital Cultural Heritage resources for users. This will stand as a clear pathway to EGI-supported resources for researchers within the Cultural Heritage sector as well as other researchers requiring access to such data and resources. In addition to the gateway itself, dissemination and support material will be provided to maximise the impact and benefit of these fully integrated resources.
- Simplify and expand the process of adding DCH resources and services to the infrastructure. The INDICATE project already has storage resources on EGI sites but through the implementation of virtual machines greater flexibility will be demonstrated

The proposed duration for this project is 6 months: from mid-January (to coincide with a planned DC-NET/INDICATE joint activities planning meeting) to mid-July (to coincide with the final INDICATE conference to be held in Cairo). Much of the work is already being done so the new effort is mostly in coordinating this work across EGI partners, ensuring that appropriate guidance and support is available for prospective new users and disseminating news about the new facilities. The Gateway already exists but will need to be integrated with EGI resources. The cloud services are already being developed within INDICATE and the EGI prototype could be implemented within the EGI Federated Cloud Task Force.

The project has established connections with the DC-NET and INDICATE groups and joint activities are being planned. Others involved in this work have also now been involved in the planning. As with the other VT projects, the wiki page will be kept up to date with progress.

## 4.2.6. Completed Virtual Teams

### 4.2.6.1. Website Content VT

The aim of the EGI website is to showcase the services EGI offers (our added value) and reach out to new users and provide the information they require to consider our service. The Website Content VT<sup>105</sup> was set up to coordinate the input of website content from the NGIs. The expected outputs of this project were an updated website with a new structure and new content, improved navigation and information that is more accessible to newcomers. Input from the NGIs was requested using a form, which included basic contact details, the mission and goals, organisation and governance, resources and users, events and publications and the logo. Out of 36 NGIs and 23 declared NILs, the team received 13 inputs of NGI related material (36%). By the 1st of February deadline received replies (complete with logos) from: Czech Republic, Germany, Spain, France, Greece, Hungary, Ireland, Israel, Italy, the Netherlands, Portugal, Serbia and Slovakia. In conclusion, the VT mechanism worked well for this specific project and provided a focus for the work reflected through the wiki pages.

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<sup>105</sup> [https://wiki.egi.eu/wiki/VT\\_Website\\_Content](https://wiki.egi.eu/wiki/VT_Website_Content)



#### 4.2.6.2. Inter NGI Usage Report

The NGI Usage Report" VT<sup>106</sup> was aimed at providing a template for a regular (probably annual) report giving an overview of the usage of EGI resources focusing on the cross-NGI usage. The VT started on 10 Nov 2011 and completed its task by providing the template at the end of January 2012.

The VT-team consisted of members from various NGIs (DE, HR, ES, GR, IT, UK) and EGI.eu. Work on the report template started by collecting input from the various members on the VT's wiki page. Once enough material was there, a F2F-meeting of the VT-team took place, which was used to organise the material and come up with the table of contents for the usage report.

This VT should be followed up by a VT assessing the availability of the data needed for the report and making suggestions for adaptations of the tools needed to get the missing data. This VT would ideally have participation from the developers of the respective tools.

### 4.3. Issues and mitigation

#### 4.3.1. Issue 1: Establishing the NGI International Liaisons and the Virtual Team structures

As a result of the changes agreed within the project in response to the 1<sup>st</sup> EC Review a significant restructuring of the project's non-operational activities took place. The NGI International Liaisons needed to be identified in each country and their roles defined. New ways of working through the Virtual Teams had to be established along with the appropriate support and management structures. A workshop at the start of PQ7 helped communicate these changes within the NGIs and a followup workshop will take place in PQ8 to reflect on the initial 6 months of activity.

### 4.4. Plans for the next period

As a reoccurring activity, EGI.eu will focus on contributing to the finalisation of the EGI Strategic Report, production of the Evolving EGI Business Model, dedicated workshops at the next EGICF 2012 and the continued negotiation and advancement of MoUs with external partners. A few events that the SPT are planning to attend comprise the RI-Impact meeting, 20 Feb 2012, Brussels, Belgium and CloudScape IV, 23-24 Feb 2012, Brussels, Belgium that are in addition to the upcoming EGICF 2012.

FOM will work on supporting the many proposed policy and guidelines changes relevant to EGI in order to roll them out not only in Europe, but (mainly) in the rest of the world. Disseminating the updates and ensuring that a globally consistent set of guidelines (both for technical compliance as well as for the extension of operational trust for authorization service providers) is endorsed will be the focus for the next quarter. An IGTF All Hands meeting will also be organised, to be held in May 2012 in conjunction with the EUGridPMA meeting.

STFC will lead a face to face meeting of SPG will take place at Nikhef during which plans and priorities for 2012 will be agreed. Work will continue on the revision of the top-level main Security Policy document and on the security aspects of Data Privacy. Work will also continue on the text of

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<sup>106</sup> [https://wiki.egi.eu/wiki/VT\\_Inter\\_NGI\\_Usage\\_Report](https://wiki.egi.eu/wiki/VT_Inter_NGI_Usage_Report)



the document for "Security for Collaborating Infrastructures". A workshop on Identity Management for Scientific Collaborations will be attended at Taipei during the ISGC2012 conference.

The new website for EGI featuring new images, a new structure and enhanced social media interactivity will be launched at the EGICF 2012. The new social media channels will also be advertised at the event, as part of an outreach package including press releases, visiting journalists and blogs. The winners of the mascot competition will also be announced on 15 February, with the winners invited to attend the EGICF

TNA2U.2 and TNA2U.4 will continue to work together on joint planning of outreach and attendance at events, and in Q8 will focus on ICRI 2012, ISGC2012, the EGI Community Forum, the EGU General Assembly in Vienna and the HealthGrid 2012 event in Amsterdam, which is co-organised by EGI. The Virtual Team set up to work with the NGIs to contribute organisational and people profiles to the EGI website closed at the end of Q7 and the content will be launched with the new website.

NA2U.2 will close their participation in the Programme Committee for the ISGC2012 event in Taiwan in March 2012 and the PC and LOC for the Community Forum in March. Further articles about EGI will be published in *PanEuropeanNetworks: Science & Technology* and *iSGTW*. A dedicated weblink from the newly relaunched PanEuropean Networks website will point to the EGI website for 12 months from January 2012, and web traffic from this source will be monitored. The DVD of the SciTech Europe masterclass will also be issued in Q8 on the cover of PSR: Science & Technology.

The output from the Sustainability meeting will feed into the broader EGI strategy whilst some of the specific points will be incorporated into the Technical Roadmap. Specifically this will affect services for User Communities, services from User Communities and EGI's core services.

In the next project period the EGI.eu TONC activity will focus on the following activities:

- Using the processes established by the "Intelligence Collection" Virtual Team the EGI.eu TONC team will work with the NGIs to identify key contacts within the major ESFRI infrastructure projects, ESFRI cluster project, other key scientific projects and to record these leads as well as information about their projects' needs into the CRM system.
- Finalise the structure of the "portal technology comparison table" in a wiki page and setup an information channel for portal developers and users to propagate the table with information on reusable portal technologies.
- Based on the outcome of the "Federated identity assessment" Virtual Team connect scientific communities and NGI technology specialist together who could link established, key scientific identity federations with EGI services.
- Have a high-impact presence at the EGI Community Forum through the accepted contributions: (1) Evolution of User support platform, (2) The Virtual Team framework for outreach to new communities, (3) Workflow integration & interoperability workshop, (4) Requirements - process and achievements, (5) Assessing the number of EGI users.
- Support the project establish a formal link with an MoU to the SCI-BUS project, in order to provide joint services and solutions about generic and application specific portals and related support.



- Investigate the possibilities of linking EGI services to the Elsevier “Article of the Future”<sup>107</sup> publishing platform in order to
  - Establish links between data files and/or software on the Grid and publications at Elsevier (for reproducibility and reuse)
  - Establish links between log files of a numerical experiment on the Grid and publications at Elsevier (for validation of results).
  - Supporting actual executable components embedded in a research article.
- Continue with the support of routine activities, such as requirements tracking, UCB and TCB meetings, EGI blog.

The AppDB will

- In cooperation with UCST-TONC, the AppDB pool of profiles will be used for organizing promotional and/or informational email campaigns. The aim of these campaigns will be twofold, either to be in close contact with the registered community and keep them informed about new releases and features or to communicate with users who are not very active with AppDB related activities, asking them to check/update their personal profile, update or extend their applications metadata and urge them to add new applications into the database.
- The necessary mechanism(s) will be developed, for direct communication (emailing) of a user with the application entry owner. By this feature, the communication between AppDB members will be simplified and requests, such as joining to the contact list of an application, will be just a matter of one click to a link.
- The AppDB ‘NGI representative’ profile category will be renamed to ‘National Representatives’, which is more meaningful for people outside of EGI-InSPIRE. Among other National representatives, the personal and contact details of the official NILs will be provided into that area.

The Virtual Team model allows topics to be generated from either a top-down or bottom-up approach. Possible virtual teams are reviewed to ensure that the objectives of the group are clearly defined and then circulated to the NGI International Liaisons to assess the interest within the NGI for engaging in the particular topic. If there is critical mass then the VT moves into the active state. The VTs currently under consideration are<sup>108</sup>:

- Establish an EGI VRC for Sound and Music Grid Computing (SMGC)
- Establish an EGI VRC for GAIA-Space Grid Computing
- Fire and Smoke Simulation
- ESFRI Demonstrators
- EGI Community Workshops
- Application Porting How to guide
- Top applications and their user communities
- SPEEch on the griD (SPEED)

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<sup>107</sup> [www.articleofthefuture.com](http://www.articleofthefuture.com)

<sup>108</sup> [https://wiki.egi.eu/wiki/Virtual\\_Team\\_Projects](https://wiki.egi.eu/wiki/Virtual_Team_Projects)



## 5. CONSORTIUM MANAGEMENT

### 5.1. Summary

PQ7 saw the implementation of major changes in the project as a response to the 1<sup>st</sup> EC Review report. User support work (previously part of NA3) was transferred to SA1, and NA2 and NA3 were merged into a new NA2 that focused on Community Engagement through Marketing and Communication, Strategic Planning and Policy Support, Community Outreach, Technical Outreach to New Communities and Community Management and Activity tasks. The NGI International Liaisons, contact points between European and national activities, were established to improve coordination of non-operational activities within EGI. These contact points provided a framework for bringing together experts from within the NGIs as Virtual Teams – short-lived teams designed to allow NGIs interested in a particular issue to work together on a topic for the eventual wider benefit of the community.

These changes were described in a revised Description of Work that was agreed within the consortium.

### 5.2. Main Achievements

#### 5.2.1. Project Management

PQ7 saw the establishment of the Virtual Teams model and the finalisation of the revised DoW relating to the merger of NA2 and NA3, the support for existing users moving to SA1, and other issues coming from the 1<sup>st</sup> EC Review. NA2 now has five functional tasks:

- Marketing and Communications (previously Dissemination)
- Strategic Planning and Policy Support (previously Policy)
- Community Outreach (previously Events)
- Technical Outreach to new Communities
- Community Management and Activity

Full details of each task can be found in the revised DoW. Focusing on the new and significantly different tasks from the previous DoW, the ‘Community Outreach’ task still includes the 6 monthly EGI Forums, but also recognises the importance of having topical structured workshops to help build community consensus and activity across different areas, while the ‘Technical Outreach to new Communities’ task focuses on managing the central services (previously part of NA3.4) and working on technical issues needed to support new and emerging research communities on the production infrastructure.

Community Engagement within the NGIs has been strengthened through the establishment of the NGI International Liaison role in each NGI and the engagement of staff within the NGI (either within or outside the project) through Virtual Teams (VTs). VTs are being used to provide a flexible mechanism to bring distributed staff in the NGIs together to meet community challenges. This allows NGIs to engage in topics that are of interest to them and for these active NGIs to develop and refine a topic that can then benefit the whole community.



This new mode of working started in PQ7 and the first workshop<sup>109</sup> for NGI International Liaisons took place in early November 2011 where the role was defined and the working processes around the Virtual Teams (VTs) discussed. PQ7 saw the nomination of the NGI International Liaison contacts in each NGI and the first VTs being established, and in a few cases completing, their work.

### 5.2.2. Milestones and Deliverables

Id	Deliverable / Milestone title	Nature (***)	Original Delivery date(*) <small>110</small>	Revised delivery date(*)	Status (**)
MS113	Quarterly Report <a href="https://documents.egi.eu/document/881">https://documents.egi.eu/document/881</a>	R	19	21	PMB approved
D4.4	Security Risk Assessment of the EGI infrastructure <a href="https://documents.egi.eu/document/863">https://documents.egi.eu/document/863</a>	O	19	22	PMB approved
MS613	Training and dissemination event for all shared services and the other tasks within the activity <a href="https://documents.egi.eu/document/685">https://documents.egi.eu/document/685</a>	O	20	22	PMB approved

### 5.2.3. Consumption of Effort

The effort consumed by the project during PQ7 is described in the following tables:

Type	Work Package	Worked PM Funded	Committ ed PM	Achieved PM %	Achieved PM PQ6%	Achieved PM PQ5 %	Achieved PM (YEAR1) %
MGT	WP1	20,4	20,6	99%	98%	98%	77%
COORD	WP2	82,5	117,4	70%	36%	93%	80%
COORD	WP3	0	0	n/a	38%	105%	86%
SUPPORT	WP4	292,9	292,4	100%	103%	107%	98%
SUPPORT	WP5	27,8	31,4	89%	92%	101%	81%
SUPPORT	WP6	54,7	61,0	90%	104%	98%	102%
RTD	WP7	22,4	23,8	94%	88%	81%	76%
	<b>Total</b>	502,2	546,6	92%	76%	103%	93%

<sup>109</sup> <https://www.egi.eu/indico/conferenceDisplay.py?ovw=True&confId=659>

<sup>110</sup> (\*) 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



The detailed breakdown of effort contributed to each work package by each partner is provided in the following tables for PQ6. 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.

### WP1-E - WP1 (NA1) - NA1 Management (EGI)

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
1-EGLEU	27.8	26.6	104%	8.3	93%	9.9	111%	9.6	109%
<b>Total:</b>	<b>27.8</b>	<b>26.6</b>	<b>104%</b>	<b>8.3</b>	<b>93%</b>	<b>9.9</b>	<b>111%</b>	<b>9.6</b>	<b>109%</b>

### WP1-M - WP1 (NA1) - NA1 Management

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
1-EGLEU	32.2	33.6	96%	11.3	101%	10.1	91%	10.7	96%
<b>Total:</b>	<b>32.2</b>	<b>33.6</b>	<b>96%</b>	<b>11.3</b>	<b>101%</b>	<b>10.1</b>	<b>91%</b>	<b>10.7</b>	<b>96%</b>

### WP2-E - WP2 (NA2) - NA2 External Relations (EGI)

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
1-EGLEU	75.7	71.5	106%	21.6	122%	21.9	124%	32.2	89%
12A-CSIC	0	0.6	0%	0	#DIV/0	0	#DIV/0	0	0%
16A-GRNET	1.6	2.2	71%	0	#DIV/0	0	#DIV/0	1.6	71%
16E-IASA	0	0.7	0%	0	#DIV/0	0	#DIV/0	0	0%
26A-FOM	0.9	2.5	35%	0.4	27%	0.5	34%	0	0%
29-LIP	3.3	0.8	413%	0	#DIV/0	0	#DIV/0	3.3	413%
34A-STFC	5.5	5.2	106%	1.2	113%	1.3	123%	3.0	97%
<b>Total:</b>	<b>86.9</b>	<b>83.5</b>	<b>104%</b>	<b>23.1</b>	<b>115%</b>	<b>23.7</b>	<b>117%</b>	<b>40.0</b>	<b>93%</b>

## WP2-N - WP2 (NA2) - NA2 External Relations

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
2-UPT	0	8,3	0%	0	0%	0	0%	0	0%
3-IIAP NAS RA	0	0,6	0%	0	#DIV/0	0	#DIV/0	0	0%
5A-IICT-BAS	0,2	1,7	13%	0,1	86%	0,0	24%	0,1	6%
7A-ETH ZURICH	0	0,4	0%	0	#DIV/0	0	#DIV/0	0	0%
7B-UZH	0,5	0,7	73%	0	#DIV/0	0	#DIV/0	0,5	73%
7C-SWITCH	0,1	0,7	17%	0,0	58%	0	0%	0,1	14%
8-UCY	2,0	2,4	82%	0,5	75%	0,6	86%	0,9	84%
9-CESNET	3,4	4,5	76%	0,6	62%	0,6	59%	2,1	89%
10B-KIT-G	6,9	7,4	93%	1,1	121%	0,9	100%	4,9	87%
10E-BADW	0	1,0	0%	0	0%	0	0%	0	#DIV/0
12A-CSIC	8,3	4,8	173%	1,7	100%	1,4	83%	5,2	374%
12D-UPVLC	0,9	3,4	26%	0	0%	0	0%	0,9	32%
13-CSC	0,6	3,9	15%	0,3	66%	0,1	20%	0,2	6%
14A-CNRS	7,8	5,1	153%	1,5	142%	1,2	113%	5,0	173%
14B-CEA	0	1,1	0%	0	#DIV/0	0	#DIV/0	0	0%
14C-HealthGrid	1,6	1,7	93%	0,8	93%	0,4	44%	0,4	#DIV/0
15-GRENA	0,2	0,4	39%	0	#DIV/0	0	#DIV/0	0,2	39%
18A-MTA KFKI	0,2	0,5	38%	0	#DIV/0	0	#DIV/0	0,2	38%
18B-BME	0,7	1,1	60%	0,2	67%	0,3	95%	0,2	35%
18C-MTA SZTAKI	0,6	1,2	47%	0	0%	0	0%	0,6	103%
19-TCO	2,0	2,0	101%	0,4	125%	0,4	125%	1,2	91%
20-IUCC	0,6	1,1	55%	0,2	147%	0,2	133%	0,2	22%
21A-INFN	5,4	6,3	86%	1,4	143%	0,9	90%	3,1	72%
22-VU	2,9	7,0	41%	0,7	32%	1,5	72%	0,7	24%
23-RENAM	0,1	0,2	86%	0	#DIV/0	0	#DIV/0	0,1	86%
26A-FOM	0,7	0,9	84%	0,5	302%	0,2	131%	0	0%
26B-SARA	0	0,6	0%	0	0%	0	0%	0	0%
27A-SIGMA	0	2,0	0%	0	0%	0	0%	0	0%
27B-UIO	0	0,7	0%	0	#DIV/0	0	#DIV/0	0	0%

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
27B-UIO	0	0,7	0%	0	#DIV/0	0	#DIV/0	0	0%
27C-URA	0	1,5	0%	0	#DIV/0	0	#DIV/0	0	0%
28A-CYFRONET	2,7	3,4	79%	0,5	50%	0,9	87%	1,3	94%
28B-UWAR	0	1,4	0%	0	#DIV/0	0	#DIV/0	0	0%
28C-ICBP	0	1,0	0%	0	#DIV/0	0	#DIV/0	0	0%
29-LIP	1,6	4,6	35%	1,0	97%	0,5	48%	0,2	6%
30-IPB	3,4	3,2	105%	0,8	111%	0,8	111%	1,8	100%
31-ARNES	0,7	3,9	17%	0,4	49%	0,3	34%	0	0%
31B-JSI	2,3	2,3	103%	1,0	187%	1,3	234%	0	0%
32-UISAV	3,0	4,0	75%	0,2	66%	0,4	132%	2,5	71%
33-TUBITAK ULAKBIM	5,1	5,2	100%	1,0	114%	1,0	114%	3,1	92%
34A-STFC	5,3	5,4	99%	1,1	91%	1,1	92%	3,1	105%
34C-UG	0	0,3	0%	0	#DIV/0	0	#DIV/0	0	0%
34D-IMPERIAL	0	0,4	0%	0	#DIV/0	0	#DIV/0	0	0%
34E-MANCHESTER	0	0,4	0%	0	#DIV/0	0	#DIV/0	0	0%
36-UCPH	2,8	3,2	89%	0,1	146%	0,8	969%	1,9	64%
38-VR-SNIC	0,6	0,2	234%	0,0	89%	0,3	889%	0,3	140%
38A-KTH	2,5	2,4	102%	0,2	46%	1,4	267%	0,8	61%
39-IMCS-UL	0,3	2,5	12%	0,1	59%	0,1	40%	0,1	4%
40A-E-ARENA	2,8	3,4	85%	1,0	100%	1,1	106%	0,7	55%
<b>Total:</b>	<b>78,7</b>	<b>120,2</b>	<b>65%</b>	<b>17,7</b>	<b>77%</b>	<b>18,6</b>	<b>81%</b>	<b>42,5</b>	<b>57%</b>

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

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
1-EGLEU	7.1	6.8	106%	2.8	123%	2.4	107%	1.9	86%
10B-KIT-G	13.6	13.1	104%	4.5	103%	4.9	112%	4.3	97%
12A-CSIC	3,5	3,2	109%	0,8	79%	1,1	102%	1,6	147%
12B-FCTSG	2,8	2,3	123%	0,7	100%	0,5	69%	1,5	201%
13-CSC	1,5	4,3	34%	1,3	88%	0,1	5%	0,1	9%
14A-CNRS	2,3	2,3	102%	0,5	70%	1,0	131%	0,8	104%
16A-GRNET	4,2	13,1	32%	1,8	41%	1,8	41%	0,6	14%
17-SRCE	4,0	4,3	93%	0,6	40%	0,7	50%	2,7	189%
21A-INFN	7,6	6,8	112%	2,7	119%	3,0	131%	1,9	86%
21B-GARR	0,8	2,3	34%	0,4	53%	0,1	13%	0,3	37%
26A-FOM	3,1	1,3	239%	1,2	276%	1,9	442%	0	0%
26B-SARA	6,0	4,3	138%	0,9	64%	2,9	201%	2,1	149%
28A-CYFRONET	4,1	4,3	95%	1,3	92%	1,3	90%	1,5	103%
29-LIP	4,2	3,2	132%	1,3	122%	1,1	102%	1,8	173%
34A-STFC	15,5	12,6	123%	5,6	135%	5,0	120%	4,8	114%
35-CERN	13,8	11,1	125%	4,8	131%	4,7	128%	4,2	115%
38A-KTH	3,5	2,1	171%	1,9	280%	1,6	231%	0,0	2%
<b>Total:</b>	<b>97,5</b>	<b>97,1</b>	<b>100%</b>	<b>33,2</b>	<b>103%</b>	<b>34,1</b>	<b>105%</b>	<b>30,2</b>	<b>93%</b>



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

Partner	Worked PM Funded	Committed PM	Achieved PM %	Q5		Q6		Q7	
				Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
1-EGLEU	7,1	6,8	106%	2,8	123%	2,4	107%	1,9	86%
10B-KIT-G	13,6	13,1	104%	4,5	103%	4,9	112%	4,3	97%
12A-CSIC	3,5	3,2	109%	0,8	79%	1,1	102%	1,6	147%
12B-FCTS	2,8	2,3	123%	0,7	100%	0,5	69%	1,5	201%
13-CSC	1,5	4,3	34%	1,3	88%	0,1	5%	0,1	9%
14A-CNRS	2,3	2,3	102%	0,5	70%	1,0	131%	0,8	104%
16A-GRNET	4,2	13,1	32%	1,8	41%	1,8	41%	0,6	14%
17-SRCE	4,0	4,3	93%	0,6	40%	0,7	50%	2,7	189%
21A-INFN	7,6	6,8	112%	2,7	119%	3,0	131%	1,9	86%
21B-GARR	0,8	2,3	34%	0,4	53%	0,1	13%	0,3	37%
26A-FOM	3,1	1,3	239%	1,2	276%	1,9	442%	0	0%
26B-SARA	6,0	4,3	138%	0,9	64%	2,9	201%	2,1	149%
28A-CYFRONET	4,1	4,3	95%	1,3	92%	1,3	90%	1,5	103%
29-LIP	4,2	3,2	132%	1,3	122%	1,1	102%	1,8	173%
34A-STFC	15,5	12,6	123%	5,6	135%	5,0	120%	4,8	114%
35-CERN	13,8	11,1	125%	4,8	131%	4,7	128%	4,2	115%
38A-KTH	3,5	2,1	171%	1,9	280%	1,6	231%	0,0	2%
<b>Total:</b>	<b>97,5</b>	<b>97,1</b>	<b>100%</b>	<b>33,2</b>	<b>103%</b>	<b>34,1</b>	<b>105%</b>	<b>30,2</b>	<b>93%</b>

## WP4-N - WP4 (SA1) - SA1 Operations

Partner	Worked PM Funded	Committed PM	Achieved PM %
2-UPT	0	6,1	0%
3-IIAP NAS RA	1,7	3,6	49%
5A-IICT-BAS	3,0	20,3	15%
5B-IOCCP-BAS	1,1	1,5	74%
5C-NIGGG-BAS	6,9	1,5	457%
6-UIIP NASB	3,2	5,7	56%
7A-ETH ZURICH	5,4	6,4	84%
7B-UZH	3,5	3,4	103%
7C-SWITCH	6,3	6,4	98%
8-UCY	4,8	9,0	53%
9-CESNET	20,6	24,1	86%
10B-KIT-G	24,2	16,0	151%
10C-DESY	6,9	4,6	149%
10D-JUELICH	4,8	4,3	111%
10E-BADW	5,8	7,0	82%
10G-FRAUNHOFER	3,8	4,2	90%
10H-LUH	6,7	4,2	160%
11-UOBL ETF	10,5	14,1	74%
12A-CSIC	5,3	8,3	64%
12B-FCTSG	13,1	13,6	96%
12C-CIEMAT	8,6	7,1	121%
12D-UPVLC	5,3	5,3	101%
12E-IFAE	9,8	8,6	114%
12F-RED.ES	19,6	9,8	201%
12G-UNIZAR-I3A	8,5	9,8	87%
12H-UAB	7,9	7,5	105%
13-CSC	14,6	12,6	115%
14A-CNRS	60,7	47,3	128%
14B-CEA	14,8	12,0	123%
15-GRENA	4,5	3,6	127%

Q5		Q6		Q7	
Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
0	0%	0	0%	0	0
0,5	43%	0,8	63%	0,5	40
0,8	11%	1,0	15%	1,2	18
0,3	51%	0,2	44%	0,6	126
1,4	275%	3,7	743%	1,8	353
0,6	33%	1,5	80%	1,0	54
2,3	106%	1,6	77%	1,5	69
2,0	178%	1,1	101%	0,4	32
2,1	99%	2,6	122%	1,6	73
1,9	65%	1,5	49%	1,4	46
6,7	83%	6,6	83%	7,3	91
8,5	160%	7,0	130%	8,7	162
2,0	130%	2,1	135%	2,8	183
1,6	113%	1,6	110%	1,6	110
2,8	121%	2,3	98%	0,6	27
1,3	92%	1,2	88%	1,3	89
2,2	159%	2,4	170%	2,1	151
3,5	74%	3,5	74%	3,5	74
1,9	68%	1,8	66%	1,6	58
4,6	101%	3,8	84%	4,7	104
2,4	102%	3,2	134%	3,0	126
2,2	123%	1,6	89%	1,6	91
3,3	114%	3,3	114%	3,3	114
7,8	240%	5,8	180%	5,9	183
3,0	93%	3,0	92%	2,5	77
2,6	105%	2,6	105%	2,6	105
5,1	121%	3,9	93%	5,5	131
21,2	134%	21,1	134%	18,4	117
5,7	144%	4,2	105%	4,8	121
1,2	104%	1,4	114%	1,9	162
Q5		Q6		Q7	



Partner	Worked PM Funded	Committed PM	Achieved PM %
16A-GRNET	21,2	23,1	92%
16B-AUTH	4,5	2,4	184%
16C-CTI	5,9	2,4	242%
16D-FORTH	9,9	2,4	407%
16G-UI	0,7	1,5	44%
16H-UP	3,6	1,9	190%
17-SRCE	14,2	13,5	105%
18A-MTA KFKI	12,6	12,3	103%
18B-BME	5,4	5,5	97%
18C-MTA SZTAKI	5,7	4,6	125%
19-TCD	13,6	17,7	77%
20-IUCC	4,8	4,7	102%
21A-INFN	90,2	68,7	131%
21B-GARR	0,9	2,3	39%
22-VU	4,5	4,1	108%
23-RENAM	5,5	3,8	143%
24-UOM	9,7	13,3	73%
25-UKIM	18,2	13,3	137%
26A-FOM	5,8	6,0	96%
26B-SARA	15,8	23,9	66%
27A-SIGMA	3,2	7,6	42%
27B-UIO	4,9	5,3	93%
27C-URA	2,7	2,6	102%
28A-CYFRONET	26,8	21,7	123%
28B-UWAR	0	1,3	0%
28C-ICBP	11,1	3,4	330%
28D-POLITECHNIKA WROCLAWSKA	4,7	3,0	156%
29-LIP	21,8	20,1	108%
30-IPB	22,0	22,2	99%
31-ARNES	9,9	8,1	123%
31B-JSI	11,2	9,6	117%

Partner	Worked PM	Committed PM	Achieved PM %
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Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
9,0	117%	8,4	109%	3,8	49%
1,3	166%	1,5	179%	1,7	207%
2,9	363%	1,1	136%	1,9	228%
2,8	345%	3,1	385%	4,0	491%
0,3	69%	0,3	62%	0	0%
1,2	185%	1,1	183%	1,3	201%
4,6	103%	4,8	106%	4,8	106%
4,2	102%	4,2	104%	4,2	103%
1,3	69%	2,5	137%	1,6	87%
4,1	265%	1,1	75%	0,5	34%
4,5	77%	4,5	77%	4,5	77%
1,5	97%	1,4	91%	1,8	118%
30,8	135%	26,0	114%	33,3	146%
0,4	53%	0,4	48%	0,1	16%
1,9	139%	1,9	138%	0,6	47%
2,7	208%	1,7	129%	1,2	90%
3,2	72%	3,2	71%	3,3	75%
6,1	137%	6,1	137%	6,1	137%
3,1	155%	2,7	135%	0	0%
5,9	74%	5,7	72%	4,2	52%
1,2	49%	1,9	77%	0	0%
2,6	147%	2,0	112%	0,4	21%
1,3	146%	1,2	134%	0,2	26%
9,2	127%	8,7	120%	8,9	123%
0	0%	0	0%	0	0%
1,6	139%	4,0	355%	5,6	495%
1,6	165%	1,6	163%	1,4	142%
8,2	123%	5,6	84%	7,9	118%
7,3	99%	7,3	99%	7,3	99%
3,9	146%	3,2	119%	2,7	102%
4,0	127%	5,0	156%	2,2	67%

Q5		Q6		Q7	
Worked PM	Achieved PM %	Worked PM	Achieved PM %	Worked PM	Achieved PM %



	Funded		
32-UI SAV	14,4	18,1	80%
33-TUBITAK ULAKBIM	22,4	24,5	92%
34A-STFC	17,3	19,4	89%
34C-UG	11,6	10,9	107%
34D-IMPERIAL	15,3	10,9	140%
34E- MANCHESTER	5,8	10,9	53%
36-UCPH	5,6	15,2	37%
38A-KTH	0,9	1,1	79%
38B-LIU	4,7	5,6	84%
38C-UMEA	9,7	9,1	106%
39-IMCS-UL	4,8	9,8	49%
40A-E-ARENA	0,1	0	#DIV/0
40B-SINP MSU	7,3	3,8	195%
40C-JINR	2,9	2,4	118%
40D-RRCKI	2,9	2,4	118%
40F-ITEP	2,7	2,3	118%
40G-PNPI	0	2,4	0%
51A-ICI	16,9	4,2	401%
51C-UPB	0	2,4	0%
51D-UVDT	2,5	1,7	150%
51E-UTC	5,3	1,7	315%
51H-INCAS	0	0,6	0%
51J-UB	3,4	0,4	905%
<b>Total:</b>	<b>818,9</b>	<b>780,0</b>	<b>105%</b>

Funded		Funded		Funded	
4,5	75%	4,5	75%	5,4	89%
7,2	88%	7,2	88%	8,1	99%
5,9	91%	5,5	86%	5,9	92%
4,1	113%	3,6	99%	3,9	107%
5,1	141%	5,0	139%	5,1	142%
2,7	76%	1,6	44%	1,5	40%
1,4	27%	1,9	37%	2,3	45%
0,3	79%	0,6	158%	0	0%
1,8	96%	1,9	101%	1,1	56%
3,1	102%	3,3	108%	3,3	109%
1,6	49%	1,5	46%	1,7	52%
0	#DIV/0	0	#DIV/0	0,1	#DIV/0
2,4	195%	2,6	207%	2,3	181%
1,0	118%	1,0	126%	0,9	110%
1,0	118%	1,0	126%	0,9	110%
0,9	118%	0,9	126%	0,8	110%
0	0%	0	0%	0	0%
4,9	352%	6,1	433%	5,9	417%
0	0%	0	0%	0	0%
0,6	105%	0,1	18%	1,8	327%
0,7	123%	3,4	610%	1,2	211%
0	0%	0	0%	0	0%
0	0%	2,0	1.582%	1,4	1.134%
<b>283,7</b>	<b>109%</b>	<b>272,6</b>	<b>105%</b>	<b>262,6</b>	<b>101%</b>



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

Partner	Worked PM Funded	Committed PM	Achieved PM %
1-EGIEU	6,6	6,8	98%
9-CESNET	19,0	24,6	77%
10D-JUELICH	4,7	4,5	104%
12A-CSIC	9,0	9,9	91%
12B-FCTSG	7,1	3,2	224%
16A-GRNET	8,1	10,5	77%
16B-AUTH	5,0	2,4	205%
16E-IASA	0	2,4	0%
16F-ICCS	2,1	2,4	88%
21A-INFN	9,7	8,8	110%
29-LIP	13,5	13,1	103%
38B-LIU	3,4	4,5	76%
41-NORDUNET	0	1,1	0%
<b>Total:</b>	<b>88,3</b>	<b>94,3</b>	<b>94%</b>

Q5		Q6		Q7	
Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
2,6	114%	2,0	90%	2,1	91%
6,3	76%	6,3	77%	6,4	78%
1,8	120%	1,5	101%	1,4	93%
3,3	99%	2,9	87%	2,9	87%
2,7	258%	2,6	245%	1,8	169%
3,2	92%	2,3	67%	2,5	72%
1,8	226%	1,8	220%	1,4	168%
0	0%	0	0%	0	0%
0,5	56%	1,2	150%	0,5	56%
3,2	108%	3,2	110%	3,3	111%
5,5	125%	3,5	79%	4,6	105%
0,8	56%	1,5	98%	1,1	74%
0	0%	0	0%	0	0%
<b>31,6</b>	<b>101%</b>	<b>28,8</b>	<b>92%</b>	<b>27,8</b>	<b>89%</b>

## WP6-G - WP6 (SA3) - SA3 Sces for Heavy User Comm.

Partner	Worked PM Funded	Committed PM	Achieved PM %
10G-FRAUNHOFER	9,8	6,8	145%
12A-CSIC	5,7	6,8	85%
12C-CIEMAT	6,9	4,5	154%
13-CSC	7,0	4,5	155%
14A-CNRS	25,3	11,5	220%
14B-CEA	0	2,0	0%
14C-HealthGrid	2,2	7,3	31%
19-TCD	5,2	5,3	100%
21A-INFN	0	15,0	0%
21C-INAF	3,5	7,5	47%
21D-UNIPG	2,3	2,3	104%
21E-SPACI	3,4	6,8	50%
28C-ICBP	5,6	1,5	375%
31B-JSI	0,5	0,8	68%
32-UI SAV	3,2	4,5	70%
35-CERN	97,4	85,3	114%
37-EMBL	0	11,0	0%
<b>Total:</b>	<b>178,1</b>	<b>183,0</b>	<b>97%</b>

Q5		Q6		Q7	
Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
2,5	110%	3,1	139%	4,2	185%
1,7	78%	2,5	112%	1,5	66%
2,3	154%	2,3	154%	2,3	154%
3,5	235%	2,2	150%	1,2	79%
10,3	270%	9,8	254%	5,2	136%
0	0%	0	0%	0	0%
0,7	29%	0,2	6%	1,4	58%
1,7	100%	1,7	100%	1,7	100%
0	0%	0	0%	0	0%
2,1	83%	1,1	45%	0,3	12%
0,7	97%	0,5	66%	1,1	148%
1,1	49%	1,2	53%	1,1	49%
0,7	131%	2,6	515%	2,4	481%
0,2	70%	0,3	117%	0,0	18%
1,1	73%	0,9	62%	1,1	76%
31,4	111%	34,9	123%	31,1	110%
0	0%	0	0%	0	0%
<b>60,1</b>	<b>98%</b>	<b>63,3</b>	<b>104%</b>	<b>54,7</b>	<b>90%</b>

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

Partner	Worked PM Funded	Committed PM	Achieved PM %
10B-KIT-G	10,9	8,8	124%
12B-FCTSG	3,5	2,3	157%
14A-CNRS	2,3	2,3	100%
16A-GRNET	0,9	2,3	42%
17-SRCE	2,6	2,3	117%
21A-INFN	5,2	4,5	116%
34A-STFC	4,7	4,5	104%
35-CERN	4,2	2,3	186%
<b>Total:</b>	<b>34,3</b>	<b>29,1</b>	<b>118%</b>

Q5		Q6		Q7	
Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
3,0	103%	3,2	108%	4,7	161%
1,3	180%	1,2	162%	1,0	128%
0,7	98%	0,8	102%	0,8	100%
0,4	53%	0,4	53%	0,1	18%
0,9	119%	0,9	116%	0,9	116%
1,7	112%	1,6	106%	1,9	130%
1,6	107%	1,5	101%	1,5	102%
1,1	150%	1,7	224%	1,4	183%
<b>10,8</b>	<b>112%</b>	<b>11,2</b>	<b>116%</b>	<b>12,3</b>	<b>127%</b>

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

Partner	Worked PM Funded	Committed PM	Achieved PM %
10H-LUH	5,7	4,5	127%
12B-FCTSG	1,2	5,6	21%
14A-CNRS	14,2	14,4	99%
17-SRCE	0	1,1	0%
21A-INFN	0,9	6,5	14%
34A-STFC	6,0	7,9	77%
35-CERN	0	2,3	0%
<b>Total:</b>	<b>28,0</b>	<b>42,3</b>	<b>66%</b>

Q5		Q6		Q7	
Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %	Worked PM Funded	Achieved PM %
1,5	101%	2,6	175%	1,6	105%
0	0%	0,5	25%	0,7	36%
4,6	97%	4,1	85%	5,5	115%
0	0%	0	0%	0	0%
0	0%	0,5	22%	0,4	20%
2,2	82%	2,0	76%	1,9	71%
0	0%	0	0%	0	0%
<b>8,3</b>	<b>59%</b>	<b>9,6</b>	<b>68%</b>	<b>10,1</b>	<b>72%</b>

#### 5.2.4. Overall Financial Status

Partner	Q7				
	Worked PM Funded	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
1-EGI.EU	56,6	60,7	93%	502.213	298.713
2-UPT	0	6,3	0%	0	0
3-IIAP NAS RA	0,5	1,8	27%	1.422	469
5A-IICT-BAS	1,3	8,2	16%	7.869	2.597
5B-IOCCP-BAS	0,6	0,5	126%	3.859	1.274
5C-NIGGG-BAS	1,8	0,5	353%	10.772	3.555
6-UIIP NASB	1,0	1,9	54%	3.950	1.303
7A-ETH ZURICH	1,5	2,5	59%	12.659	4.177
7B-UZH	0,8	1,8	47%	5.906	1.949
7C-SWITCH	1,7	2,7	61%	23.115	7.628
8-UCY	2,3	4,0	56%	19.472	6.426
9-CESNET	15,8	18,6	85%	104.227	41.554
10B-KIT-G	22,5	18,3	123%	200.526	79.761
10C-DESY	2,8	1,5	183%	25.066	8.272
10D-JUELICH	3,0	2,9	101%	26.548	10.862
10E-BADW	0,6	2,3	27%	5.519	1.821
10G-FRAUNHOFER	5,4	3,7	148%	48.150	18.479
10H-LUH	3,7	2,9	127%	32.644	11.752
11-UOBL ETF	3,5	4,7	74%	14.268	4.709
12A-CSIC	12,7	11,4	111%	99.458	39.533
12B-FCTSG	9,6	9,0	108%	75.412	30.919
12C-CIEMAT	5,3	3,9	136%	41.347	14.906
12D-UPVLC	2,5	4,5	56%	19.391	6.399
12E-IFAE	3,3	2,9	114%	25.521	8.422
12F-RED.ES	5,9	3,3	183%	46.442	15.326
12G-UNIZAR-I3A	2,5	3,3	77%	19.516	6.440
12H-UAB	2,6	2,5	105%	20.596	6.797

Partner	Q7				
	Worked PM Funded	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
13-CSC	7,0	10,1	69%	72.612	25.056
14A-CNRS	35,7	28,8	124%	308.513	110.544
14B-CEA	4,8	5,8	84%	41.648	13.744
14C-HealthGrid	1,8	2,4	75%	15.701	6.025
15-GRENA	2,1	1,6	131%	5.140	1.696
16A-GRNET	8,6	18,6	46%	66.544	28.330
16B-AUTH	3,1	1,6	188%	23.616	9.594
16C-CTI	1,9	0,8	228%	14.330	4.729
16D-FORTH	4,0	0,8	491%	30.901	10.197
16E-IASA	0	1,5	0%	0	0
16F-ICCS	0,5	0,8	56%	3.538	1.769
16G-UI	0	0,5	0%	0	0
16H-UP	1,3	0,6	201%	9.730	3.211
17-SRCE	8,4	7,1	119%	41.554	16.738
18A-MTA KFKI	4,4	4,6	95%	17.351	5.726
18B-BME	1,8	2,3	76%	9.778	3.227
18C-MTA SZTAKI	1,1	2,1	52%	6.679	2.204
19-TCD	7,5	9,0	83%	72.840	25.227
20-IUCC	2,0	2,3	86%	25.857	8.533
21A-INFN	45,6	41,1	111%	335.907	120.015
21B-GARR	0,4	1,5	26%	2.925	1.313
21C-INAF	0,3	2,5	12%	2.282	913
21D-UNIPG	1,1	0,8	148%	8.190	3.276
21E-SPACI	1,1	2,3	49%	8.132	3.253
22-VU	1,3	4,2	32%	11.093	3.661
23-RENAM	1,3	1,4	90%	3.857	1.273
24-UOM	3,3	4,4	75%	7.931	2.617
25-UKIM	6,1	4,4	137%	24.257	8.005
26A-FOM	0	2,6	0%	0	0
26B-SARA	6,3	9,9	64%	64.703	25.090
27A-SIGMA	0	3,5	0%	0	0

Partner	Q7				
	Worked PM Funded	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
27B-UIO	0,4	2,5	15%	3.571	1.178
27C-URA	0,2	2,4	10%	2.289	755
28A-CYFRONET	11,7	10,1	116%	99.895	35.117
28B-UWAR	0	1,8	0%	0	0
28C-ICBP	8,0	2,6	306%	68.277	23.971
28D-POLITECHNIKA WROCLAWSKA	1,4	1,0	142%	12.049	3.976
29-LIP	17,8	15,5	115%	97.419	41.189
30-IPB	9,1	9,2	99%	49.900	16.467
31-ARNES	2,7	5,0	55%	16.441	5.425
31B-JSI	2,2	4,6	48%	13.161	4.362
32-UI SAV	9,0	11,0	81%	71.723	24.306
33-TUBITAK ULAKBIM	11,2	11,5	97%	78.747	25.987
34A-STFC	20,3	20,8	97%	207.974	86.268
34C-UG	0	0	#DIV/0		
34D-IMPERIAL	3,9	4,0	99%	40.013	13.204
34E-MANCHESTER	5,1	4,0	127%	52.685	17.386
35-CERN	1,5	4,0	36%	14.938	4.930
36-UCPH	36,7	34,1	108%	528.897	219.634
37-EMBL	4,2	8,1	52%	46.515	15.350
38-VR-SNIC	0	3,7	0%	0	0
38A-KTH	0,3	0,2	140%	2.881	951
38B-LIU	0,9	2,5	35%	9.830	3.273
38C-UMEA	2,2	3,4	64%	24.744	10.327
39-IMCS-UL	3,3	3,0	109%	37.794	12.472
40A-E-ARENA	1,8	5,3	33%	14.000	4.620
40B-SINP MSU	0,9	1,3	67%	3.415	1.127
40C-JINR	2,3	1,3	181%	8.984	2.965
40D-RRCKI	0,9	0,8	110%	3.540	1.168
40F-ITEP	0,9	0,8	110%	3.539	1.168
40G-PNPI	0,8	0,8	110%	3.267	1.078





Partner	Q7				
	Worked PM Funded	Committed PM	Achieved PM	Eligible Cost Estimate	Estimated Funding
41-NORDUNET	0	0,4	0%	0	0
51A-ICI	5,9	1,4	417%	35.598	11.747
51C-UPB	0	0,8	0%	0	0
51D-UVDT	1,8	0,6	327%	11.185	3.691
51E-UTC	1,2	0,6	211%	7.216	2.381
51H-INCAS	0	0,2	0%	0	0
51J-UB	1,4	0,1	1.134%	8.619	2.844
<b>Total:</b>	502,2	546,6	92%	4.210.585	1.679.326

### 5.3. Issues and mitigation

#### 5.3.1. Issue 1: Establishing the new NA2

The new NA2 activity has established itself with a kick-off meeting at the beginning of PQ7 reaching 70% of the planned consumption (monthly figures during PQ7 of 77%, 59% & 76%). Adoption will continue to be monitored and a workshop is planned in PQ8 at the EGICF2012 to review progress.

#### 5.4. Plans for the next period

The revised description of work will be presented to the EC for their approval and a focus will shift to the end of period to the reporting cycle.

## 6. PROJECT METRICS

### 6.1. Overall metrics

Project Objectives	Objective Summary	Metrics	Value Q7	Target Y2
<b>PO1</b>	Expansion of a nationally based production infrastructure	Number of production resources in EGI (M.SA1.Size.1)	347	330
		Number of job slots available in EGI (M.SA1.Size.2)	399,300	350000
		Reliability of core middleware services (M.SA1.Operation.5)	94.80%	91%
<b>PO2</b>	Support of European researchers and international collaborators through VRCs	MoUs with VRCs (M.NA2.11)	1	10
		Number of papers from EGI Users (M.NA2.5)	27	60
		Number of jobs done a day (M.SA1.Usage.1)	1,264,922	525 000
<b>PO3</b>	Sustainable support for Heavy User Communities	Number of sites with MPI (M.SA1.Integration.2)	108	100
		Number of users from HUC VOs (M.SA1.Size.7)	10856 HEP(8130) LS(1093) CC(609) AA(615) ES(314) Fusion (95)	5500
<b>PO4</b>	Addition of new User Communities	Amount of desktop resource (M.SA1.Integration.3)	0	5
		Number of users from non-HUC VOs (M.NA3.9)	8518 Computer Sci. and Math. : 40 Multidisciplinary : 3323 Other : 4055	1000
		Public events organised (M.NA2.6)	11	2000

Project Objectives	Objective Summary	Metrics	Value Q7	Target Y2
PO5	Transparent integration of other infrastructures	MoUs with resource providers (M.NA2.10)	1	5
PO6	Integration of new technologies and resources	MoUs with Technology providers (M.NA2.9)	0	4
		Number of HPC resources (M.SA1.Integration.1)	39	3
		Amount of virtualised resources (M.SA1.Integration.4)	7 HEP-SPEC 6: 21375	1

## 6.2. Activity metrics

### 6.2.1. NA1 - Project Management

Metric ID	Metric	Task	Value for Q7
M.NA1.1	Number of NGIs actively contributing resources into the production infrastructure	TNA1.2	N/A
MNA1.2	Time to review deliverables & milestones (from entering External Review to exiting PMB Review)	TNA1.4	40 DAYS

### 6.2.2. NA2 - External Relations

Metric ID	Metric	Task	Value for Q7
M.NA2.1	Number of press releases issued	TNA2.2	0
M.NA2.2	Number of media contacts sent press releases	TNA2.2	0
M.NA2.3	Number of press cuttings relating to EGI, EGI.eu or EGI-InSPIRE	TNA2.2	13
M.NA2.4	Number of interviews given to media organisations	TNA2.2	1
M.NA2.5	Number of papers published by users of EGI	TNA2.2	27
M.NA2.6	Public events organised by EGI.eu & NGI teams	TNA2.2	11
M.NA2.7	Events with EGI presence (stand, presentation, or literature)	TNA2.2	5

M.NA2.8	Number of unique visitors per month on the main websites	TNA2.2	7722
M.NA2.9	Number of MoUs or agreements signed with technology providers	TNA2.3 & TSA2.1	0
M.NA2.10	Number of MoUs or agreements signed with external (non-EGI) Resource Infrastructure Providers	TNA2.3 & TSA1.1	1
M.NA2.11	Number of MoUs or agreements established with collaborating Virtual Research Communities (VRCs)	TNA2.3 & TNA3.1	1
M.NA2.12	Number of MoUs or agreements signed with other partners	TNA2.3	3
M.NA2.13	Number of policies or procedures recorded by EGI.eu that apply to User Communities	TNA2.3 & TNA3.1	2
M.NA2.14	Number of policies or procedures recorded by EGI.eu that apply to Infrastructure Providers	TNA2.3 & TSA1.1	3
M.NA2.15	Number of policies or procedures recorded by EGI.eu that apply to Technology Providers	TNA2.3	1

### 6.2.3. NA3 - User Community Coordination

Metric ID	Metric	Task	Value for PQ7
M.NA3.1	Number of GGUS tickets CREATED (grouped by submitting community – where available)	TNA3.2/3	user: 2138 operational: 730
M.NA3.2	Average and Median Solution time to resolve tickets	TNA3.3	average: 35.8 median: 30.2
M.NA3.3	Uptime of User Support websites: <ul style="list-style-type: none"> <li>• Training</li> <li>• Application Database</li> <li>• VO Support Services</li> </ul>	TNA3.4	training: 99% AppDB: 99% VO Services: <ul style="list-style-type: none"> <li>• 99: LIP VO SAM instance</li> <li>• 93%: UPV VO SAM instance</li> <li>• 99%: VO Admin Dashboard</li> </ul>

M.NA3.4	<p>Visitors to User Support websites:</p> <ul style="list-style-type: none"> <li>• Training</li> <li>• Application Database</li> <li>• VO Support Services</li> </ul>	TNA3.4	<p>training:197 AppDB: 154</p> <p>VO Services:</p> <ul style="list-style-type: none"> <li>• 172 (unique visitors: <a href="http://www.egi.eu/usersupport/services">http://www.egi.eu/usersupport/services</a>)</li> <li>• 54 (unique visitors: <a href="https://vodashboard.lip.pt">https://vodashboard.lip.pt</a>)</li> </ul>
M.NA3.5	Number of VO Support Services	TNA3.4	* Offered as service: 4 (1 VO SAM instances at LIP and 2 at UPV; 1 VO Admin Dashboard at LIP)
M.NA3.6	Number of Applications in the AppDB	TNA3.4/3	<p>Applications: 354 Tools: 39 Personal profiles: 649</p>
M.NA3.7	Number of Training Days delivered through NGI Training events	TNA3.4/3	27
M.NA3.8	<p>Number of:</p> <ul style="list-style-type: none"> <li>• New/decommissioned VOs</li> <li>• Low/Medium/High Activity VOs</li> <li>• International VOs</li> </ul>	TNA3.1	<ul style="list-style-type: none"> <li>• New/decommissioned : 2/6</li> <li>• L/M/H activity VOs: 8/23/25</li> <li>• International VOs: 111</li> </ul>
M.NA3.9	Number of users (grouped by community and VO)	TNA3.1	<p>Total : 21126</p> <ul style="list-style-type: none"> <li>• HEP : 8130</li> <li>• Infrastructure : 2852</li> <li>• LS : 1093</li> <li>• CC : 609</li> <li>• AA : 615</li> <li>• ES : 314</li> <li>• Computer Sci. and Math. : 40</li> <li>• Fusion : 95</li> <li>• Multidisciplinary : 3323</li> <li>• Others : 4055</li> </ul>

#### 6.2.4. SA1 –Operations

Metric ID	Metric	Task	Value for PQ7
M.SA1.Usage.1	Average number of jobs “done” per day for all VO’s (excluding OPS and DTEAM)	None	1 264 922
M.SA1.Usage.2	Normalised consumed computing capacity	None	2 285 000 000
M.SA1.Usage.3	Normalised Computing power consumed outside of a user’s home country	TSA1.1	0
M.SA1.Size.1	Total number of production resource centres that are part of EGI	TSA1.1	347
M.SA1.Size.2a	Total number of job slots available in EGI – Integrated and peer	TSA1.1	399 300
M.SA1.Size.2b	Total number of job slots available in EGI – Project	TSA1.1	280 800
M.SA1.Size.3	Installed Capacity in HEP-SPEC 06 in EGI	TSA1.1	2 960 683
M.SA1.Size.4	Installed disk capacity (PB) in EGI	TSA1.1	139,6
M.SA1.Size.5	Installed tape capacity (PB) in EGI	TSA1.1	557,9
M.SA1.Operational Security.1	Number of Site Security Challenge (SSC) made	TSA1.2	0
M.SA1.Operational Security.2	Number of Sites passing one Security Challenge	TSA1.2	0
M.SA1.Operational Security.3	Number of suspended sites for security issues	TSA1.2	none
M.SA1.Integration.1	Number of production HPC clusters	TSA1.3	39
M.SA1.Integration.2	Number of production sites supporting MPI	TSA1.3	108
M.SA1.Integration.3	Amount of integrated desktop resources	TSA1.3	0
M.SA1.Integration.4	Amount of virtualised installed capacity accessible to EGI users (HEP-SPEC 06)	TSA1.3	21375 (No. of resource centres:7)

<b>Metric ID</b>	<b>Metric</b>	<b>Task</b>	<b>Value for PQ7</b>
M.SA1.Service Validation.1	Total number of components tested/rejected in staged rollout	TSA1.3	30/0
M.SA1.Service Validation.2	Number of staged rollout tests undertaken	TSA1.3	50
M.SA1.Service Validation.3	Number of EA teams	TSA1.3	56
M.SA1.Accounting	Number of sites adopting AMQ messaging for Usage Record publication	TSA1.5	257
M.SA1.Support.1	Overall average number of GGUS tickets in EGI per month CREATED	TSA1.7	673
M.SA1.Support.2	Average/Median monthly ticket solution time (hours)	TSA1.7	40-9/46-8/39-7
M.SA1.Support.3	Assigned ticket monthly Average RESPONSE TIME (hours)	TSA1.7	14/15/9.4
M.SA1.Support.4	Number of tickets SOLVED by TPM (1st line support)	TSA1.7	22
M.SA1.Support.5	Average-Median ticket assignment time by TPM (1st line support) per month (hours)	TSA1.7	4
M.SA1.Support.6	COD Workload per month	TSA1.7	0
M.SA1.Support.7	EGI ROD Workload per month	TSA1.7	469/234/560
M.SA1.Support.8	EGI ROD Quality Metrics per month	TSA1.7	1534/1318/1889
M.SA1.Operation.1	NGI monthly availability and reliability	TSA1.8	N/A
M.SA1.Operation.2	Number of sites suspended	TSA1.7	0
M.SA1.Operation.3	NGI monthly availability and reliability of core operations tools	TSA1.8	N/A
M.SA1.Operation.4	NGI Monthly availability and reliability of core middleware services	TSA1.8	95.48/95.79

Metric ID	Metric	Task	Value for PQ7
M.SA1.Operation.5	EGI monthly reliability [availability] of site middleware services	TSA1.8	94.80/95.61
M.SA1.Operation.6	EGI monthly availability and reliability of central operations tools	TSA1.8	N/A

### 6.2.5. SA2 – Software Provisioning

Metric ID	Metric	Value for Q7	Comments/Explanation
M.SA2-1	Number of software components recorded in the UMD Roadmap	30	
M.SA2-2	UMD Roadmap Capabilities coverage with Quality Criteria	100% (27)	
M.SA2-3	Number of software incidents found in production that result in changes to quality criteria	2	
M.SA2-5	Number of new Product releases validated against defined criteria	21	
M.SA2-6	Mean time taken to validate a Product release	9.34h	
M.SA2-7	Number of Product releases failing validation	1	
M.SA2-8	Number of new releases contributed into the Software Repository from all types of software providers	22	
M.SA2-9	Number of unique visitors to the Software Repository	1100	
M.SA2-10	Number of unique visits to the Repository backend	4009	
M.SA2-11	Number of tickets assigned to DMSU	104	
M.SA2-12	Mean time to resolve DMSU tickets	9.5d (4.1d)	

### 6.2.6. SA3 – Support for Heavy User Communities

Metric ID	Metric	Task	Value for Q7	Comments
M.SA3.1	Number of users of deployed dashboard instances	TSA3.2.1	8161	Unique IP addresses.



Metric ID	Metric	Task	Value for Q7	Comments
M.SA3.2	Number of unique users of GANGA	TSA3.2.2	589	
M.SA3.3	Number of unique users of DIANE	TSA3.2.2	11	
M.SA3.4	Number of sites using GANGA	TSA3.2.2	70	
M.SA3.5	Number of sites using DIANE	TSA3.2.2	8	
M.SA3.6	Number of users of GReIC	TSA3.2.3	100	Most are users in the ES and Environmental domain. Other domains: LS.
M.SA3.7	Number of users of Hydra	TSA3.2.3	3	
M.SA3.8	Number of users of SOMA2	TSA3.2.4	14	
M.SA3.9	Number of users using Taverna to access EGI resources	TSA3.2.4	N/A	
M.SA3.10	Number of users using RAS	TSA3.2.4	10	
M.SA3.11	Number of users using Kepler (MD)	TSA3.2.4	10	
M.SA3.12	Number of users using Gridway	TSA3.2.4	7	
M.SA3.13	Number of MPI support tickets	TSA3.2.5	10	8 slave tickets based on the same site configuration issue
M.SA3.14	Mean time to resolve MPI support tickets	TSA3.2.5	N/A	
M.SA3.15	Number of HEP VO alarm tickets	TSA3.3	19	
M.SA3.16	Mean time to resolution of HEP VO alarm tickets	TSA3.3	N/A	The calculation has changed since the previous quarter to only include "office hours" which is not consistent with the definition of an alarm ticket.
M.SA3.17	Number of Life Science Users of provided services	TSA3.4	12	Active technical shifters in the LSGC community.

Metric ID	Metric	Task	Value for Q7	Comments
M.SA3.18	Number of databases integrated and/or accessible from EGI resources.	TSA3.4	?	Metadata DB in the context of the Climate-G testbed (harvester and local indexes) Some DB for training purposes (in the context of GILDA). 1 new DB in the LS context (UNIPROT data bank).
M.SA3.19	Number of unique users of VisIVO	TSA3.5	15	
M.SA3.20	Number of data sets accessible from EGI resources	TSA3.6	All GENESI-DR data available	Number of data sets accessible from EGI resources: unchanged.

### 6.2.7. JRA1 – Operational Tools

Metric ID	Metric	Task	Value for Q6
M.JRA1.1	Number of software release	TJRA1.2 & TJRA1.5	8 (see details in <a href="https://metrics.egi.eu/activity_metrics/task-jra1/">https://metrics.egi.eu/activity_metrics/task-jra1/</a> )
M.JRA1.2	Number of software issues reported with deployed operational tools	TJRA1.2	65 (see details in <a href="https://metrics.egi.eu/activity_metrics/task-jra1/">https://metrics.egi.eu/activity_metrics/task-jra1/</a> )
M.JRA1.3	Mean time to release for critical issues reported in production	TJRA1.2	0 (see details in <a href="https://metrics.egi.eu/activity_metrics/task-jra1/">https://metrics.egi.eu/activity_metrics/task-jra1/</a> )
M.JRA1.4	Number of approved (by OTAG) enhancement requests	TJRA1.2	0 No otag in the quarter (see details in <a href="https://metrics.egi.eu/activity_metrics/task-jra1/">https://metrics.egi.eu/activity_metrics/task-jra1/</a> )



Metric ID	Metric	Task	Value for Q6
M.JRA1.5	Mean time from approval to release for approved enhancement requests	TJRA1.2	120days (see details in <a href="https://metrics.egi.eu/activity_metrics/task-jra1/">https://metrics.egi.eu/activity_metrics/task-jra1/</a> )
gguM.JRA1.6	Number of operational tool instances deployed regionally	TJRA1.3	40 (see details in <a href="https://metrics.egi.eu/activity_metrics/task-jra1/">https://metrics.egi.eu/activity_metrics/task-jra1/</a> )
M.JRA1.7	Number of different resources that can be accounted for in EGI	TJRA1.4	0



## 7. ANNEX A1: DISSEMINATION AND USE

### 7.1. Main Project and Activity Meetings

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
24-26/01/2012	Amsterdam	EGI community sustainability workshop	2	<a href="https://www.egi.eu/indico/conferenceTimeTable.py?confId=709">https://www.egi.eu/indico/conferenceTimeTable.py?confId=709</a>
23/11/2011	Amsterdam	TCB F2F	15	<a href="https://www.egi.eu/indico/conferenceDisplay.py?confId=672">https://www.egi.eu/indico/conferenceDisplay.py?confId=672</a>
27/01/2012	Amsterdam	CHAIN-EGI meeting	8	<a href="agenda.ct.infn.it/conferenceDisplay.py?confId=701">agenda.ct.infn.it/conferenceDisplay.py?confId=701</a>

### 7.2. Conferences/Workshops Organised

Date	Location	Title	Participants	Outcome (Short report & Indico URL)
18 Nov 2011	Seattle	Gateway Computing Environments 2011 Workshop, in conjunction with SC 2011	-	<a href="http://sc11.supercomputing.org/">http://sc11.supercomputing.org/</a> <a href="http://www.collab-ogce.org/gce11/index.php/Technical_Committee">http://www.collab-ogce.org/gce11/index.php/Technical_Committee</a>
14/11/2011	Seattle	WORKS'11 workshop on Workflows in support of Large-Scale science	75	<a href="http://works.cs.cardiff.ac.uk/index.php">http://works.cs.cardiff.ac.uk/index.php</a>
10/11/2011	Amsterdam	NGI Int'l Liaisons Kick-off Meeting	35	<a href="https://www.egi.eu/indico/conferenceDisplay.py?overview=True&amp;confId=659">https://www.egi.eu/indico/conferenceDisplay.py?overview=True&amp;confId=659</a>
24-26/01/2011	Amsterdam	User and General EGI Sustainability Workshop	60	<a href="https://www.egi.eu/indico/conferenceDisplay.py?overview=True&amp;confId=709">https://www.egi.eu/indico/conferenceDisplay.py?overview=True&amp;confId=709</a>
13th-14th December 2012	LIP, Lisbon, Portugal	1st Ibergrid Cloud Meeting	~15	Startup of the IberCloud initiative aiming to implement a cloud infrastructure in for Ibergrid Users. ( <a href="http://ibergrid.lip.pt/OD/Others/1st%20Ibergrid%20Cloud%20Meeting">http://ibergrid.lip.pt/OD/Others/1st%20Ibergrid%20Cloud%20Meeting</a> )

Jan, 11, 2012	Bologna, Italy	Workshop on IGI portal - Data Management	6 NGL_IT staff + 14 people from IGI partner	Start-up meeting about data management through web portals, a one day workshop to overview the different technical solutions for the handling of the data storage for the grid/cloud user and applications portals. Several use cases have been presented by IGI partner and Italian communities.  <a href="https://agenda.italiangrid.it/conferenceDisplay.py?confId=577">https://agenda.italiangrid.it/conferenceDisplay.py?confId=577</a>
Dec, 13-14, 2011	Bologna, Italy	Security handling and monitoring in the INFN and IGI sites	27 (2 NGL_IT csirt + 25 site security officers)	This two days workshop has been organized together with the INFN security group, in order to review the following topics:  1) Incident response procedures adopted in EGI/IGI and national NREN 2) Tools and methods for the monitoring of site security 3) Tools and methods for the live incident response and post mortem analysis. <a href="https://agenda.italiangrid.it/conferenceOtherViews.py?view=standard&amp;confId=480">https://agenda.italiangrid.it/conferenceOtherViews.py?view=standard&amp;confId=480</a>
16/1/ 2011	Ljubljana	24 <sup>th</sup> EUGridPMA Meeting		<a href="http://agenda.nikhef.nl/conferenceTimeTable.py?confId=1644">http://agenda.nikhef.nl/conferenceTimeTable.py?confId=1644</a>

### 7.3. Other Conferences/Workshops Attended

Date	Location	Title	Participants	Outcome (Short report & Document Server URL to presentations made)
Nov 15, 2011	Building 170 Auditorium, PCMDI/LLNL, Livermore, CA (USA)	ASQ & GS-CAD Technical Talk	30	Technical presentations on Distributed and Grid Computing.
December 14, 2011	Dallas, Texas (USA)	PDCS2011 conference	20	Tutorial on GRelC <a href="http://www.iasted.org/conferences/speaker1-757.html">http://www.iasted.org/conferences/speaker1-757.html</a>
9/11/11	Munich, Germany	SLA4DGrid workshop	Michel Drescher	Keynote speaker for SLA in Cloud environments, <a href="https://documents.egi.eu/document/1003">https://documents.egi.eu/document/1003</a>
6/12/11	Stockholm, Sweden	IEEE Workshop on Cloud interfaces and Virtualisation	Michel Drescher	<a href="https://documents.egi.eu/document/1004">https://documents.egi.eu/document/1004</a>

2-3/11/2011	RAL, UK	2nd Workshop on Federated Identity system for Scientific Collaborations	60	D Kelsey was on organising committee, chaired one session and prepared and presented the Summary Vision Statement. Good progress on working towards common goal of federated identity. <a href="https://indico.cern.ch/conferenceDisplay.py?confId=157486">https://indico.cern.ch/conferenceDisplay.py?confId=157486</a>
24/11/2011	Brussels	SciTech Europe	400	Steven Newhouse presented in a masterclass on EGI: linking computers across Europe for European Science <a href="http://www.publicserviceevents.co.uk/masterclass-client/187/scitech-europe/3639">http://www.publicserviceevents.co.uk/masterclass-client/187/scitech-europe/3639</a> (EGI was also a sponsor)
12/01/2012	Amsterdam	2012 Internet Society Event	250	Steven Newhouse served as a panel chair: <a href="http://isoc.nl/activ/2012-newyear.htm">http://isoc.nl/activ/2012-newyear.htm</a>
30/01/2012	Brussels	ERA Conference	400	Post-event article in production. Event page at: <a href="http://ec.europa.eu/research/era/consultation/era-wrap-up-event_en.htm">http://ec.europa.eu/research/era/consultation/era-wrap-up-event_en.htm</a>
16-18/12/2012	Ljubljana, SI	24th EUGridPMA	24	D. Groep (FOM): Review and update of the authentication profile guidelines; agreed new trust anchor release schedule for EGI; reviewed IGTF Wish List and EGI status, including a new adoption plan for secure hash algorithms in view of the status of deployed middleware.  D. Kelsey (STFC): represented EGI and WLCG as a Relying Party. Led preparation of new Guidelines on Attribute Authority Service Provider Operations. V1.0 agreed during the meeting. Also made good progress on other normal IGTF business.  For full details, please see my report at <a href="https://www.eugridpma.org/meetings/2012-01/summary.txt">https://www.eugridpma.org/meetings/2012-01/summary.txt</a>
13th-14th December 2012	LIP, Lisbon, Portugal	1st Ibergrid Cloud Meeting	~15	Startup of the IberCloud initiative aiming to implement a cloud infrastructure in for Ibergrid Users. <a href="http://ibergrid.lip.pt/OD/Others/1st%20Ibergrid%20Cloud%20Meeting">http://ibergrid.lip.pt/OD/Others/1st%20Ibergrid%20Cloud%20Meeting</a>
Jan, 11, 2012	Bologna, Italy	Workshop on IGI portal - Data Management	6 NGI_IT staff + 14 people from IGI partner	Start-up meeting about data management through web portals, a one day workshop to overview the different technical solutions for the handling of the data storage for the grid/cloud user and applications portals. Several use cases have been presented by IGI partner and Italian communities.  <a href="https://agenda.italiangrid.it/conferenceDisplay.py?confId=577">https://agenda.italiangrid.it/conferenceDisplay.py?confId=577</a>

Dec, 13-14, 2011	Bologna, Italy	Security handling and monitoring in the INFN and IGI sites	27 (2 NGL_IT csirt + 25 site security officers)	<p>This two days workshop has been organized together with the INFN security group, in order to review the following topics:</p> <p>1) Incident response procedures adopted in EGI/IGI and national NREN 2) Tools and methods for the monitoring of site security 3) Tools and methods for the live incident response and post mortem analysis.</p> <p><a href="https://agenda.italiangrid.it/conferenceOtherViews.py?view=standard&amp;confId=480">https://agenda.italiangrid.it/conferenceOtherViews.py?view=standard&amp;confId=480</a></p>
November 7-8, 2011	Bucharest, Romania	Eastern Europe Partnership Event - Policies for Development of E-Infrastructures in Eastern European Countries	100	<p>To raise awareness of the importance of developing e-infrastructures in eastern Europe, TERENA organised the Eastern Europe Partnership Event on 7-8 November in Bucharest, Romania. Managers of national research and education network (NREN) organisations, research and development advisors and e-infrastructure experts discussed the enhancement of e-infrastructures and services in eastern Europe, and their further integration with pan-European e-infrastructure activities (<a href="http://www.terena.org/news/fullstory.php?news_id=3036">http://www.terena.org/news/fullstory.php?news_id=3036</a>)</p> <p>Presentations were made by representatives of multiple NGIs.</p>
14.12.2011.	University Computing Centre SRCE, Zagreb, Croatia	Third CRO NGI Day	50	<p>Annual meeting of the Croatian grid community. The program this year was concentrated on aspects of cloud computing: Cloud Services for Croatian scientific and educational system; Scientific Cloud Computing infrastructure for Europe; Public collections of data.</p> <p>As in previous years, report on status and usage of the national grid infrastructure was given and grid community members presented their use cases, experiences and challenges with grid technology.</p> <p><a href="http://www.cro-ngi.hr/dan/2011/?&amp;L=0">http://www.cro-ngi.hr/dan/2011/?&amp;L=0</a></p>
13/12/2011	Tehran, Iran	4th HPC and Grid Workshop <a href="http://www.sc.rs/news/767">http://www.sc.rs/news/767</a>	50	<p>SCL's Vladimir Slavnic was an invited lecturer at the event. He lectured on e-Science and Grid computational infrastructures, introduced Grid projects (EGI-InSPIRE) and middleware topics. He held a series of hands-on sessions with colleagues using resources of Iranian Grid resource centers. Vladimir also worked together with Iranian colleagues on establishing new Grid services and making them available to researchers.</p>
22-25/11/2011	Toulouse, France	Jres2011	~500	<p>French NGI stand and the following contributions:</p> <ul style="list-style-type: none"> <li>• presentations on IPV6 Care, server Virtualisaion, Quattor</li> <li>• poster on medical imaging distributed computing</li> </ul>
28 Nov - 29 Nov/ 2011	IFIN-HH, Magurele, Romania	RO-LCG 2011 Workshop	40	<p><a href="http://rolcg11.nipne.ro/presentations/JINRGRIDROMStrizh-1.ppt">http://rolcg11.nipne.ro/presentations/JINRGRIDROMStrizh-1.ppt</a></p> <p><a href="http://rolcg11.nipne.ro/">http://rolcg11.nipne.ro/</a></p>

16 Jan - 17 Jan/ 2011	JINR, Dubna, Russia	35th meeting of the Programme Advisory Committee for Condensed Matter Physics	50	Poster presentation <a href="http://indico.jinr.ru/conferenceDisplay.py?confId=280">http://indico.jinr.ru/conferenceDisplay.py?confId=280</a>
23 Jan - 24 Jan/ 2011	JINR, Dubna, Russia	36th meeting of the Programme Advisory Committee for Particle Physics	50	Poster presentations <a href="http://indico.jinr.ru/conferenceDisplay.py?confId=279">http://indico.jinr.ru/conferenceDisplay.py?confId=279</a>
30 Jan – 5 Feb/ 2011	JINR, Dubna, Russia	XIX International Conference Mathematics. Computer.Education. MKO-2012	350	Plenary lecture “Grid and Clouds in JINR and Russia” made by V.Korenkov, JINR
2012-01-27	TCD, IE	What can grid and cloud computing do for you?	40	Seminar in School of Computer Science and Statistics, TCD. Outcome: Interest from TCD computer science researchers in using Grid-Ireland resources.
2012-01-30	TCD, IE	Grid and Cloud e-Infrastructures	10	Meeting with Intel Academic Research Programme representatives. Outcome: networking with a view to future collaboration
2.-3.11.	RAL. Oxford, UK	Federated Identity Workshop		
8-9/11/2011	Brussels, Belgium	European Gender Summit	200	Distributed an EGI postcard focusing on gender issues in the delegate pack, attended and blogged from the event. <a href="http://www.gender-summit.eu/index.php">http://www.gender-summit.eu/index.php</a>
24/11/2011	Brussels, Belgium	SciTech Europe	150	Hosted a booth in the exhibition area, delivered a masterclass on EGI, filmed for release on DVD <a href="http://www.publicserviceevents.co.uk/programme/187/scitech-europe">http://www.publicserviceevents.co.uk/programme/187/scitech-europe</a>
5-6/12/2011	Brussels, Belgium	Innovation Convention	500	Attended the event and blogged for GridCast blog <a href="http://ec.europa.eu/research/innovation-union/ic2011/index_en.cfm">http://ec.europa.eu/research/innovation-union/ic2011/index_en.cfm</a>
5-8/12/2011	Stockholm, Sweden	eScience 2011	200	Attended the event, blogged for GridCast and published an article in iSGTW <a href="http://www.escience2011.org/">http://www.escience2011.org/</a>



## 7.4. Publications

<b>Publication title</b>	<b>Journal / Proceedings title</b>	<b>DOI code</b>	<b>Journal references</b> <i>Volume number</i> <i>Issue</i> <i>Pages from - to</i>	<b>Authors</b> <i>Initials</i>	<b>Authors</b> <i>Surname</i>
The Climate-G Portal: The context, key features and a multi-dimensional analysis"	Future Generation Computer Systems	10.1016/j.future.2011.05.015.	Vol 28: P1-8 (2012)	S. A. G.	Fiore Negro Aloisio
SOMA2 - Open Source Framework for Molecular Modelling Workflows	Chemistry Central Journal		Vol 2 (Suppl 1): P4 (2008)	T. T. P.	Kinnunen Nyrönen Lehtovuori
SOMA - Workflow for Small Molecule Property Calculations on a Multiplatform Computing Grid	J. Chem. Inf. Model.		Vol 46 (Suppl 2): P620-625 (2006)	P. T.	Lehtovuori Nyrönen
Scientific Workflow Reuse through Conceptual Workflows	Workshop on Workflows in Support of Large-Scale Science (WORKS'11)		ACM, Seattle, WA, USA, 12--18 november 2011	N. J.	Cerezo Montagnat
IWIR: A Language Enabling Portability Across Grid Workflow Systems	Workshop on Workflows in Support of Large-Scale Science (WORKS'11)		ACM, Seattle, WA, USA, 12--18 november 2011	K. J. R.	Plankensteiner Montagnat Prodan
Astronomical plates spectra extraction objectives and possible solutions	Journal Information Theories and Applications		Vol. 18, Number 3, 2011, pp. 243-247, 2011		Aram Knyazyan, Areg Mickaelian, Hrachya Astsatryan,

implemented on digitized first byurakan survey (DFBS) images					
Finite-size Scaling in Asymmetric Systems of Percolating Sticks	Phys. Rev. E	<a href="https://doi.org/10.1103/PhysRevE.85.021101">10.1103/PhysRevE.85.021101</a>	85 (2012) 021101		M. Zezelj, I. Stankovic and A. Belic
E-Infrastructures for International Cooperation	Computational and Data Grids: Principles, Applications and Design	<a href="https://doi.org/10.4018/978-1-61350-113-9.ch006">10.4018/978-1-61350-113-9.ch006</a>	p. 141-193, IGI Global (2011)		G. Andronico, A. Balaz et al.
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