



EGI-InSPIRE

EGI GLOBAL TASK REVIEW

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Abstract

This report provides a comprehensive list of the various services provided through EGI.eu and external technical partners grouped by 'Human Services' for coordination and community building; 'Infrastructure Services' for properly running and monitoring the infrastructure; 'Technical Services' for supporting the collaboration and interaction of the user, operations and technology communities. The services are self-assessed from a managerial perspective with a score ranging from 1 to 5 (with 1 being the lowest and 5 the highest) including a brief analysis of the score and how it could be improved in future years. A detailed technical reporting of the work performed by these services has been contained within the project's quarterly reports.

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II. DELIVERY SLIP

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4	30/03/2011	Final version for external reviewers	Steven Newhouse/EGI.eu
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IV. APPLICATION AREA

This document is a formal deliverable for the European Commission, applicable to all members of the EGI-InSPIRE project, beneficiaries and JRU 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/>.



VII. 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.



VIII. EXECUTIVE SUMMARY

The EGI ecosystem comprises a complex web of interdependent organisations or groups that interact to produce or consume services within the European Grid Infrastructure forming an integrated whole. Components of this ecosystem include EGI.eu as the central coordination body, National Grid Initiatives (NGIs) and European Intergovernmental Research Organisations (EIROs), Technology Providers, User Communities and the European Commission. These elements are highly interconnected and interdependent, and perform well only when they are coordinated as a whole. Therefore, it is essential to not only clearly define the set of services EGI provides, but periodically assess how each is meeting the needs of its users, ultimately leading to the identification of how the services needed collectively by the EGI community can then be improved.

This report offers a comprehensive list of the various services provided by the EGI ecosystem categorised as follows: ‘Human Services’ for coordination and community building; ‘Infrastructure Services’ for properly running and monitoring the infrastructure; ‘Technical Services’ for supporting the collaboration and interaction of the user, operations and technology communities.

The services are then self-assessed from a managerial perspective with a score ranging from 1 to 5 including a brief analysis of the score and how it could be maximised. The different scores equal: 1 = An unacceptable level of service was delivered; 2 = A level of service that was below expectations was delivered; 3 = An acceptable service level has been delivered; 4 = A level of service that exceeded expectations was delivered, but there is room for improvement; 5 = An excellent service was delivered and should be considered as best practice.

It is understood that the activities in this ecosystem will evolve and change over time, and part of EGI.eu’s role within the community will be to provide mechanisms to identify and manage that change. The presented services will continue to be defined, developed and refined during the course of the EGI-InSPIRE project as requirements, technology and the community change. The assessment of these services will also evolve and continue to be documented in this annual report.

Several common issues have been identified in this report for further managerial consideration. These include providing additional training and support for new and emerging NGIs that will reduce the support and work needed from the Global services, improving the engagement of NGIs in community activities to ensure their representation, and evolving the assessment of these Global services by the groups that use them.

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1 INTRODUCTION

The EGI Global Tasks are the responsibility of the EGI.eu organisation and are undertaken by EGI.eu staff in Amsterdam and by staff based at participants and associated participants' institutions. These activities are funded through EGI.eu, the NGIs and the European Commission through the EGI-InSPIRE project for the benefit and use of the whole community.

Selection of the organisations providing these technical services and the grouping of these tasks during the preparation of the EGI-InSPIRE project proposal was driven by technical excellence and managerial effectiveness. The EGI Global Tasks themselves were defined during the EGI_DS project [R1] with descriptions of the each task and their corresponding estimated effort. Partners were asked to bid for these tasks during the project planning phase through a short expression of interest providing administrative information (estimated effort, local financial contribution, bidding organisation skill sets, etc.), management details (how the activity is integrated with others) and technical details (roadmap, transition plan, service level agreement, etc.). Partners (i.e. European NGIs and EIROs) could choose to bid in groups to undertake particular tasks. These proposals were shortlisted by independent review to produce a preferred provider, which were then integrated into tasks and work packages within the project. Selection criteria included the technical and managerial credibility of the solution being offered, the service level agreement being offered around the task, the relative cost of the solution to the EGI-InSPIRE project (in terms of required EC contribution) in proportion to any other effort being contributed by the partner and its NGI to the task.

The services covered by this process could be classified as follows:

- Technical Services (e.g. configuration database, accounting database, training services): Generally remained with established organisations (i.e. not EGI.eu) that had been running or involved in running the services within the EGEE series of projects.
- Technical Coordination (e.g. operational documentation, interoperability): These functions, many of which were formally identified in EGI for the first time, were allocated to organisations in the community that had the required technical expertise to undertake the work.
- Human Coordination (e.g. requirements processing, operational coordination, technical coordination): These management activities spanning the different areas are generally co-located together at EGI.eu in order to ensure an efficient and effective headquarters function for EGI that had critical technical and managerial mass.

During the EGEE series of projects, predecessors to these tasks were co-funded by the EC and the hosting organisation. During EGI-InSPIRE, the EGI Global Tasks are funded by the EC (25%), the NGI (50%) and by EGI.eu (25%). This is a transition phase that recognises that the whole EGI Community benefits from these services and contributes to them through the contributions they make to EGI.eu via a participation fee. After EGI-InSPIRE, it is expected that these services will move to a funding model that reduces the direct contribution by the hosting NGI and relies more on funding from EGI.eu. It is seen to be unlikely that the technical services will receive significant EC funding, while support for the pan-European coordination activities needed to bind the community together are felt



to be suitable for some continued EC support. The funds paid to EGI.eu for these services will come from different business models (e.g. subscription, pay for use) tuned to each particular service and the service's main consuming community (e.g. resource centre, user community, NGI). EGI.eu will then redistribute these funds to the service providers assuming they deliver these services to the satisfaction of the consuming community.



2 HUMAN SERVICES

2.1 Governance

Description: The strategic direction of the EGI ecosystem and the collaboration between the individual activities is undertaken by the EGI Council. It also acts as the senior decision-making and supervisory authority of EGI.eu and as the organisation representing the EGI collaboration. The technical governance is delegated to a number of groups including the UCB, OMB and TCB described below.

Assessment: All of these governance functions have come up to speed during the first project year. The EGI Council has met 4 times and held a workshop in Santander, Spain while a financial task force will have held 5 phone meetings by the end of the 1st project year (30 April 2011). The EGI.eu Executive Board meets approximately every 2 weeks and will have held 23 meetings with several F2F meetings held in Amsterdam. Administrative support to these meetings includes minute taking, supporting the chair in the preparation of the agenda and meeting logistics for F2F meetings held in Amsterdam. The EGI.eu Director represents the organisation at these meetings and provides regular reports on its routine activity and contributes to other agenda items as required by the chair.

Score: 3

Much of the year was spent establishing the meeting structures and processes both within the EGI Council and EGI.eu Executive Board. Towards the end of the 2010 it was recognised that more support needed to be provided to the EGI Council and EGI.eu Executive Board Chair to support these meetings. This has now been implemented and will be monitored and extended as required.

2.1.1 Operations Management Board (OMB)

Description: The Operations Management Board (OMB) manages the effective and secure operation of the current production infrastructure (as a federation of nationally organised resources) and drives future developments in the operations area by making sure that the infrastructure operations evolve to support the integration of new resources such as desktop grids, cloud computing and virtualisation, and high performance computing resources. It achieves this by providing management and developing policies and procedures for the operational services that are integrated into the production infrastructure through a set of distributed management and product teams.

Assessment: The OMB has been meeting regularly on a monthly basis since the beginning on EGI-InSPIRE (11 meetings in the year – three of which were face-to-face meetings). It is an essential board for communication and information exchange with the Resource Infrastructure Providers and through them to the Resource Centres. It is also essential for decision-making during change of management, e.g. approval of new procedures and policies, collection and prioritisation of requirements, approval of deployment plans, etc.. The OMB has been successfully driving the transition from a regional to a federation of national resource providers that exists now in EGI. Meetings have been generally well attended, with two-thirds of the representatives attending on average. Unfortunately, attendance of new or small NGIs has been sporadic. Several external Resource Infrastructure Providers have not been participating in the OMB, mainly due to the



differences in time zones. Nevertheless, all providers are represented and have a chance to comment, approve and to be informed through the OMB mailing list, which is the official communication channel of the board.

Score: 4

Suggested improvements include the organisation of *ad-hoc* meetings with small and/or new NGIs to develop specific support actions; better involvement of external Resource Infrastructure Providers, through *ad-hoc* meetings co-located with EGI-InSPIRE conferences or other international meetings in order to reduce the amount of travel; and EGI.eu participation to local NGI conferences for better communication with the local Operations teams.

2.1.2 User Community Board (UCB)

Description: The User Community Board (UCB) is a forum whereby representatives from self-organised Virtual Research Communities (VRCs) meet to review and agree on the prioritisation of the emerging requirements for their use of EGI resources on a regular basis. The VRC model encourages researchers to identify and communicate with others in their field in order to capture the needs particular to their field of expertise and articulate them to EGI.

Assessment: The UCB has met twice (30 November 2010; 16 February 2011) so far and will meet again in May 2011. During the process of establishing the VRCs, the UCB has been comprised of representatives of the candidate VRCs largely drawn from representatives of the existing Heavy User Communities (HUCs) and many of whom are formally connected with the project. The meetings have been reported in Indico [R13]. The meetings have proved to be productive and beneficial in clarifying many of the issues relating to VRCs. As a result a comprehensive requirements gathering process has been established and the requirements gathered have been prioritised and endorsed by the UCB. The lack of formally established VRCs has not held back the requirements gathering process.

Score: 3

The UCB is now well established with representation from across the broad range of subject domains. Issues are progressed through regular meetings where actions are formally monitored and tracked to conclusion. Robust discussions have led to a clear vision for the formation of VRCs and as a consequence, the project is on track with represented communities and other emerging groups converting to VRC status with an increasing impetus.

2.1.3 Technical Coordination Board (TCB)

Description: The Technical Coordination Board (TCB) coordinates the interactions that EGI has with its Technology Providers. This involves combining the prioritised requirements from the operations and user communities into a technology roadmap (section 2.6). Elements from this roadmap are sourced from Technology Providers within the EGI community into the Unified Middleware Distribution (UMD). Before their inclusion into UMD these components are verified against the original requirements to ensure that these have been met.

Assessment: Over the past year, the TCB has mainly focused on a) establishing its working



relationships with Technology Providers, currently EMI and IGE, and b) setting up, integrating and executing relevant processes covering requirements collection and prioritisation, and Software Provisioning for the EGI production infrastructure. Its purpose and operating procedures are in place, functional, and in use [R2]. Due to prioritisation of work due to the late start of staff at EGI.eu, the first meeting of the TCB did not take place until 6 months into the EGI-InSPIRE project on 25th October 2010. Not all of the envisaged reporting functionality has been undertaken through the TCB (notably the regular reports from DMSU, EGI Software Repository, Criteria Definition and Criteria Verification teams) and these have taken place outside of these meetings.

Score: 3

Based on the late start of the TCB due to staffing issues in EGI.eu, the performance of the TCB is acceptable. Processes, reports and output need to be formalised and turned into a routine (e.g. as standing meeting agenda items).

2.2 Administration

Description: An organisation needs a secretariat to support its governance functions, but also to support the community and the staff it employs. Within EGI.eu support is provided during Council and Executive Board meetings. Community support is provided through a range of IT services to enable the EGI collaboration and the activities it undertakes (e.g. website, wiki, meeting planner, mailing lists, document server, timesheet tool). In addition, the central administration organises two large meetings a year (EGI User and Technical Forums) to continue building and strengthening the EGI community and collaborations within it and a number of additional workshops as required to support the community's activities.

Assessment: During the past year, the secretariat has provided support within and external to EGI.eu to undertake the organisation's governance functions. IT services to support the administration and collaboration within EGI are provided in collaboration with CESNET and have included an organisational website [R3], a project wiki site [R4], an intranet site [R5], Indico meeting planner [R6], extensive mailing lists [R7] and the DocDB document server [R8]. The Project Progress Tracking (PPT) tool [R9] provides timesheet functions for the collaboration and is hosted by CERN. A number of applications have also been set up through the Google Apps platform for EGI.eu's internal use including corporate email, shared calendars, a trip planner, URL shortener and a Customer Relationship Management (CRM) tool. The supported tools have grown as the organisation has expanded, which are now essential services for the organisation and the community.

The secretariat was under-strength for the first 9 months of the project and only achieved full recruitment status on 1 January 2011. This impacted the breadth of support that could be offered initially. However, the secretariat has provided a good level of support to the EGI Council and EGI.eu Executive Board (EB), providing minutes and administrating the meetings. A formal secretary role was established for both the Council and EB in January 2011, which is currently filled by the Chief Administration Officer (CAO). In addition, the secretariat provides substantial effort in booking project-related travel for the staff members and for speakers at EGI events. Members of the secretariat are involved in quality assurance for the project, monitoring the deliverables and milestones review process and maintaining the quality assurance wiki pages. All financial and



procedural administration for the project is also conducted within the secretariat, including liaison with project partners and timesheet management. The secretariat works closely with the dissemination team to deliver the two annual events that EGI.eu organises on behalf of the community: the EGI Technical Forum and the EGI User Forum. This includes working with the local organisers and ensuring that the requirements of the Programme Committee are met.

Score: 3.5

Due to the under staffing during the project start-up phase, the effort available to work on the first EGI Technical Forum was reduced below optimal levels. This meant that actions were not tracked with the local organisers very effectively, and logistical information about the event did not flow to delegates early enough or frequently enough. However, the event itself ran smoothly and the majority of delegates that responded to the satisfaction survey reported a positive experience. Planning for the EGI User Forum has been much improved, with regular phone meetings established with the local organisers. Deadlines for key milestones such as the event website, registration, and materials have been set and achieved much earlier.

The secretariat now delivers support for more tools and services than originally anticipated, for example the CRM, the EasyTS timesheet tool and the trip planner. Processes and procedures for administrating the project have taken longer than planned to be agreed and established, and have not always been followed strictly by members of the organisation. However, establishing a regular monthly Staff Forum has helped to achieve better understanding and knowledge of which tools and services are available and how organisational and project procedures should be followed. Now that the team is at full strength, it is anticipated that the time taken to respond to administrative requests will be reduced and that the efficiency of the team will improve.

2.3 Technical Management

Description: A concerted management effort is essential to guarantee a harmonious and coordinated implementation of the strategic policies approved by the governance bodies. Operations, Technology and User Community Managers have both reactive (dealing with the daily technical decisions needed to run a complex organisation) and proactive management roles (identifying issues that need to be brought to the relevant management bodies). They provide technical direction and leadership to the staff within EGI.eu and to those in the community who are engaged in the activity ensuring the proper definition and implementation of a professionally managed infrastructure.

Assessment: EGI.eu provides the central coordination and leadership across the operations, technology and user community activities. The main challenge this year has been employing the local staff, bringing them up to speed on the EGI aims and ambitions and establishing the structures in their respective areas. The technical management is exercised through the governance structures in each of these areas (i.e. TCB, OMB and UCB) and these have all been met and are active.

The difficulty in establishing these areas varied. The OMB had to scale from regional (~12) to national (~40) representatives, which nevertheless, has been successfully achieved. The management of the central operational tasks is proceeding satisfactorily. The TCB had to bring in requirements from the



user and operations communities (represented through the OMB and UCB chairs), which have been established through a transparent requirements gathering process, and linked these requirements to Technology Providers. In addition, the management of the distributed teams that work within the software provisioning area - defining the software criteria, assessing the software and supporting this through a repository - has been established. A rhythm of meetings has been established in the TCB with two Technology Providers (EMI and IGE) present and this number is now being expanded (SAGA and StratusLab). The UCB has brought together new and existing user communities to understand their needs and use of the e-Infrastructure. These requirements have led to the development of related services such as the applications databases (section 4.5), training services (section 4.6) and VO services (section 4.1).

Score: 3

The operations management is established and the technology management is coming up to speed. The formalisation of the user management needs to be established through Memoranda of Understanding (MoUs).

2.4 Policy Development

Description: This activity is led by the EGI.eu Policy Development Team (PDT) and encompasses a number of important tasks. These include supporting the boards and committees within EGI that draft policies and define procedures for evolving the technical infrastructure, for its operation and for access by the various VRCs. Policy development includes the definition and implementation of the approval process of policies and procedures within EGI. It also includes the formulation and development of position papers, by gathering and elaborating material, to inform the EGI management bodies and the EGI community about the opportunities for aligning with strategic-level policies or for supporting a decision-making process. They also support the negotiation and monitoring of agreements via MoUs with external partners (specifically, Technology Providers, Resource Infrastructure Providers and Virtual Research Communities). The PDT takes care of establishing and maintaining communication channels with policy makers from EGI.eu participants in order to rapidly propagate policy-oriented information within the consortium.

Assessment: The EGI Global Task related to policy development is performed by a team employed by EGI.eu and by other funded effort at two NGIs (Netherlands and UK) to provide specialised security related skills. While NGI personnel was already appointed at the beginning of the project with continuity of persons and roles from the former EGEE-III, the PDT in EGI.eu was recruited in stages, finally coming up to its full strength only in January 2011. Nevertheless, the formed team now in place brings in valuable and complementary expertise in the following areas: standardisation process and technical knowledge of grid middleware, public policies, business development and communication, and service operations. The delays in staff recruitment affected the on-time delivery of a few deliverables and required a prioritised approach to MoU negotiations. These issues have been effectively resolved in PQ4. Terms of References (ToRs) governing the various policy groups were put in place and MoUs with the two most important Technology Providers were signed committing the parties to a detailed joint work plan, while several others are in the final negotiation phase. A range of policy related deliverables, documents, blog posts, meetings, workshops and surveys have been undertaken during the second half of the year by the team.



Score: 4

Considering the resources available during the first year, the start-up phase of the organisation and the incremental hiring of the personnel, the PDT has exceeded its expectations, as it was able to deliver the expected outcome defined in the work plan, plus additional contributions. In order to improve the performance, the Policy Development Process [R19] and the monitoring of MoU execution need to be properly implemented; furthermore, communication channels with NGI policy contacts and with international policy bodies need to be further reinforced and best practices identified and documented.

2.5 Dissemination

Description: This activity is coordinated by EGI.eu on behalf of the European NGIs and projects, and other international partners. The aim is to communicate the work of the EGI and its user communities and target audiences for the dissemination outputs to new and existing user communities, journalists, general public, grid research and standards communities, resource providers, collaborating projects, decision makers and governmental representatives. Means for dissemination include the project website, wiki site, materials and publications, media and public relations, social media channels and attendance at events in order to market EGI to new users.

Assessment: The full-time members of the dissemination team did not join EGI.eu until several months after the start of the project, and in particular the designer did not join the team until January 2011. Initially, dissemination support was provided by a staff member at CSC. Despite this initial under-resourcing, a wide range of communications channels have been set up by the dissemination team on behalf of the European NGIs and projects. These include the EGI main website, which was entirely re-designed and re-launched in time for the EGI Technical Forum in September 2010, content on the wiki, an EGI blog [R12] and a range of social media channels, including Facebook, Twitter, LinkedIn, Foursquare, YouTube and Flickr [R18]. The branding for the organisation has been established through the Dissemination Handbook, and a number of templates have also been set up including presentations, posters, letters and press releases. Regular communications have been issued on behalf of the central team, such as the monthly Director's Letter and the quarterly newsletter *Inspired*. The team has also worked with other functions in EGI.eu to attend several key events by running booths and other dissemination functions.

The dissemination team has made some progress in making contact with the wider dissemination team based in the NGIs and has held face-to-face meetings and sessions at the major EGI meetings. However, engagement by NGIs in dissemination has been slow to show results, and there is not yet a sense of a coordinated, distributed team. A small number of NGIs are yet to nominate dissemination contacts or to report effort for the activity. The central dissemination team has established some individual external contacts, such as with the TERENA-CPR group, GEANT, SIENA, and the e-ScienceTalk project, and has sourced articles from NGIs for the newsletter. The dissemination team needs to build on the dissemination networks across Europe, and make its expectations from the NGIs clearer, particularly in using local resources for events. The team also needs to gather requirements from NGIs more systematically to make the best use of the central resources. The team has not yet achieved much awareness of the project in the general press, although some articles have appeared in specialist IT publications such as iSGTW, EU Projects magazine and others.



Score: 4

The dissemination team has achieved more than anticipated in a relatively short space of time, in terms of setting up communications channels, attending events and producing materials. However, it needs to assess how best to leverage these channels, and build on the contacts that it has made in the NGIs and in other projects, in order to use these most effectively to reach its audiences. This is particularly true for reaching out to new user communities and to the general public.

2.6 Technology Roadmaps

Description: Maintaining the technology roadmap for EGI requires the collection, prioritisation and analysis of requirements from the user and operations communities. From these requirements, new features are sourced from Technology Providers currently known to EGI, or from open-source or commercial Technology Providers. Components coming from within the EGI community that are needed in order to provide bespoke functionality for the production infrastructure that cannot be sourced elsewhere, are captured within the UMD Roadmap [R16]. This evolving document translates users' requirements and technology evolution into a roadmap describing the functional aspects, release dates, maintenance support, acceptance criteria and dependencies for software components that are offered to the Resource Infrastructure Providers for installation.

Assessment: During the past year, two iterations of the UMD Roadmap were published. The first iteration mainly provided a starting point of existing software while the second iteration established structural dependencies between UMD Capabilities, and further clarified which interfaces and standards describe the respective UMD Capability. The evolution of the UMD Roadmap itself should switch from a reactive process to a proactive process, aligned with well-defined communication points and processes integrated with the Technology Providers, the TCB and the executing teams within EGI-InSPIRE SA2.

Score: 3

Considering the resources available for this effort, the performance is acceptable. With execution comes experience, and many different stakeholders in this process need to be coordinated and content. Proactive and regular iterations on the roadmaps require clear processes that need to be clarified, described and executed.

2.7 User & Community Support

Description: The EGI.eu User Community Support Team (UCST) coordinates the work of the NGI User Support Teams around Europe and other specialist areas including VRCs. Much of the work focuses on an efficient information flow between the user communities and Resource Infrastructure Providers that provide the Resource Centres and resources that comprise EGI. The team drives coordination of the user community activities, the requirements collection and analysis, and the management of the user community technical services described in later sections. This is done to create an environment where these needs and efforts are pooled to steer the emerging infrastructure towards a position where users from across Europe and in all disciplines can work and collaborate in ways that suit their research needs.



Assessment: The UCST has already cultivated a strong working relationship with the NGI Support Teams and has resulted in better and stronger integration of EGI support services with the needs of the NGIs. Examples of this include the implementation of the Training Working Group (TWG), the UCST web pages and the closer relationship in the review process of deliverables. This support for the VRCs and NGIs will take the form in workshops and road shows, in addition to the technical services, which enable the UCST to tailor resources to the needs of these communities and disseminate information and knowledge to suit their needs. The first round of such workshops will build upon the activities of the application developers and took place during the EGI User Forum 2011. With over 500 of these developers recorded in the AppDB alone, an excellent starting point for identifying these individuals has already been established. Such developers represent a valuable link to the users; particularly those who do not wish to deal with the complexities of the infrastructure directly.

The biggest challenge has been the lack of funded projects to help coalesce the domain-specific user communities, which has led to weaker than expected sustainability plans emerging from some of these Heavy User Communities. However, as the end of the year nears, positive signs are starting to emerge that some of these communities are close to establishing alternative arrangements. The TWG has been convened to discuss the needs of the EGI community with respect to training and to capture and evaluate these requirements in order to support the effective development of the training 'Market Place'. This will ultimately enable users and the user community to respond to the challenges and opportunities arising from the evolution of EGI.

Score: 3

This activity has overcome the underlying challenge where many user communities faced a lack of anticipated funding compared to what was envisaged in the EGI Design Study. Good progress has been made in establishing a support framework including a flexible requirements gathering system that has enabled the communities to participate in the process. In addition, the activity has pulled together a suite of support services, which when combined with the emerging VRCs, will cover a broad range of disciplines and pave the way for a period of rapid progress in the early part of the second project year.

2.8 Operations Support

Description: EGI.eu coordinates and supervises operations and network support activities provided by the individual NGIs to ensure that operational issues are properly handled at both the Resource Centre and NGI level. It is also responsible for handling Resource Centre suspensions in case of operational issues.

2.8.1 Coordination of grid oversight

Description: Grid operations oversight activities (COD) include the detection and coordination of the diagnosis of problems affecting EGI until their resolution. It includes the reporting of middleware issues to the developers, the execution of quality checks of the services provided by NGIs, and the handling of operational problems that cannot be solved at the NGI level. This task coordinates the oversight of the national e-Infrastructures (run under the responsibility of the NGIs), which at the



NGI level, includes the monitoring of the services operated by Resource Centres, the management of tickets and their follow up for problem resolution, the suspension of a Resource Centre when deemed necessary.

Assessment: The Polish and Dutch NGI both contribute to this activity in a coordinating role. All NGIs contribute by performing grid oversight in their own region. Sometimes, corrective action needs to be taken when NGIs are not carrying out their task according to grid oversight standards. But this has been within acceptable limits. Just a single reminder email suffices in the vast majority of cases. However, at times, the COD comes across a lack of knowledge of procedures and usage of the operational tools with the ROD teams. The Polish-Dutch collaboration is very effective. With respect to level of funding and workload, the 1 FTE allocated for grid oversight coordination is barely sufficient and does not allow for more tasks to be taken on board. The COD has been given additional responsibility for new tasks, namely of the integration process, coordination of NGIs not formerly affiliated with a EGEE-ROC and the follow-up of issues relating to poor monthly performance of Resource Centres.

Score: 4

In the EGEE days, grid oversight activities coordinated the tasks of about 12 Regional Operations Centres (ROCs). Because of the limited scale, it was fairly easy to create a grid oversight community and have regular face-to-face meetings where most ROCs were represented. Now, the number of EGI Operations Centres is 34, and because of the increased scale, the creation of a community with regular face-to-face meetings is somewhat more difficult. Currently, EGI is trying to create this community by publishing a newsletter every month and by organising sessions at the EGI Technical and User Forums. Another thing that needs to be worked on is improving knowledge of some of the ROD teams. This implies improving the documentation as well as providing training. Finally, processes that currently are manually handled and are labour-intensive should be automated. An example of this is the availability/reliability follow-up procedure.

2.8.2 Coordination of network support

Description: EGI coordinates the network support activities carried out by the individual NGIs and in collaboration with the National Research and Education Networks (NRENs). Through the EGI Helpdesk, network support staff assists users with the troubleshooting of network functionality and performance issues. Network support relies on the availability of tools for network troubleshooting and monitoring.

Assessment: After the initial gathering of NGI requirements and the planning of the activities for the forthcoming months, steered by the Network Support Task Force, Network Support activities are currently affected by staff turnover at the involved NGIs, and by the on-going reorganisation of tool development activities. NGI participation to network support activities is unfunded and not all NGIs are contributing to it. Generally speaking, being that the NGI participation is unfunded, it is difficult to define an activity plan that requires NGI effort. The overall effort allocated centrally is 0.25 FTE.



Score: 3

In the coming months, the collaboration and communication among the participating NGIs will be strengthened and effort will be allocated to the provisioning of the Network Troubleshooting tool. Additionally, the Network Support unit in GGUS will be resumed for providing support regarding Network related tickets. GARR is acting as first line support. The level of collaboration and involvement of NRENs in EGI network support activities needs to be finalised.

2.8.3 Coordination of operational interoperation between NGIs and DCIs

Description: EGI coordinates the integration of heterogeneous middleware stacks and Distributed Computing Infrastructures with the EGI operational infrastructures such as: accounting, monitoring, management and support.

Assessment: Activities were focused on the collection of middleware integration plans from the NGIs; the integration of ARC into the Nagios-based monitoring system (completed); the integration of UNICORE Resource Centres into the EGI operational tools (on-going); and the establishment of communication channels with DEISA and PRACE operations staff.

Initially, this global task was hindered by some lack of clarity, especially concerning the responsibilities and the correct contact points, and it took a long time to decide and create a useful structure. With the current structure in place procedures within OMB and OTAG have been clarified. The general feeling is that NGIs are not exploiting the autonomy that came in switching from EGEE to EGI. This is either because they are not fully aware of it and need more transparency or they do not have the means to fully embrace it. They have had to be reminded regularly on the current valid procedures and to use the official channels. In that context, during last year, integration with other DCIs was only fulfilled in a rather passive approach, which included getting to know each other and search for possible fruitful collaboration targets and trying to push some common standards. Overall effort allocated is 0.5 FTE.

Score: 3

The NGIs need to get reminded on their entitlement and their possibilities to actively participate in EGI. A simplified how-to on the current desired structure and workflow has to be handed to them in order to help them through the jungle of current requirements and changing procedures, terms and agreements. The unwillingness of the NGIs to contribute is not the problem – they just need to be told repeatedly how they can contribute in a way that is easy for them to understand. Not just when they do not react to surveys and quarterly report deadlines, but proactively by asking them to formulate requirements on their own for example.

2.8.4 Coordination of documentation

Description: Coordination of maintenance and development operational documentation, procedures, best practices.

Assessment: There was a slow start to this task, primarily as it has been difficult to get NGIs interested in providing staff for this work - notably, 4 NGIs have been consistently available, others, 3 or 4, periodically. The task is designated as needing 0.5 FTE, but, as stated in the initial bid for this task, the first year has shown a heavier load than expected. Currently, the load is somewhere between 0.7 and 0.8 FTE. However, there is sufficient additional work for at least 1.0 FTE that is not currently available. There have been positive outcomes as well, which include seven new approved procedures, three draft ones close to finalisation, including the Resource Centre Certification Procedure. A lot of work has gone into structuring the Best Practices, some of the information from the GOCWiki has already been transferred to the EGI wiki, and the wiki pages have undergone transformation to a more uniform and readable style.

Score: 3

There is a need to have more NGIs provide active participation in the tasks. The number of people involved should increase by at least a factor of 4.

2.9 Ticket Process Management

Description: Through the EGI Helpdesk support issues are routed through to NGI support teams. Some of these requests may be related to specific support units but other issues relating to users' use of the e-Infrastructure will require human intervention either from an operational or user support aspect. Role of Ticket Process Management (TPM) is also to regularly check the status of assigned tickets, to solicit progress and to chase cases of wrong ticket assignments.

Assessment: Since the beginning of EGI, the TPM model with two teams is in place and well established now. The Italian and the German teams share the TPM effort in fortnightly shifts, the schedule is accessible [R14]. The majority of tickets were assigned by the TPM to the responsible Support Unit in the EGI Helpdesk in less than one working hour. Most of the tickets whose assignment time takes longer than one hour were submitted outside normal TPMs office hours or during weekends. Overall effort allocated is 1 FTE with the average number of 10 submitted tickets daily.

Score: 4

Ticket assignment could be further automated in order to save TPM time for other responsibilities such as ticket monitoring – a quite exhaustive task – which takes a lot of the total time spent on TPM activities. Now that the third level middleware support units (currently 30) are hidden behind the catch all support unit DMSU, GGUS could think of letting users assign tickets not only to NGIs/ROCs but also to the second level support units. This could be another procedure to bypass the TPM and thus save time for other activities like ticket monitoring.

2.10 Requirements Gathering

Description: A transparent requirements processing system is needed to offer a system where the user or operations community can provide requirements and for these to be shared within the whole EGI community. All provided requirements are investigated, analysed and prioritised within a transparent and structured process. The prioritised requirements can then be acted upon by other



parties as appropriate. Depending on the domain and potential impact, identified needs might be met by the User Support Teams or Operations Teams within EGI or by Technology Providers external to EGI be they community-based, project-based or commercial. The progress and outcomes of whichever solutions are adopted will be fed back to the requesting community on a regular basis.

Assessment: The requirements gathering process has been performed for the first time during January and February 2011 following the development of the process in late 2010. This was the first ever extensive and coordinated campaign to gather requirements. The RT ticketing system – the tool adopted to collect the requirements – needed some fine-tuning, but in the end turned out to be a complete and flexible tool for this purpose. Requirements can be submitted by individuals at any time or groups/NGIs can launch campaigns and trigger a bulk submission process. Within the UCST, requirements investigation and analysis is an on-going process, summary reports of the gathered requirements and their status can be produced at any time. As a result of this, different activities can use the same system at a frequency that meets their needs. The requirements are analysed within different boards and advisory groups (USAG, UCB, OTAG, OMB, TCB) providing feedback to the submitter with the workflow being as transparent as possible. For Operations requirements, input was provided by a relatively small set of NGIs (a total of 10) with some large NGIs not providing any feedback.

Score: 4

In general, the whole process seems to work well, without significant bottlenecks. Currently, operations requirements are gathered each quarter. After the first round, it is clearer that the task is demanding for both EGI.eu and NGIs, and a significant amount of time is needed to collect feedback. Now that the majority of the tickets have been collected and processed, it is hoped that by announcing deadlines in due time the process will be easier to handle next time around. By planning the requirements campaigns more in advance, and by providing more time for the NGI submissions, the quality and the quantity of the inputs will be improved. In addition to the RT dashboard, wiki pages will be considered in order read the RSS feeds that can be created for the summary fields.

2.11 Security

Description: Security vulnerabilities and risks presented by e-Infrastructures provide a rationale for central coordination amongst EGI's stakeholders at various levels to guarantee secure access for users. In addition, security and incident response is provided through the EGI Computer Security and Incident Response Team (CSIRT) by coordinating activity at the Resource Centres across the infrastructure. This coordination ensures that common policies are followed by providing services such as security monitoring, training and dissemination with the goal of improving the response to incidents (e.g. security drills). Overall effort allocated is 1 FTE.

Assessment: The EGI CSIRT and EGI Software Vulnerability Group (SVG) are security teams responsible for operational security of the production infrastructure. Both teams are well established and are resourced sufficiently to deal with the workload due to the increasing number of NGIs. More effort from NGIs might be needed in the future. At the moment, 16 NGIs are contributing to EGI CSIRT activities. However, the coordination of EGI SVG activity is significantly underfunded, with only a fraction of EGI funding. The EGI SVG activity is coordinated by the UK NGI (Linda Cornwall). In the



past, the UK NGI was able to provide some funding (0.5 FTE) through GridPP3 project, which will end by March 2011. There is no funding specifically allocated in GridPP4 to this activity.

The required effort for the operational implementation of the International Grid Trust Federation (IGTF) trust fabric in EGI was significantly more than anticipated. This was due to increased policy complexity prepared as the result of EGI Council deliberations, and because the EGI Trust Anchor Distribution was the first product to be delivered through the EGI software release process to the NGIs and resource centres. It is expected that the excess effort will decrease over time and be more in line with the allocation. This also means that, in line with the bid, the operational implementation should be devolved to the NGIs over time. 13 security challenges were made.

Score: 4

Although both teams are able to handle various security issues efficiently, there is room for improvement. Both teams are looking into internal procedures and ways to automate various tasks.

2.12 Availability/Reliability Statistics

Description: This task includes the validation and distribution of monthly availability statistics; and the coordination of the evolution of the EGI Operational Level Agreement (OLA) framework. Effort allocated: 1 FTE (also for core services and catch all services see Section 3.8)

Assessment: The reports are generated by BARC from the WLCG collaboration. So far, BARC has been responsive to any support requests, but on a best effort basis. The procedure of opening EGI Helpdesk tickets for Resource Centres with low availability and reliability scores has lead to better follow-up. This task has also increased awareness about issues in the tools that may affect the accuracy of the results via the availability wiki. Currently, the EGI framework for quality of service assessment completely relies on the availability calculation system developed and maintained by the WLCG project.

Score: 4

The procedure currently involves many manual steps. As the Operations Tools evolve, EGI continuously provides feedback to the JRA1 activity in order to automate processes related to low availability tickets and the collection of input from low performance Resource Centres.



3 INFRASTRUCTURE SERVICES

3.1 Software Rollout

Description: Deployed software updates need to be gradually adopted in production after internal verification. This process is implemented in EGI through staged rollout, i.e. through the early deployment of a new component by a selected list of candidate Resource Centres. The successful verification of a new component in a production environment is a precondition for declaring the software ready for deployment. Given the scale of EGI, this process requires careful coordination to ensure that every new capability is verified by a representative pool of candidate Resource Centres. The responsiveness of the Resource Centres needs to be supervised to ensure that the staged rollout progresses well without introducing unnecessary delays, and to review the reports produced. It also ensures the planning of resources according to the foreseen release schedules from the Technology Providers. EGI.eu coordination is necessary to ensure a successful interoperation of the various stakeholders: Resource Centres, Technology Providers, the EGI.eu Technical Manager and the EGI Repository Managers.

Assessment: The number of partners contributing to staged rollout evaluations has been gradually increasing. Currently, all gLite, ARC and most of UNICORE and Globus components, as well as Operational Tools (SAM framework and Nagios probes¹) undergo the staged rollout process [R15]. These have an active role in the discussions and definition of the software release workflow in collaboration with SA2. A gradual transition from the EGEE-III legacy procedures (adopted for gLite 3.1 and 3.2) to the new procedures is in progress (for UMD). During this transition, both procedures have been in place and this has required additional effort. There are expert coordinators for each type of software (or middleware), though these have only been exercised so far for the gLite and Operational Tools areas. The coordinator of staged rollout has been chairing the bi-weekly operations meetings.

Score: 3

This score will improve by having the full EGI software release workflow in place and getting all involved parties using it. For each component, there is a need to have several early adopter sites in order to provide redundancy, heterogeneity, more than one deployment scenario, different supported VOs and applications workflows. Also, there is a need to have schedules of the next releases in advance, and their content/components, as well as an overview of bug fixes and new features.

3.2 Monitoring

Description: A distributed monitoring framework is necessary to continuously test the level of functionality delivered by each service node instance in the production Resource Centres. This includes generating alarms and tickets in case of critical failures, computing monthly availability and reliability statistics, and monitoring and troubleshooting network problems.

¹ Only the gLite components and SAM/Nagios are going through the staged rollout test.



3.2.1 Central SAM monitoring services

Description: The Monitoring Infrastructure is a distributed service based on Nagios and messaging. The central services – operated by EGI.eu – include systems such as the MyEGI portal for the visualisation of information, and a set of databases for the persistent storage of information about test results, availability statistics, monitoring profiles and aggregated topology information. The central services need to interact with the local monitoring infrastructures operated by the NGIs. The central monitoring services are critical and need to deliver high availability. Task effort is 1.25 FTE.

Assessment: During the last year, CERN deployed the central databases to support the EGI distributed monitoring based on Nagios. The information stored in these databases is synchronised with local instances deployed in each NGI via messaging. These databases are running as a production service without any major downtime or unavailability during the reported period. A MyEGI portal has also been deployed at CERN to visualise and extract the information about test results, service status and availabilities of NGI resources stored in the central databases.

Score: 4

The management of profiles to define the metrics and services to monitor could be enhanced through the addition of a web interface, as currently this is done manually in the central database.

3.2.2 Brokers network

Description: EGI provides a network of brokers, as a common infrastructure for messaging between service instances. Total effort allocated is 0.5 FTE.

Assessment: Monitoring depends on a reliable message broker infrastructure run by AUTH, SRCE and CERN. The network is composed of a fully connected set of four brokers, geographically separated in three locations (Croatia, Greece and CERN). The operation of the broker network requires synchronised actions between the involved partners, which are done via both a mailing list dedicated for this purpose and by IM (Jabber/gTalk) conference chats.

Score: 4

So far, there are no managerial issues that need to be solved and the level of funding for the activity is sufficient compared to its workload.

3.2.3 Central network monitoring tools

Description: Two EGI central network monitoring tools are provided for network troubleshooting: DownCollector and LookingGlass. Both have been operated by GARR since the beginning of the project. Network troubleshooting tools are being deployed and support is provided to NGIs for local deployment. Overall effort allocated is 0.25 FTE.

Assessment: The migration of those from France to Italy had been planned before the end of EGEE-III. These tools have been available since the beginning of the project, however, as development of those tools is unfunded, these tools are currently not maintained.



Score: 4

The deployment of network troubleshooting tools needs to be widely disseminated.

3.3 Accounting

Description: The EGI Accounting Infrastructure is distributed. At a central level it includes the repositories for the persistent storage of usage records, and a portal for the visualisation of accounting information. The central databases are populated through individual usage records published by the Resource Centres, or through the publication of summarised usage records. The Accounting Infrastructure is essential in a service-oriented business model to record usage information. Accounting data needs to be validated and regularly published centrally.

3.3.1 Central accounting repositories

Description: The EGI accounting repository stores persistent information relating to the usage of resources within the EGI production infrastructure. Centralised repositories are deployed and maintained by EGI. Effort related to this task is 0.25 FTE.

Assessment: The Central EGI Accounting Repository was kept running well this year. The deployment of the ActiveMQ interface to the repository (developed in JRA1) went smoothly, but deployment of the associated client by Resource Centres went very slowly. There seems to be no way for EGI to make Resource Centres update their middleware, or to read the documentation when they do, which leads to a greater support workload that has to be undertaken as part of this service. The support load due to tickets raising issues covered well by the documentation was much higher than expected. The R-GMA interface to APEL was finally switched off at the end of February 2011, many months later than planned, due to slowness of Resource Centres migrating away from it, as mentioned above, as there is insufficient funding to run this central service.

STFC has been heavily subsidising this work. There have been 3+ FTE working on it for most of this year (plus additional system administration effort for the hardware used) compared with aggregate funding of just over 1 FTE from EGI and EMI combined. It is not obvious that this level of subsidy can continue in future years. Management of the team has been straightforward as they are all from one partner but the number of other bodies wanting to interact over accounting has been a challenge.

Score: 4

Some suggested improvements would be the need to be more proactive in pushing Resource Centres earlier to move to gLite-APEL. Running a tutorial at the EGI Technical Forum would also help. Better internal monitoring of the performance of the service and the internal workflows is necessary as well as more predictable performance. Due to varying workloads, sometimes there is a large variation in the time between a Resource Centre publishing and the data being visible in the accounting portal.

3.3.2 Central accounting and metrics portals

Description: The accounting portal processes, summarises and displays the accounting data contained in the accounting repositories. The metrics portal, currently under further development,



collects and displays statistics about the project metrics, even though not directly related to accounting data. The effort allocated to these tasks is 0.25 FTE.

Assessment: Last year, most of the portal code was re-written to include new views. This change has allowed inclusion of 'custom view' and the possibility to identify foreign and local users by country.

Score: 4

The positions relating to these portals have only been filled since January 2011 due to local recruitment issues. The portals have had minimal maintenance and no development for most of the first year.

3.4 Security

Description: The objective of a Security Infrastructure is to protect itself from intrusions such as exploitable software vulnerabilities, misuse by authorised users, resource "theft", etc., while allowing the information, resources and services to remain accessible and productive for its intended users. Through the coordination groups previously mentioned, a specifically designed set of tools and services help reduce these vulnerabilities. These comprise monitoring individual resource centres (based on Nagios and Pakiti); a central security dashboard to allow Resource Centres, NGIs and EGI Computer Security Incident Response Teams (CSIRT) to access security alerts in a controlled manner; and a ticketing system to support coordination efforts.

3.4.1 Security tools

Assessment: CSIRT Nagios monitoring has proved to be a vital tool. It allows the security team to have an overview of Resource Centres' security posture. GRNET/AUTH have volunteered to host the server for the project and offers a good service given only the limited manpower available. The effort allocated is partially funded through activity Core services (Section 3.8).

Score: 4

3.4.2 Pakiti

Assessment: CSIRT Pakiti is another vital security monitoring tool for the project. It allows EGI CSIRT, NGIs and Resource Centre security officers to overview a Resource Centre's patching status. CESNET has volunteered to host the server and offers a good service with limited manpower. The effort allocated is partially funded through activity Core services (Section 3.8).

Score: 4

3.5 Configuration Repository

Description: EGI relies on a central database (GOCDDB) to record static information about different entities such as the Operations Centres, the Resource Centres, and the service instances. It also provides contact, role and status information. GOCDDB is a source of information for many other operational tools, such as the broadcast tool, the Aggregated Topology Provider, etc. Effort related to this task is 0.25 FTE.



Assessment: The GOCDDB service ran smoothly and reliably throughout the first three quarters of 2010, and during the transition from EGEE to the start of EGI. Operational support in this final quarter was challenging, with a high level of GGUS traffic, user support and emerging issues/requirements. This was to be expected considering the release of new software into production, and with the departure of the technical lead. Following an inevitable dip, support has improved in the last quarter as the new team have become more familiar with GOCDDB. The service also experienced a number of hardware failures. These were dealt with quickly and the GOCDDB Oracle Database was migrated to new, more resilient hardware. In doing so, service reliability appears to have noticeably improved. The failover plan has recently been re-established and constitutes current work.

Score: 4

The GOCDDB failover could be improved. This was not implemented with the transition from v3 to v4. This is actively being worked upon with a database backup procedure and an offsite web-portal. The release procedure could also be improved, as patches and refactored code have been continuously (and quietly) applied to the production service without formal release notification. This suggested improvement is timely, as adhering to a more formal release procedure during the last 3 months was not strictly necessary and would have consumed more time at the expense of operational support. The planned regionalisation developments for GOCDDB are challenging for the current staffing level (but should be achievable over the longer term), and will almost certainly require some refactoring of existing code to accommodate existing (and recently emerging) requirements.

3.6 Operations Portal

Description: EGI.eu provides a central portal for the operations community that offers a bundle of different capabilities, such as the broadcast tool, VO management facilities, and a dashboard for grid operators that is used to display information about failing monitoring probes and to open tickets to the Resource Centres affected. The dashboard also supports the central grid oversight activities. It is fully interfaced with the EGI Helpdesk and the monitoring system through the message passing. It is a critical component as it is used by all EGI Operations Centres to provide support to the respective Resource Centres. Overall effort allocated is 0.25 FTE.

Assessment: The transition from EGEE-III to EGI has been smooth and the integration in the new Operations Portal has been done successfully step by step. The main challenge has been the migration of key features like the dashboard, broadcast tool and VO ID cards in the EGI context in a little time. The difficulty was enforced by the multiple communication channels used by the different people involved in the decision process. Nevertheless, the different tasks were successfully achieved and reached a high level of satisfaction for users. The communication with the different instances has been considerably improved via different groups like OTAG and USAG.

Score: 4

The communication with users could be improved and the transparency of the different on-going developments could be higher. The workload for the regional support has been also under estimated



and the quality of the package (documentation, upgrade guide) needs to increase in order to decrease the time spent on the support.

3.7 EGI Helpdesk

Description: EGI provides support to users and operators through a distributed helpdesk with central coordination (GGUS). The central helpdesk provides a single interface for support. The central system is interfaced to a variety of other ticketing systems at the NGI level in order to allow a bi-directional exchange of tickets. For example, those opened locally can be passed to the central instance or other areas, while user and operational problem tickets can be open centrally and subsequently routed to the NGI local support infrastructures.

Assessment: Over the course of the first year of EGI-InSPIRE, the distributed helpdesk infrastructure has been gradually adapted to the workflows needed in the new EGI/NGI environment – in particular for technology support. The central integration platform EGI Helpdesk has been operational from the beginning of the project. The NGIs have gradually been integrated as support units in the EGI Helpdesk, whenever an NGI was ready. So far, approximately 75% of the NGIs are present in the EGI Helpdesk. The majority of those NGIs make direct use of the EGI Helpdesk as their ticket system. Other NGIs have their own national helpdesk systems or are using the xGUS helpdesk template.

Score: 4

The number of proper national helpdesks or xGUS instances needs to be increased to ensure a high quality of support in the NGIs. The usage of the helpdesk infrastructure in the area of user community and application support should be increased. Also, use cases for “helpdesk type” support need to be described and promoted.

3.8 Core Services

Description: Auxiliary core services are needed for the good running of Infrastructure Services. Examples of such services are VOMS service and VO membership management for infrastructural VOs (DTEAM, OPS); the provisioning of middleware services needed by the monitoring infrastructure (e.g. top-BDII and WMS); the catch-all CA; and other catch-all core services to support small user communities (central catalogues, workflow schedulers, authentication services). The effort allocated to these services is 1 FTE.

Assessment: Migrating the core grid services from other partners to GRNET/AUTH has been more difficult than initially anticipated, due to technical barriers, lack of clear documentation and the apparent inability to reach all the Resource Centre administrators through the NGI channels. Resource Centres were slow to act on configuration changes and in the case of the DTEAM VO, it took almost 3 months for all Resource Centres to change their configuration and use the new VOMS services, while the whole process from starting the service migration until the service was fully migrated, took almost 6 months. During this time, following up with Resource Centres has been almost a full time job. Although the level of funding is sufficient for operating the core grid services for EGI, it can prove to be insufficient to support the process of migrating complex core services with pre-existing data from other partners as well.



Score: 4

The migration process of core services from other partners to GRNET/AUTH is a one-time process for each service. The communication between the global service operators and the Resource Centre administrator has to go through the NGI channels, which should be responsible for properly informing their Resource Centres. Also, after a core service is operational, the COD should be the responsible entity for following up with Resource Centres in order to make sure that they take the necessary actions.

4 TECHNICAL SERVICES

4.1 VO Services

Description: The technical instantiation of a user community within the infrastructure is a VO. Virtual Resource Communities are supported by various technical services to collect availability, accounting and monitoring information about their VOs. The VO Services group within EGI.eu currently provides a basic, Nagios-based, VO-specific testing and monitoring system for VRCs and is extending this service with additional components and capabilities as the communities' needs evolve. The team also evaluates other VO services producing white papers and manuals for VRCs who wish to operate such services themselves. The VO Services activities focus on assisting the task of setting up and operating a VO. It supports VOs in the whole process of start-up, management and operation, pointing out to tools, services, documentation and procedural guidelines to optimise resources usage.

Assessment: The EGI VO Services has developed a well-defined package of tools and services that emerging VOs can use or deploy. These include:

- Management Support with informative wiki pages (with procedures & FAQs) and communication channels through an EGI Helpdesk Support Unit.
- Technical Support by analysis, evaluation and documentation of the available job monitoring frameworks and a basic inventory of service and monitoring tools that can support a VO.
- Infrastructure Monitoring by adapting and documenting the SAM framework to support monitoring for multiple VOs.

Score: 3

The exact definition of the activities to be performed under the task consumed significant time and effort during which the relative merits of the tools and services available from across the project were closely examined.

4.2 Software Acceptance Criteria

Description: Based on the prioritised requirements obtained from the operations and end-user communities, software acceptance criteria are defined to capture the key functional and non-functional features expected from the delivered technologies.

Assessment: The Software Acceptance Criteria Task introduced the roadmap and lifecycle of the Quality Criteria documents that guide the verification of software by the Software Validation task. Following this roadmap, a first release of the Quality Criteria documents was delivered covering most of the software capabilities described in the UMD Roadmap by analysing the existing reference implementations of those capabilities. Close collaboration with the software quality managers from the main Technology Providers allowed the dissemination of the created documents and tracking the different quality process of each provider.

Score: 3

The roadmap and lifecycle for the documents along with a clear procedure for defining and updating

the Quality Criteria are in place. A first set of documents was released. Better dissemination of the resulting artefacts and complete coverage of the UMD Roadmap needs to be addressed.

4.3 Software Validation

Description: Before new technology releases to EGI are made available for staged rollout, they are assessed to ensure that they meet the original requirements. This verification takes place by deploying and assessing the software against the publicly published criteria [R17].

Assessment: The verification process was started based on UMD Quality Criteria capabilities. The release of the first version of the Quality Criteria has allowed the creation of the verification templates and the executive summary. These checklists are integrated into the DocDB and the verification workflow. The creation and revision of these documents have improved speed and efficiency of the verification process. Verifiers only need to check a list of well-defined tests to finish the verification of a new product. This process is not unidirectional. In order to really improve the software validation process, the verification team needs feedback from the technology provider to fill this gap. The generated reports are public and included into RT tickets to gather their suggestions and complaints.

Score: 3

Due to no major releases being verified last year (only EGI Trust Anchors and SAM updates), the real impact of a major release in the verification process is unknown for the moment. A major release could affect to the process creating a bottleneck, a possible solution is to increase the available manpower.

4.4 Software Repository

Description: The software repository provides the coordination needed by EGI for the release of software, the UMD, into production. Technology Providers can contribute their software components into the repository. It manages the workflow as the software components are validated to ensure they meet the defined quality criteria and then placed into staged rollout.

Assessment: The EGI Software Repository and support tool introduced a complex workflow for the release of new software through the repository that is still under heavy development. As such, the first year of the service is considered to be successful as it delivered a working iteration of the new software release workflow, which was used to make three releases of the EGI SAM tools and three releases of the IGTF CAs. A number of EGI IT support tools such as the Wiki, Mailman, DocDB and RT are heavily used by this service.

Score: 4

The service of the EGI software Repository exceeded expectations mainly due to the hard work by the members of the task that were able to adapt to the rapid development cycles and the numerous changes of the requirements for the service provided. The only issue that needs to be addressed in the 2nd year is the collaboration with external Technology Providers such as EMI and IGE.



4.5 Application Database

Description: The EGI Applications Database (AppDB) stores tailor-made computing tools for scientists to use. It embraces all scientific fields, from resources that simulate exotic excitation modes in physics, to applications for complex protein sequences analysis. Storing pre-made applications and tools means that scientists do not have to spend research time developing their own software. The goal for AppDB is twofold: 1) to inspire scientists less familiar with programming to use EGI and its resources due to the immediate availability of the software that they need to use; and 2) to avoid duplication of effort across the user community.

Assessment: Data from the EGEE era has been imported into the new system which has been integrated with the EGI SSO system to provide authenticated write-enabled access. The new system was redesigned to provide a minimalist, yet advanced in terms of functionality, user interface. The system has incorporated many new requirements over the last year. New features include the storage of personal (developer and researcher) profiles, which aims to simplify the search for application developer experts who possess specialised knowledge, and a read-only RESTful Web API and a web gadget, which enables NGIs and VO's to be able to provide their own localised, custom interfaces to the applications database service.

Score: 4

The EGI Applications Database service exceeded expectations mainly due to the hard work by the responsible team as well as the valuable feedback, provided by the EGI UCST team on its every evaluation/testing phase. However, two key elements that should be satisfied, in order the service to reach the maturity level that it is expected for the first year of the project is the first production-level release of the developed API as well as the finalisation of the AppDB web gadget. Both mentioned key elements require feedback for the user communities and the first opportunity to gain such knowledge is the upcoming EGI User Forum event.

4.6 Training Services

Description: The training services are aimed at supporting cooperation between trainers and users in different localities by connecting the groups through the activities that are established within the NGIs and scientific clusters. The goal is to enable users to achieve better scientific performance when using EGI and guide the establishment of self-sustainable user communities. Among the provided services include training events list, which allows trainers to advertise their training events and to be made aware of other training events being run within the community, a Digital Library of training materials, and a trainers' profile database, which holds information about trainers across the EGI area.

Assessment: The systems have been developed and hosted at the UEDIN (University of Edinburgh) during the EGEE projects and this continued within EGI-InSPIRE. Unfortunately, for a number of reasons, which did not become clear until towards the end of the year, this did not turn out to be a satisfactory arrangement. Early in January 2011, UEDIN announced that they were closing down the department that had been doing this work, which explained the unsatisfactory level of commitment from the institution previously. On a positive note the training services continued to run during the



course of the year and, to be fair, all three of the technical staff assigned to the work at different times all addressed technical problems when they emerged. What was lacking was a contribution of vision and engagement in the planning process. The Science and Technology Facilities Council (STFC) have now taken on the coordination of this service on behalf of the UK JRU. They have provided assurances to the project management that STFC will be committed to taking over responsibility for developing and maintaining the services. A new developer has been assigned and it has been agreed that he will visit EGI.eu at the earliest opportunity to be fully briefed in the work.

A third training-related service, the Trainers' Registry, has also been inherited from EGEE. While this service was available for the EGI community for a few months in 2010, it has been recently put offline because neither the user communities, nor the NGIs considered this as a service that is valuable enough to be kept maintained and online. Should the community feel the need for a centrally stored registry of trainers, the training marketplace could integrate this in the future. A critical point is ensuring that the trainers' profiles are maintained within such a registry.

Score: 2

From a technical point of view, a web service has been running throughout the first year but the development aspects of this sub-task have been well below what was expected. However, at the end of year one of the Project, responsibility for the activity has reverted to STFC. The UK's STFC is proactively addressing this situation and have started redeveloping a set of web tools based on a comprehensive Statement of Requirements compiled by the User Community Support Team.

5 ANALYSIS

5.1 Human Services

Service	Score	Service	Score
Governance	3	Dissemination	4
OMB	4	Technology Roadmaps	3
UCB	3	Coordination of grid oversight	4
TCB	3	Coordination of network support	3
Ticket Process Management	4	Coordination of operational interoperation	3
Requirements Gathering	4	Coordination of documentation	3
Administration	3.5	Availability/Reliability Statistics	4
Policy Development	4	Technical Management	3
Security	4	User & Community Support	3

The human services have had to scale with the larger number of entities that are now involved in many of the governance and management structures. Management activities have become more challenging because of the larger number of entities (i.e. NGIs) involved. The level of technical expertise and managerial focus across these different sized NGIs varies greatly. Due to these variations not all NGIs have been able to equally contribute to all of the boards, task forces and activities. Chasing these unresponsive parties absorbs considerable management time across many EGI Global Tasks. In some cases, the newly established NGIs do not seem to be completely aware of the entitlement and responsibilities they acquired through the EGEE/EGI transition.

For several human services (grid oversight, ticket process management, requirements gathering, EGI CSIRT, monitoring of quality of service and stage rollout) it is foreseen that this management issue could be addressed streamlining or automating existing processes. Despite the general positive evaluation of the services throughout this report, several human services reported difficulties in involving NGIs in non-directly funded activities. More contribution from NGIs is needed in grid oversight activities, network support, documentation activities, requirements gathering and interoperation.

5.2 Infrastructure Services

Service	Score	Service	Score
Software Rollout	3	Central accounting repositories	4
Central SAM monitoring services	4	Central accounting and metrics portals	4
Brokers network	4	Security tools	4
Central network monitoring tools	4	Pakiti	4
Core Services	4	Configuration Repository	4
EGI Helpdesk	4	Operations Portal	4

In general, infrastructure services also scored well in the first year of EGI with the transition of established services to national operational infrastructures having been prepared for during EGEE-III and completed during EGI-InSPIRE. In some services, the required effort exceeded expectations due to migration activities from EGEE to EGI, and by having to deal with less technically proficient NGI operations teams. In others, the low effort associated with these tasks means that support for the service is dependent on just a single critical developer. Raising the technical expertise of the weakest NGIs would considerably reduce the extra support burden that is now being carried by the EGI Global Task providers.

5.3 Technical Services

Service	Score	Service	Score	Service	Score
Software Acceptance Criteria	3	VO Services	3	Software Validation	3
Application Database	4	Training Services	2	Software Repository	4

Many of the Technical Services supporting the EGI Community have been established for the first time over the last year and having been slowly establishing their focus and a set of activities within the project. Some of these technical services are focused purely on assisting in the delivery of a production infrastructure. Others are centrally provided services that are being embedded within NGI or VO portals to provide views that can be targeted around specific parts of the EGI Community.

6 CONCLUSIONS

This report contains a self-assessment of central services provided by the EGI.eu and its partners to their consuming community by the providers of these services. These services have been established (many as distinct roles for the first time) in the context of an EGI environment that has been grown in complexity and size. The large regional operations centres established in EGEE have been evolving into a greater number of medium and small individual national operations centres. The coordination of these global services across a significantly greater number of organisations has provided many challenges that have been reported here and in more detail in the project's quarterly reports.

Several common issues have been identified in this report for further managerial consideration:

- **Training:** Given the recent transition in the EGI Community it is not surprising there is a shortage of skills in some NGIs. The Global Task provider can help by ensuring that there are clear manuals and documented procedures to support their services to decrease the need to provide support to the NGIs. However, the NGIs also need to commit to improving their technical competency to ease the support burden on the Global Task providers.
- **Communication:** Many NGIs do not seem to be engaging in the broader EGI community. For instance by having unknown or unresponsive management contacts, NGI representatives not attending meetings, contributing to surveys, requirements gathering, etc. This leads to poor representation of their needs in EGI and increased lack of engagement as they become disconnected from the peers across Europe.
- **Monitoring:** As the definition of these services evolves, work will continue on how to assess their performance and effectiveness. This may include quantitative measures and direct assessment (where practical) of the service by the groups that consume it.

These services will be assessed again towards the end of project year 2. Although this report does not claim to be a rigorous quantitative analysis of the services it has identified some common issues that can be addressed in second year of the project.

7 REFERENCES

R 1	D3.2 Annual Report on the status of EGI's User Services and Community Coordination - https://documents.egi.eu/document/386
R 2	Technology Collaboration Board (TCB) Terms of Reference - https://documents.egi.eu/document/109
R 3	EGI website - https://www.egi.eu
R 4	EGI wiki pages – https://wiki.egi.eu
R 5	EGI intranet site - https://sites.google.com/a/egi.eu/office/
R 6	Indico meeting planner - https://www.egi.eu/indico/
R 7	EGI mailing lists - https://mailman.egi.eu/mailman/listinfo
R 8	EGI DocDB document server - https://documents.egi.eu/secure/DocumentDatabase
R 9	PPT (project planning tool) - https://pptvm.cern.ch/egi/
R 10	EGI Technical Forum 2010 - http://www.egi.eu/eqitf2010/
R 11	EGI User Forum 2011 - http://uf2011.egi.eu/
R 12	EGI blog - http://www.egi.eu/blog/
R 13	EGI UCB wiki page - https://wiki.egi.eu/wiki/UCB
R 14	GGUS - https://gus.fzk.de/admin/tpm_list.php
R 15	Early Adopters web page - https://www.egi.eu/earlyAdopters/table
R 16	UMD Roadmap - https://documents.egi.eu/document/272
R 17	UMD Quality Criteria - https://documents.egi.eu/document/240
R 18	Press page containing social media contacts - http://www.egi.eu/about/press/
R 19	Policy Development Process (PDP) - https://documents.egi.eu/document/169