EGI-InSPIRE

Annual Report on the status of EGI's User Services and Community Coordination

EU DELIVERABLE: D3.2

Document identifier:	EGI-doc-386, version 6
Date:	13/05/2011
Activity:	NA3
Lead Partner:	EGI.eu
Document Status:	FINAL
Dissemination Level:	PUBLIC
Document Link:	https://documents.egi.eu/document/386

Abstract

This is the first Annual Report on the status of the User and Community Support function of the European Grid Infrastructure. It details both the establishment of the User Community Support Team (UCST) at the EGI.eu headquarters in Amsterdam and of the User Support Teams within the NGIs. The achievements of the user community coordination and support functions are summarised and the long term strategy of the activity as well as the goals for the year ahead are described.

The user and community coordination and support activities reached full strength towards the end of the first year of the project. Though considerable challenges have been confronted, a suite of services are being delivered and used by the NGIs and these are indicative of the collaborative environment that is being created. A ten point strategy has been put in place to consolidate on such success.

I. COPYRIGHT NOTICE

II. DELIVERY SLIP

	Name	Partner/Activity	Date
From	Stephen Brewer	EGI.eu/NA3	22-02-2011
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Approved by	**AMB & PMB**		23-05-2011

III. DOCUMENT LOG

Issue	Date	Comment	Author/Partner
1	22-02-2011	First draft	Stephen Brewer/EGI.eu
2	09-03-2011	Content added	Stephen Brewer/EGI.eu
3	17-03-2011	Various edits responding to comments and questions from EGI.eu	Steve Brewer & Richard McLennan/EGI.eu
4	15-04-2011	Various edits responding to comments from reviewers	Steve Brewer
5	09-05-2011	Improvement based on review from SN	Gergely Sipos/EGI.eu
6	13-05-2011	Minor changes based on AMB feedback (SA3)	Gergely Sipos/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/.

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 first year of the EGI-InSPIRE project has seen the establishment of the User Community Support Team (UCST) at the EGI.eu headquarters in Amsterdam and User Support Teams within the National Grid Initiatives/Infrastructures (NGI). The task has been far from straightforward as the translation of broadly agreed principles into specific detail that is acceptable by individual NGIs and Virtual Research Communities (VRCs) demanded considerable attention. Nevertheless, the UCST is now in a strong position to move forwards with the NGIs and has furthermore worked closely with these and other partners at the first User Forum in April 2011. The User Community Support Team's role within the broad context of the European Grid Infrastructure (EGI) has been to harness the efforts and needs of traditional and emerging new communities, thereby creating a collaborative environment where efforts are pooled to the clear benefit of scientific researchers across Europe. Strong working relationships have been cultivated with the NGI Support Teams as well as with emerging VRCs whereby the UCST can communicate and support communities of researchers with common interests and practices. The biggest challenge has been the lack of funded projects (the so-called Special Support Centres - SSCs) to help coalesce the domain-specific user communities which in turn has led to weaker than expected sustainability plans emerging from some of the Heavy User Communities in particular.

For Year 2 of the project, three key areas of work have been planned. Firstly, even stronger communication between the UCST and the user community (its customer base) will enhance the impact and effectiveness of the collaborative efforts of the NGIs, VRCs and individual researchers. Secondly, an important goal for UCST is to bring greater transparency and awareness to the services that are being put in place for the community and to promote these services such that it becomes the norm for NGI User Support Teams to use them. Thirdly, development of the Technical Services for Users and Communities will underpin greater sharing and cross-utilisation of solutions, notably amongst these being a 'Training Marketplace', the Application Database and the VO Services.

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1   INTRODUCTION

This document presents a summary of the achievements of the User Community Support activity within the EGI-InSPIRE project, as well as within the broader EGI collaboration during the first year of the project. An analysis of the issues that have emerged together with any remedial action and finally a set of plans for the second project year are also provided. User Community Coordination is led by a team based at the EGI.eu headquarters in Amsterdam in the Netherlands and augmented by a distributed team of developers based across a number of EGI-InSPIRE partners namely GRNET, STFC, LIP and UPV.

The users of the EGI have traditionally come from communities that have been heavily involved in developing the underlying technology and hence have possessed the knowledge and skills to exploit and further develop the grid. However, as described below, this situation is rapidly changing. The role of the User Community Support activity within EGI is to harness the efforts and needs of these emerging new communities. Together with those of the traditional communities, the UCST must 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; they should not be obliged to become experts in the infrastructure itself. This is partly achieved by providing a suite of services - applications database, VO monitoring tools, training marketplace, community repository - as well as a model of cultivating Virtual Research Communities (VRC) whereby EGI can communicate and support communities of researchers with common interests and practices.

The activity has cultivated a strong working relationship with the NGI Support Teams and resulted in better and stronger integration of EGI support services with th+e needs of the NGIs; examples of this include the implementation of the Training Working Group, 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 of workshops and road-shows in addition to the technical services which enable the UCST to tailor resources to the needs of these communities and also disseminate information and knowledge to suit their needs. The first round of such workshops built upon the activities of the application developers and took place during the User Forum 2011. With over 500 of these developers recorded in the AppDB alone, a comprehensive starting point for identifying these individuals has already been established.   Such application developers represent a valuable link to the end users, particularly those who do not wish to have to deal with the complexities of the infrastructure directly.

The User Community Support activity has also worked hard during the course of the first year to define and establish the user and community support function both in terms of subject domain and the geographical reach of the EGI community and eco-system. 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.

2 USER COMMUNITY COORDINATION

The User Community Coordination activity at EGI.eu has reached the end of the year having acquired its full complement of staff, established all of the key services and processes and having achieved the goals and objectives laid down in the DoW:

1. Coordination of effective, responsive support for the EGI user communities (both individual VOs and those represented by VRCs) through the efforts of the national and specialist support units: Relying on the EGI Helpdesk, the Requirement Tracker (RT) system, the USAG and UCB policy groups and experts from NGI User Support Teams the activity established a support network that is capable of serving individual users and structured user communities.

2. Coordination of training, documentation and technical requirements from the user communities to improve the EGI user experience and services: Using the RT system the NA3 work package gathered training needs and requirements from user communities and NGIs. The requirements have been prioritised and discussed by UCB and Training Working Groups and resulted in a "Training Marketplace" and development plans for its extension.

3. Coordination of technical services to support the establishment and management of virtual organisations: The project through the "VO Services" activity (in TNA3.3) established a Nagios based service to provide a framework for VOs to monitor their resources using their own, domain specific test probes The services is already used by the WeNMR community and uptake by several other communities is expected in the near future.

The EGI.eu User Community Support Team (UCST) provides coordination and support to the various distributed support teams across the NGIs and other specialist areas including VRCs. The website and other documentation provide guidance and direction to users and communities as to the optimum channels for them to receive help. A suite of technical services has been developed and is provided to augment these support services.

The User Community Support activity also plays a part in capturing and processing requirements from across the community and proactively processing them in order to feed them to the appropriate area for further action. A transparent, accessible Requirements Tracking (RT) system has been implemented into which all members of the EGI community can submit, track and comment on requirements [R 17]. Requirements can relate to any aspect of the e-Infrastructure from middleware to research applications to support services. Requirements are investigated, analysed and processed by the EGI.eu UCST in conjunction with support team members from the NGIs and other partners. NA3 continues to develop the suite of technical services for users and communities. Discussions have been progressing with a number of geographically distributed user communities with the expectation that a number of these will become VRCs in the near future. These include: Digital Research Infrastructure for the Arts and Humanities (DARIAH); Research Infrastructure for Language Resources (CLARIN) both combined as an Arts and Humanities VRC; Hydrometeorology, LifeSciences, WLCG as well as Astronomy and Astro-Physics.

At the time of writing, the Requirements Tracking system has gathered approximately 250 requirements spread originating from various work packages within the EGI-InSPIRE project and drawn from various communities. The system has been swiftly adopted by the different divisions of EGI (i.e. operations, operational tools, user community, software provisioning) to facilitate the open tracking and processing of requirements tickets through the different areas and beyond. This has been achieved on the basis of developing strong working relationships with a number of research communities, many of whom are working towards finalising their individual MoUs[1]. Working relationships with the support teams of the NGIs have become more active as they start to see the benefits of both contributing to and making use of the technical services being developed and provided by the EGI UCST.

The User Community Support activity (NA3) benefits from strong interaction with all of the other work packages in the EGI-InSPIRE project:

- NA2 – External Relations:
    - Preparation of dissemination material for User Community Support;
    - Blog posting – an informal dissemination channel designed to stimulate discussion;
    - Contributing articles for the Inspired Newsletter;
    - Organisation of training e.g. "How to talk to the media"
    - Preparation of policy for procedures including UCB and USAG;
    - Preparation of MoUs and Letters of Intent (to collaborate as an VRC)
- SA1 – Operations:
    - Has participated in the development and configuration of the Requirements Gathering system and is now making use of this;
    - Liaison over the running and development of the EGI Helpdesk (GGUS)
- SA2 – Provisioning the Software Infrastructure:
    - Has also been involved in the evolution and uptake of the Requirements Tracker;
    - Gathering requirements particularly in the context of the activities of the TCB;
    - There has been much communication over the year, particularly recent months, relating to the roadmaps of the technology providers in order to maximise the timeliness of activities in NA3;
- SA3 – Services for the Heavy User Communities (HUC):
    - Provides a communication channel to the HUCs;
    - Provides tools and services for the HUCs that will be made available to others. These include: GANGA and DIANE job submission tools in conjunction with a 'mini-dashboard' and NAGIOS;
- JRA1 – Operational Tools:

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[1] An EGI Virtual Research Community (VRC) is defined by a Memorandum of Understanding (MoU). This is a document that defines the scope of the research domain of the VRC in question together with details of the key representatives who will speak for and communicate with that community. The sustainability and governance model for the community will be described and finally a time-line will be drawn up for the key tasks that will be needed to establish the VRC together with cyclical tasks such as reporting, reviewing the VRC, attending the User Community Board meetings and other formal engagements.

- o Contact is maintained to evaluate which operation tools may be of interest to the user communities and therefore made available through the VO services.
- o Further development of VO registration and management tools (Operations Portal) based on UCST guidance for the benefit of users and NGI user support teams.

2.1 UCST: the role and achievements of the User and Community Support Team

By the start of 2011 the staffing at EGI.eu had risen to full strength and all of the technical services were available as resources for users. In order to build upon these resources, both technical and human, three channels of endeavour were required:

1. Helping scientific communities establishing EGI VRCs to collect and communicate requirements to EGI (TNA3.2 task).
2. Establishing communication channels with the NGIs for user support related topics.
3. Providing key technical services with valuable features for NGI User Support Teams (TNA3.4 task).

All were challenging, required drive and persistence, and needed coordination and alignment in order to achieve the desired outcome. That desired outcome was an integrated and cohesive support structure that would serve the needs of all communities, large and small, both new and established.

The first challenge was that many of the communities that we wanted to support were a long way from being sufficiently organised to communicate as one in the form of a Virtual Research Community (VRC). The Heavy User Communities that were formally incorporated into the project through SA3 did not all manage to resolve the failure of the Specialised Support Centres (SSCs) to get funding. Some, such as WLCG, remained strong in terms of having a 'voice' with which UCST could communicate but many of the other contacts reported that they did not have the resources to take on the responsibility of speaking for their community without specific new project funding to do so. In order to resolve these issues the User Support Coordination activity has been working with the known HUC contacts to reduce the effort that might be required to fulfil this role. Essentially, the purpose of a VRC is simply to capture and articulate the needs of that community and communicate the benefits and services provided by EGI to the users within the community. Therefore, a simple gateway, mailing list and contact address might be sufficient. It is not necessary that a VRC representative is a 'leader' of a community, rather a spokesperson who is known and respected within that community. Additionally, a template Letter of Intent was produced to enable candidate VRCs to declare their intention to establish a VRC in order to canvas support from across their community. This was a concept that emerged from the first User Community Board (UCB) meeting to which many of the candidate VRC representatives were invited in November 2010.

The second challenge was that the communication channels within NGIs were sufficiently heterogeneous to mean that it took time to establish the correct contact points to provide efficient communication between technical, support and operational services. This has largely been resolved now with several iterations of refinement to confirm the contacts. Furthermore, initiatives such as the Training Working group have helped to reinforce such communication in specific areas. The first User Forum presented the perfect opportunity to confirm these connections with face to face meetings across many of those involved in the support function across the EGI community. The UCST

maintains a list of confirmed user support contacts. The list includes contacts from 37 European and 5 non-European countries [R 26] – this set is broader than the number of JRUs that are involved in the NA3 activity or even in the EGI-InSPIRE project. The work of NGI user support teams are described in more detail in section 2.2.

The third challenge was that there were issues with the technical services (TNA3.4 task) that meant that they did not evolve as smoothly as we would have liked. The applications database made steady and dependable progress from being a cohesive standalone service from the start to being available as an object or function (commonly referred to as a 'gadget') to be embedded within the EGI Support webpages. The VO services progressed slowly at first as a lengthy investigation was required to determine which tools were available from the other work packages in the project that could be offered to users and to develop support material for these new users. Additionally, the CERN Experiment Dashboard that had been anticipated to be used as the key service was dependent on the commercial ORACLE database system and porting the dashboard to an open source database exceeds the efforts available in the project. The VO services team defined and implemented an alternative, NAGIOS based system to support VO-specific site tests for communities. The service is provided by the TNA3.4 partners and can also be downloaded and operated by communities who prefer that option. The further development of the training services has been delayed due to the withdrawal of UEDIN from the UK NGI and thus from EGI-InSPIRE. UEDIN's effort has been reallocation to STFC, the lead partner of the UK NGI.

On a positive note, good progress was made in all other areas of the activity. These are described .in the next section

2.1.1 Implement, utilise and review the requirements gathering process

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

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

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

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

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

During PQ4 this information was made visible through the User Community web pages and presented in a more user friendly manner.

2.1.2 Formalising relationship with research communities: MoUs

Following successful discussions with the various known communities and internal partners a template for an MoU for establishing and running a VRC was produced. This is now available to all partners [R 13]. Several of our known contacts are working on tailoring this to their own needs. The

first VRC to be established was the Worldwide e-Infrastructure for NMR and Structural Biology (WeNMR) community. A number of other communities are making good progress with developing their own MoUs. This process should speed up as more VRCs are established.

2.1.3 Reaching out to new communities

Contacts to new communities can come from various sources. These include direct requests, our own enquiries and investigations as well as introductions and suggestions from partners and other contacts. Further leads are established through attendance at conferences and workshops. This can include subject specialist events for example: NEERI2010 (Networking Event for European Research Infrastructures – 2010) held in Vienna, Austria, 21 October. This was a productive meeting as it brought together experts from CLARIN and DARIAH. Conversely, regional meetings such as the NDGF Strategy Workshop in Copenhagen, 9-10 November, 2010, enabled contacts to be pursued with user communities from various disciplines in the Nordic Region.

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

Once new communities have been identified as candidate VRCs discussions commence to communicate and evaluate the benefits of taking the relationship further towards an MoU. This process involves answering any questions that the prospective representative might have on behalf of their community, investigating how NGIs in countries represented by the prospective VRC currently support users from the community and what they might wish to offer in the future. For the first year of EGI-Inspire at least, it has been possible and desirable to welcome these prospective representatives to participate in the UCB meetings, As the number of formally recognised communities increases this situation may change or at least they may reduced to observers until they sign an MoU.

2.1.4 Training-related requirements

A Training Working Group (TWG) [R 12][1] 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. The Group is accountable to the UCST under WP3 and its remit is as follows:
- To consider how User Support Teams from the NGIs and other partners can cooperate most effectively from the perspective of the delivery of quality training to as many members of the user community while avoiding duplication and wastage.

- To contribute and discuss training requirements and process these through the UCST Requirements Tracking System.
- To provide feedback to their organisations regarding the processing of training requirements.

2.1.5 The User Support Web site

The User Support website has evolved in steps over the course of the year. The first iteration was formal, somewhat dry, and was structured around the organisational framework of the project rather than the needs of the users. The second iteration was more concise and contained more detailed explanations of everything that the activity offered but the structure of the navigation was not as efficient as it could be. Part of the reason for this was the challenge of embedding the technical services within the Content Management System (CMS) that was used for the website. This was as much a product of the CMS as the current implementation of the technical services. This meant that the technical services had to maintain their own sites which mimicked the look and feel of the EGI site and that their navigation was integrated with the EGI site. By the end of the year GRNET, who lead the Technical Services task, had demonstrated a gadget that enabled the Applications Database to be embedded directly within the EGI CMS. Furthermore, GRNET also demonstrated an interface whereby users could automate the creation of their own gadget tailored to their own needs. This presents another opportunity for a service to help the under-resourced VRCs develop their own tools. It is anticipated that the NGI support teams will also find this to be of use. One of the first tasks for the second project year will be for GRNET to replicate this functionality across the other technical services.

The last iteration of the support webpages took place towards the end of the first project year as result of further feedback. The challenge for the redesign process was to put together a set of pages that addressed the needs of people outside of the project whilst also addressing the needs of project members. Traditionally this might have been achieved by having an outward facing internet site and also an inward facing intranet site. However, with EGI this is not so straightforward as many of the partners have multiple roles on both sides of this artificial divide being both providers and consumers of EGI resources and services. A fundamental decision was made that information should not be replicated for different types of users. Therefore the design approach was first to define the user types, then define the information that each of these user types would need and finally to structure the site around this collective information. A navigation framework was then designed to enable any of the user types to find the information that they needed. The user types identified were, in no particular order, as follows: policy makers, the inquisitive public, VO managers, VRC coordinators, researchers (grid users and non grid users), NGI support team personnel, application developers and trainers.

The next phase was to design a User Community Support home page that provided a high level navigational framework that worked as a single entry point to all of these types of user. It was decided that there was three types of information needed: firstly, links to the key services that the Use Community Support activity provided; secondly, links to further information about User Community Support; and thirdly, news and event-related information about training and workshops aimed at users. It was agreed that the list of key services should not exceed seven as this ties in with the best advice from usability experts in this field. This resulted in the services being grouped under the following headings:

1. Portals and gateways for research communities (including EGI VRCs)
2. Support contact points for NGIs (national contact points for users)
3. Applications database (AppDB)
4. Services and Tools to support users within VOs
5. Training Marketplace - the training calendar and digital library brought together
6. Getting help (GGUS) and requesting New Features (Requirements Gathering)

These headings, it was felt, provided the optimum navigational structure for all types of user. Information about the activity would be provided under four clear headings within a second smaller grouping separate from the main links as follows:

- Team and partners (who we are)
- Organisational structure (how we work)
- Strategy (where we are going)
- Plans (how we will get there)

The news and events details, including links to the latest blog posts would be presented in the visually separate right hand side column.

Once this navigational framework was in place the content was updated to reflect the current state of the various services available to users and user communities. The NGI contacts that were known as a result of one-on-one discussions and a recent survey [R 18], together with the discipline based gateways (including the VRCs and candidate VRCs) were clearly presented. The underlying guiding principle for this restructuring was the ITIL[2] service model whereby a single point of entry is established to coordinate all aspects of support. A longer term plan for the new layout is that once the site is well bedded down, the core information known and the news relating to training and other events flowing in at a steady rate it is intended that the content be swapped over so that the news and events become the main content and the navigational links move across to the right hand side column.

2.2 NGI User Support Teams

NGIs declared at the end of EGEE that they were capable of serving their local users. Therefore the biggest challenge of EGI was bringing the distributed teams of NGI support staff into post-EGEE processes that can efficiently serve the e-Infrastructure needs of multi-national collaborations. The project put various communication mechanisms in place to enable structured and freeform communication for NGIs with their customers, with each other and with EGI.eu. The prime goal of the EGI.eu UCST for the first project year (PY1) was to establish these communication channels and to assure the proper flow of information through them for the benefit of both NGIs and scientific user communities.

User support is provided by NGIs from the TNA3.3 task of EGI-InSPIRE. There are 24 European and 7 non-European (Asian) countries involved in this task. The effort is very fragmented, none, but one partner (KIT-G, Germany) has more than 1 FTE in the task. Mainly due to this limited effort within the

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[2] ITIL stands for Information Technology Infrastructure Library - http://www.itil-officialsite.com/AboutITIL/WhatisITIL.asp

partners the project and specifically UCST established coordination, monitoring and reporting processes that put minimal overhead on partners. This is achieved by using the technical services (from TNA3.4) and a few additional key tools as the main facilitators to monitor the NGIs' user support work. The following services have been setup and are operated by the project for this purpose. The main output of the NGI User Support activity can be measured by the usage statistics of these services:

- Email lists provide freeform communication mechanisms within the complex landscape of EGI user support:

  o Those who are in the NA3 work package of EGI-InSPIRE are subscribed to the inspire-na3@mailman.egi.eu list. This list is mainly used for collecting and distributing project-related information.

  o The main user support contacts of NGIs (not only project members, but all NGIs) are subscribed to the ngi-ust-managers@mailman.egi.eu email list. This email list is used for collecting and distributing information that relates to the EGI collaboration in the broadest sense and that requires coordinated action within NGIs. The NGI User Support contacts (Websites and email lists) are listed to the community on the EGI Website (http://www.egi.eu/user-support/ngi_support) and named representatives in the EGI Wiki [R 26].

- The EGI Requirement Tracker system [R2] to capture users' and support team's requirements. More than two hundred demands are already stored in this system, out of which about 50 were submitted by NGI representatives. The fully transparent system involves NGIs not only as 'requestors', but also as solution providers. Any SSO account holder can provide answers and complete or partial solutions to any of the requirement tickets. The UCST introduced the system to NGIs and encouraged NGI user support temas to check open tickets and offer solutions to users through this system. UCST also sends out targeted invitations to those NGI groups that are assumed to have a solution to some stored requirement.

- The Training Events registry is used by NGIs to inform communities and each other about upcoming EGI-related training courses. 28 European and 18 non-European events were registered in the database during PY1. Reporting forms are offered for trainers and for trainees to help them capture best practices, successful or less successful initiatives during training courses. Event summaries prepared from these reports are also shared with EGI partners through the same registry. The registry is available through the Training Marketplace [R 18].

- Information about grid-enabled scientific applications, reusable support tools and application developer experts is stored within the EGI Application Database [R 19]. This is where NGIs and user groups can register their applications, provide details of support experts and can integrate application and developer profiles into community-specific portals and user environments. About 30 new tools and applications have been added to AppDB during PY1.

- Several thousand slideshows, video and audio tutorials and presentations are available under open source licences in the EGI Digital Library. While most of the NGIs are aware of and use the system, recent statistics showed that during PY1 the library has been used only to obtain information but not to share new content with the community. Effort will be made in PY2 to

make new training content from NGIs visible to the community through this service. The registry is available through the Training Marketplace [R 18].

- The User Community Coordination section of the EGI Wiki system [R 20] provides scratch spaces for communities to develop documents, descriptions and manuals collaboratively, before making these entities visible to the general public through the EGI User Support website and other channels. While most of the content in this Wiki is written by EGI.eu and by NGIs with international tasks, the Wiki is heavily used by NGIs as a rich source of information.

- The EGI blog [R 21] is a new service that provides a simple, yet powerful way to inform the EGI community about new developments, solutions or issues that exists within the collaboration. While statistics indicate that NGIs are gradually becoming aware of the blog, most of the posts have been written so far by EGI.eu staff. Effort will be made in PY2 to involve NGI user support teams to write blog posts.

2.2.1 NGI specific challenges or/and achievements: a selection of responses:

- Because of the limited human effort in many of the NGIs one of the biggest challenges for NGI User Support Teams was to organise efficient and easily maintainable support structure. While EGI-InSPIRE provides a central Indico, Wiki for NGIs, many of the NGIs setup local services to manage the agendas of NGI events (e.g. Indico) to track and resolve local user needs (e.g. xGUS or RT) or to write manuals/documents collaboratively (Wiki).

- Many of the NGIs have been established and/or improved their web pages to attract users. Often the updates happened after the review and feedback provided by UCST for NGIs about their Websites.

- (TUBITAK ULAKBIM, Turkey) The porting of a new scientific application for a user or a team often requires investigation and development which is specific to a given scientific code and output solution that cannot be reused in other cases. Such projects require lot of effort from the grid support team while benefit only a small group of users.

- (GRNET, Greece) Capturing and understanding feedback from user communities is challenging because the users/communities often do not provide feedback, or because of the differences in the understanding of grid/non-grid teams..

- (GISELA project [R 27]) The precise classification of VRCs in Latin America and Europe was a challenge, because scientific communities can be very different in size and structure. Identifying and establishing the right type of services to serve these communities was also difficult, but manageable

- (INFN, Italy) The effort that is available for training activities have been reduced compared to EGEE. The shortage of financial resources is the biggest challenge that the User Support activity in IGI (Italian Grid Initiative) had to face during the last year. The Italian Government, in fact, allocated funds for IGI recently, therefore things will certainly get better during the PY2 of EGI-InSPIRE.

- (INFN, Italy) Besides running training courses (see in [R 18]) and porting scientific applications to EGI (see in [R 19]) the following main achievements have been reached:

- o the Java ™ PKCS#11 (ver. 2.0) and CoG kit (1.8.0) BouncyCastle APIs have been combined to enable SMART card based user authentication in EGI

- o Creation of a patch to support DAG jobs on CREAM CEs; Development of Java portlets: i) Application Registry: access to a MySql database to print the results in a Liferay page; ii) Grid Portlet: make use of gLite Java API to submit jobs; iii) EnginFrame portlet: allows to access the gLite services by means of the EnginFrame 2010 framework; iv) gLibrary portlet: integrate the gLibrary features within Liferay; v) Adobe Connect: allows the user to access his/her own reserved area of Adobe Connect Server; vi) Web form registration: allows users to ask for an account on the portal.

- o A P-GRADE portal v2.7 has been installed and made available for the community upon request. Ad-hoc workflows and visualization tools (tested for Computational Chemistry applications) have been developed and made available via the Portal.

- (SWING, Switzerland) Non-HEP communities have little (or no) experience on porting applications to large scale distributed infrastructures. A more direct involvement of the User Support team is necessary to identify power user groups and applications, building up trust, development and training is time and effort consuming.

- (IPP-BAS, Bulgaria) There is substantial interaction between the Grid and HPC communities within the Bulgarian NGI. Some applications are running partly in grid mode and partly in cluster mode depending on which way is most appropriate. The users of such applications are technically proficient and do not require gateways and other facilitating services but instead pose certain difficulties for the administrators of the grid clusters since they have some non-standard requirements to the infrastructure. (Example of such requirements are high wall clock running times – more than one week – high amount of scratch space for jobs or storage space for results, and availability of dedicated resources.) These requirements were solved via frequent interactions between administrators and users, making changes to the configuration of the infrastructure as necessary. With the projected increase of number of users such approach will not scale well, unless significant improvements in the grid middleware are adopted.

- (LIP, Portugal) An important achievement was the restructuring of the Iberian regional infrastructure use: Instead of having regional VOs per application, a macro-VO with country groups and applications subgroups has been implemented. This makes the support of VOs in the infrastructure more scalable. The ultimate challenge was on migrating the users (mainly from the Spanish application VOs to this IBERGRID macro VO).

- (UCY, Cyprus) Some users were interested in running Matlab on grid, but the code is not available on any EGI VO. There used to be an agreement between the EGEE project and MathWorks on the usage of Matlab on a few sites, however this agreement expired and has not been extended.

- (STFC, UK) Understanding our role with respect to NA2 and SA1 in support activities. The artificial separation of the helpdesk activity into operations and user support and the problems when reporting and recording the activity into the different categories meant that at times we seemed to be pulled in different directions.

2.3 Technical Services for Users and Communities

Over the course of the first year of the project the disparate technical services that the EGI-InSPIRE started have been progressively brought together until the point where they have now coalesced into a cohesive suite of integrated resources that users would want and indeed can use as a package. These are now reviewed separately.

2.3.1 Training Events and Training Repository: the "Training Marketplace"

The training services consist of a training events calendar and a Digital Library containing training-related material. Both of these systems were inherited from the EGEE project and had been used successfully for many years. The systems have been developed and hosted at the UEDIN both during the EGEE projects and up until now within EGI-InSPIRE. Unfortunately, for a number of reasons which did not become unclear 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 UEDIN staff addressed all technical problems as 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. Furthermore, in addition to the new developer there and the hands-on management appraoch that is now possible with STFC's involvement, an appropriately skilled technical support team is also available at STFC.

A third training-related service, the Trainers' Registry, has been also 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.

2.3.2 The Applications Database (AppDB)

The activities since the beginning of the project have been primarily focused on migrating valuable existing data from the EGEE era into a new system, able to meet the rise of requirements set forth with the introduction of the EGI era, and expanding the quality of the service. The new system was redesigned to provide a minimalistic, yet advanced in terms of functionality user interface. Another important aspect of development was integrating the EGI SSO system with the portal, in order to provide authenticated write-enabled access. Finally, a new support unit was created in GGUS in order to properly report issues concerning the Applications Database (AppDB) service.

More specifically, the EGEE Applications Registry site held about 250 entries about applications available to the community via the gLite middleware. This data, stored in a DBMS, was transformed and extended during the migration process and stored in a new DBMS featuring relational support and a data model more suitable for the needs of the EGI-inSPIRE project. Support for all UMD

endorsed middleware was added (gLite, ARC, UNICORE, and Globus) and the concept of *tools* was introduced. Entries marked as tools, represent helper software that may provide QoS, easy-of-use, or additional functionality to the scientific applications stored in AppDB, and which in general does not lead to publications about results of scientific work. The entries of the existing RESPECT programme were thus also ported into the database, making it an even more valuable service for both application developers and end-users.

The Applications Database (AppDB) is now recognised as a well-developed and useful tool; its capabilities have been extended through the development and implementation of an Application Programming Interface (API). This may now serve as a building base for external parties wishing to implement their own form of the service – for example, the Training Service website being hosted by STFC in the UK will enable the community to make better use of training events, supporting material and trainers.

Another concept introduced was the storing of personal profiles for each individual application developer and researcher, a feature that aims at simplifying the search for application developer experts who possess specialised knowledge.

As far as the user interface of the new portal is concerned, it was designed from the beginning with modern minimalistic principles in mind. It features a navigation pane on the left, from where the user selects the action/view of interest, and a data view on the right, where results/details about the selection are displayed. Explanatory tooltips are available for most of the action points of the display, along with intuitive icons, and where that is not enough, pop-up dialogues with help information are available.

In order to provide the user with a consistent and responsive end result, such architectural design patterns and techniques as MVC and AJAX have been employed. To this end, on another level, extensive use of JavaScript has been made, and there has been much effort to keep all major browsers compatible with the portal. At this time, MS Internet Explorer is the only major browser whose support is to be considered experimental, in the sense that it has not been yet extensively tested, although expected to be almost 100% operational.

Another important feature of AppDB, around which much of the development effort was concentrated, was providing write-enabled access to registered users, by linking AppDB to the EGI SSO system. By providing authenticated access, users may, amongst others,

- Register new applications, instead of requesting the data be inserted for them by the AppDB support team
- Modify existing application data whenever they deem appropriate
- Edit application associations with people (developers, scientific coordinators, etc.)

This feature is expected to help provide more up-to-date, quality data, since developers will have one less barrier to divide them from it, and it should motivate them into feeling more connected to the data, in terms of ownership.

The second major release (v1.0) of the AppDB was deployed into production in mid-November, featuring write-enabled access; for the first couple of months after, the release's write-enabled feature was restricted only to NGI representatives, in order to test the functionality while minimising data corruption in case of errors. After the completion of the testing period, with input from Ireland, Switzerland, Norway, Spain, Poland, and the Netherlands, the said functionality became available to all users holding an EGI SSO account, through the release of a minor version (v1.1), which included many bug fixes and enhancements from the testing period feedback.

Among the most prominent features of this minor version, was the beta release of a read-only RESTful Web API, with XML schemata for all major resources (applications, people, publications, etc.) on a dedicated FQDN [R 1, R 3]. The requirement for such an API has stemmed from the need for NGIs and VOs to be able to provide their own localised, custom interfaces to the AppDB service, which could, for example, display entries relevant to their county or discipline only, or in their own native language.

By the time of this writing, a second minor version (v1.2) has followed shortly after, featuring, amongst others

- sanitisation of existing data,
- 3rd-person profile management by NGI representative and manager roles,
- a demo platform of web gadgets, based on the Web API, which may be used to simplify integration with other portals/Content Management Systems, and
- prototype integration with the EGI Operations Portal, by fetching VO data though its XML interface.

The featured web gadgets provide data visualization for the AppDB web API result sets, paging capabilities and user defined search operations. They are constructed in such a way, as to provide high usability to external web portals and can be configured to display specific information from the AppDB, without any change to the structure of the host site. Data and display customization can be achieved by passing predefined settings to the requested URL of the gadget, thus avoiding the need of any special client side requirement.

Last but not least of the work achieved, the AppDB Support Unit created in the EGI Helpdesk serves as the main communication channel between interested users and the AppDB development/deployment team in order to communicate bugs, and to help resolve issues concerning the quality of the service. Feature requests, on the other hand, are handled by the EGI RT [R 2] ticketing system, and monitored by the UCST.

Country	No. of applications and tools
Australia	3
Bulgaria	4
Canada	1
Cyprus	10

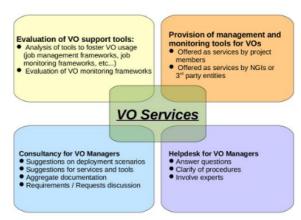|	
France	13
Germany/Switzerland	10
Greece	9
Hungary	6
Italy	155
Netherlands	15
Norway	9
Philippines	1
Poland	6
Serbia	8
Spain	11
United Kingdom/Ireland	19
USA	1
TOTAL	**281**

Number of applications and tools registered from the different countries (February 2011)

At the end of February 2011 there were 271 applications in the AppDB most of which supported by a single country, a few by more than one countries. For historical reasons 155 applications and tools that are registered in the AppDB are supported from Italy. This is largely a legacy issue due to the fact that during the EGEE era the applications database was developed in Italy.

2.3.3 VO Services

The VO Services activities focus on assisting the task of setting up and operating a VO. Those are complex tasks that require an important effort for ensuring a high quality of services. Many tools and services are available in EGI that rely on the VO information, and sometimes, procedures are neither easily available nor complete. The EGI VO Services subtask supports VOs in the whole process of start-up, management and operation, pointing out to tools, services, documentation and procedural guidelines to maximize the usage of the resources. The VO services activity is carried out by LIP in Portugal and UPV in Spain. It is noteworthy that the purpose of VO services is to enable the re-use of data by presenting it to a different audience in a different context. The activities are summarized in four main points:

1. Evaluation of VO and VRC support services and tools: To identify and evaluate tools / services which could be considered valuable by VOs.
2. Provision of services and tools for VOs and VRCs: To provide or help setting up tools / services for VOs aiming to foster production quality by VO users and VO infrastructure providers.
3. Consultancy for VO managers: To provide consultancy services to VO managers,

clarifying procedures and gathering documentation aiming to optimize the VO managers daily work.

Figure 1: VO Services activities.

4. Helpdesk for VO managers: To provide a first line support to VO managers.

In the different activities above mentioned, UPV and LIP have produced the following results:

1. Evaluation of VO and VRC support services and tools:
   - Discussion and review of the CERN dashboard framework [R 22] (software provided by TSA3.2.1 task) in order to clarify its features, installation and provision possibilities. While those Dashboard cannot be operated by communities or offered as a service outside CERN without buying an ORACLE licence, negotiations with CERN are still ongoing to understand whether the tool can be provided as a service by CERN and customised for new communities.
   - Review of a job monitoring framework built on top of GANGA and DIANE job submission tools, and integrated with mini-dashboard platforms installed at CERN. Production of appropriate documentation on the overall framework to guide VOs who are looking for software solutions [R 8].
   - Other tools for operating a VO are under analysis [R 15] and use cases, recommendations on usage and links will be provided. NGIs and VRCs are welcome to recommend tools for review by the VO services team.

2. Provision of services and tools for VOs and VRCs:
   - Analysis of the NAGIOS framework that is used by EGI to run probes across the whole infrastructure, and investigating possibilities to use the service for VO-specific monitoring probes.
   - Extending the NAGIOS service to be able to run VO-specific probes on sites that support a given VO.
   - Extending the NAGIOS service to be able to host and run VO-specific probes for multiple VOs in the same server.
   - Deployment of a NAGIOS service that can be used by VOs to implement, host and run VO-specific probes on EGI sites [R 9].
   - Development of manuals for system administrators who wish to operate VO-specific monitoring infrastructure for their VO using the NAGIOS technology [R 9].
   - Requirements about an integrated monitoring system for VO and VRC managers have been captured [R 25] and discussions have been started the JRA1 activity on how the existing tools could be integrated and extended in order to provide the required functions.

3. Consultancy for VO Managers:
   - Documentations for VO managers have been prepared and inserted into the VO Services section of EGI Wiki [R 6].
   - Frequently Asked Question section for VO managers has been written in the EGI Wiki [R 7] to address the questions that those who setup or operate VOs on EGI typically have.

- With the User Community Support Team of EGI.eu a document has been written for VO managers about the processes by which VOs are registered, validated and activated. This document follows the evolution of the CIC/Operation Portal (developed by JRA1 and provided by SA1 activities) [R 24].

4. Helpdesk for VO Managers:
    - Setup and operation of the VO Services support unit in the EGI Helpdesk system [[R 23] handling tickets addressed to that support unit, and linking / involving the appropriate bodies to reach a prompt solution. This specific activity has already originated some requirements to EMI. Inherited support units with identical mandates has been decommissioned.

2.3.4 The EGI Community Software Repository

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

2.3.5 NA3 Project metrics

Project metrics can be found at the following wiki location:

- https://wiki.egi.eu/wiki/WP3:_User_Community_Coordination#Metrics

These are updated quarterly and the fourth quarter results will be added at the end of the year.

The following metrics are recorded:

Metric ID (scope)	Metric
M.NA3.1	Number of tickets with creation time within the specified timeframe
M.NA3.2	Number of GGUS tickets raised by users and **resolved** (NGIs & EGI.eu)
M.NA3.3	Number of GGUS tickets raised by users and **resolved** by EGI.eu
M.NA3.4	Time to resolve tickets: • Average time • Median time

M.NA3.5	Uptime of User Support websites: • Training • Application Database • VO Support Services
M.NA3.6	Visitors to User Support websites: • Training • Application Database • VO Support Services
M.NA3.7	Number of VO Support Services: • Evaluated • Supported • Offered as service
M.NA3.8	Number of Applications in the AppDB: • Applications • Tools • Personal profiles
M.NA3.9	Number of Trainers in the Trainers database
M.NA3.10	Number of Training Days delivered through NGI Training events
M.NA3.11	Number of: • New/decommissioned VOs • Low/Medium/High Activity VOs • International VOs
M.NA3.12	Number of users (grouped by community and VO)

The aim of the activity with the metrics is to have a well defined, easy to capture, yet reliable set of numbers by which the development of user communities can be monitored. This is achieved by monitoring a few key areas:

1. Visitors of the technical services for users (TNA3.4 and the EGI website) (M.NA3.5, M.NA3.6, M.NA3.7, M.NA3.8, M.NA3.9)
2. Efficiency and reliability of key user support services (M.NA3.4, M.NA3.5)
3. Size of user communities and the intensity of their use of the infrastructure (M.NA3.10, M.NA3.11, M.NA3.12)
4. Usage of the EGI Helpdesk (M.NA3.1, M.NA3.2, M.NA3.3)

The metrics have been captured four times during the first year. From this experience it can be stated that the four categories still seems to be the right ones to observe the evolution of user communities. The categories should not be changed. However, it was also discovered that not all of the metrics contribute to the categories and or not all the metrics are captured with the right level of details. Particularly:

- Zero values have been reported to the M.NA3.3 metric because NGI User support teams contact UCST (members) in email, Skype or telephone and because user communities' are

resolved by NGIs instead of UCST. While the situation is expected to change as a simple ticket submission form to contact the UCST will be integrated into the EGI Website, this metric will be removed from PY2. The M.NA3.1 metric provides the overall number of tickets that were opened by users. M.NA3.4 provides information about average time and meantime of resolving tickets. M.NA3.2 and M.NA3.3 do not provide useful additional information and does not help understand the complete picture of by whom the various tickets are solved. (Every support unit – including the ones operated by NGI user support team in separate systems – should be monitored to answer that kind of questions.)

- The Trainers' registry has been removed from the website in February 2011 because neither VRCs nor the NGIs found the service useful. Instead of keeping profile information about individual trainers, user communities would like to rather see information about training services offered by NGIs or institutes. Consequently, the value of the M.NA3.9 metric will not change, reporting it on a three months basis makes no sense.

- While the number of EGI users is a key metric to understand the technology uptake, capturing this value is a nontrivial task. The number of users who access the infrastructure with personal certificates can be obtained from VO management services (VOMS). However, there is an unknown number of communities who access EGI via portals operated with "robot certificates". These users are currently invisible for the M.NA3.9 metric. The activity will investigate how the number of robot certificate users could be obtained and included in the M.NA3.9 value.

3 STRATEGY AND PLANS

This section presents the long term strategy and the short term plans based on this strategy for the year ahead. This detail will be presented on the Support web pages and comments and feedback is always welcome. The requirements gathering process exists to enable users and user communities to influence both the strategy and the plans through the prioritisation mechanism of the UCB. If necessary, plans can be reviewed and this information will be made public through the website and other channels.

3.1 Strategy

The users of the EGI infrastructure have traditionally come from communities that have been heavily involved in developing the underlying technology and hence have possessed the knowledge and skills to exploit and further develop the grid. However, this is rapidly changing and for a number of reasons.

The role of the User Community Support activity within EGI is to harness the efforts and needs of the emerging new communities and, together with those of the traditional communities, 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 without obliging them to become experts in the infrastructure itself. This is partly achieved by providing a suite of services - applications database, VO monitoring tools, training marketplace, community repository - as well as a model of cultivating Virtual Research Communities (VRC) whereby we can communicate and support communities of researchers with common interests and practices. EGI aims to achieve an environment where self-sustainable VRCs are easy to cultivate, where these communities as well as NGIs develop and provide services for their members and for each other. The User Community Coordination work package of EGI-InSPIRE defined a 10 point strategy by which it contributes to achieve this vision:

1. Website to draw in all categories of users (*www.egi.eu/user-support*)

    The website will continue to evolve in terms of usability and as a hub for all information about activities and services for all categories of users, (ranging from NGIs, VRCs and researchers through to those involved in delivering the EGI services).

2. Gather and exploit intelligence: metrics, data, trends, knowledge

    The activity collects statistics about the usage of main services (at the moment AppDB, Training Marketplace, Requirements Tracker, Webpage, Wiki, Helpdesk) and through the SA1 activity about the usage of infrastructure services. Weekly UCST reports sent to the project Activity Management Board and NA3 task leaders capture statistical snapshots of performance data and provide an overview of activity, progress and evolving trends. Typically, these snapshots show the number of new Requirement Tickets raised, the number resolved and any that are stalled and serve as an alert should management intervention be required. This alert also reveals which applications have been registered in AppDB. The metrics help the UCST team as well as the task leaders refocus effort and making informed decisions about support services,

3. Investigate key requirements –

Key requirements emerge from the user and operation communities and are stored, analysed and grouped within the EGI Requirements Tracking system. UCST drives the analysis and grouping processes and prepares reports by which NGIs, UCB and TCB can make informed decisions about potential solutions, priorities, follow up actions. All info/knowledge emerging from this work is made public in order to maximise dissemination and to speed up the resolution of identified community needs.

4. Blog – post updates on all aspects of User and community support to stimulate discussion

UCST has established itself as the dominant contributor to the EGI blog service as revealed by the tag cloud and the Google Analytics dashboard and will strive to maintain this position. The blog represents a discussion forum for the user community to interact in a public arena with the members of the UCST. We welcome and will encourage such discussions.

5. Meet the Application Developers – workshops to support key topics

End users, the scientists and other researchers who use the grid increasingly do not want to know or have to know about the workings of the infrastructure itself. Application developers are the bridge between such users and the infrastructure. Through the Applications Database we already have contact points for over 500 developers. Through the Requirement Tracker system we know their key requirements. By supporting developers to enrich the user experience with more and better generic and community-specific gateways, portals, applications and tools we can serve the needs of users, communities and the NGI support teams. The UCST identifies key technology topics that can be effectively dealt with at face to face workshops with experts from NGIs and VRCs involved and organises such workshops for the community.

6. EGI Community Roadshow – in conjunction with NGIs

For a number of years the UK and other NGIs have successfully delivered a series of road shows tailored to the needs of research institutions to attract new communities to the grid. UCST works with the NGIs to identify the most successful elements of this model and to develop a sustainable model for roadshows. The model should consist of training content that can be easily adapted to local preferences and delivered by the NGIs. Over the 1st quarter of project year 2, UCST will work with the NGI support teams to design a new system that meets the needs of our partners.

7. Training 'marketplace' – combined Training Calendar and Digital Library

The original training services had several limitations at the start of the project which have now been addressed in the new design:

- The different entities that can be important for trainees or trainers (events, materials, applications) were stored in different repositories with no linkage among related items.
- The repositories were very rigid in terms of the entitites that can be stored and shared from them with the community. NGIs, VRCs and partner projects would offer, share and advertise new types of training-related entities with the community.
- The services lack of any function for community-driven quality control, such as providing possibility to comment or rate the shared items.

8. Video material & online courses for training – supply tools and support

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Because training lacks dedicated funding in many of the NGIs, the community needs to search for alternative, cheaper ways of producing and delivering documentation and instructions to users. Screencasts and short videos are seen to offer a quicker, cheaper and simpler way of providing step by step guidance to users who require introductory training to use specific applications or services. Another problem area has been the scarcity of new material in the training database. This is already being addressed with a drive to encourage all parties to submit their material or at least links to their material. As we ramp up this effort we will provide help and advice on how to produce the best training material and also provide support and tools for developing online resources and video material. This will draw upon the links with EGI-InSPIRE's collaborating project e-Science Talk and on the expertise that already exists within some of the NGIs in producing and delivering video content.

9. VRC Representatives – EGI to support and promote their role in 'championing' the benefits that EGI can bring to the scientific communities by:

   - Speeding up the process of extending the resources which users have access to.
   - Providing information on applications & tools which are freely available.
   - Cultivate and Nurture representatives to support them in their role as spoke-persons for their community, thus enabling them to speak authoritatively to and for their community.
   - Extolling the benefits that EGI can offer.

10. Technical Services - provide technical services that NGIs and VRCs can embed in their own gateways and portals:

   The software services offered by NGIs in EGI-InSPIRE and in other EGI-related projects can better reach potential users if these services are customisable to communities' or individuals' needs and are embeddable into existing portals and gateways. The ability to embed the client interface of centrally provided technical services into NGIs or VRCs is a feature that have been recently explored and successfully implemented by the AppDB tool. Similar functionalities will be explored and integrated into other user community services by the activity, and into other types of EGI software by other work packages and by NGIs.

3.2 Plans for the second year of the project

The strategy described previously outlines the main channels that the EGI User Community Support activity follows in order to facilitate the cultivation of sustainable VRCs. Due to limited resources within the UCST and within the NGI teams, not all of the points are in focus during the four years. While some of the points are key activities that must be performed as a continuous action (e.g. maintenance of the webpage; gathering and processing requirements; blogging; further development of technical services based on community requests; supporting VRC representatives), there are topics that can have less focus during a given period during the four year long project. Consequently, the annual plans must have some of the strategy points in focus whilst they can indicate less resources for other points in the strategy. The decision on which activity is important in a given period is made by the EGI Chief Community Officer in consultation with other members of the activity and of the broader EGI collaboration. In the second year of the project the NA3 activity of EGI-InSPIRE will focus on achieving the following:

- Establish template and process for weekly reporting (Relates to strategy point 2):
  Information for the weekly activity reports are produced in a fully manual fashion. Processes and tools will be chosen to allow the better automation of the reporting process.

- UCB meetings with increased frequency (Relates to strategy point 3):
  Collecting, investigating, expanding requirements is performed by UCST and the NGIs as a continuous activity. Tickets that cannot be solved by the defined protocols are discussed and prioritised by the User Community Board (UCB) before these tickets are sent to the Technology Coordination board (TCB) and through this body to technology providers. The User Community Board (UCB) met with a three months frequency during the first project year. Because both the UCST as well as UCB members are more experienced with organising and running these meetings the frequency of the meetings can be increased (one meeting per months is foreseen). More frequent meetings are expected to speed up the process of identifying and providing solutions for community requirements.

- Identify and organise workshop to support key topics (Relates to strategy point 5):
  The User Forum 2011 (UF11) is an important step in the provision of Services and tools for EGI VRCs. NGIs, VRCs and communities have been invited to participate in a workshop organised during the forum to discuss the current status of services that are provided for application developers and to gather and discuss requirements for technical solutions. Follow-up workshops with focus on topics that expected to emerge at the user forum will be organised during the second year of the project.

- Develop the EGI roadshow model for NGIs (Relates to strategy point 6):
  Over the 1st quarter of project year 2, UCST will work with the NGI dissemination team and with the NGI support teams (through the Training Working Group) to design a roadshow model that is able to attract user communities and facilitate the establishment of VRCs from scientific groups in the NGIs. The roadshow model will be promoted and used through the NGI dissemination and support teams from the 2nd quarter of the 2nd year.

- Facilitate the extension of technical tools (TNA3.4 task) towards customisable services that can be embedded into NGI and VRC portals (Relates to strategy point 10):
  The "gadget" functionality that has been piloted by the AppDB developer group to browse applications will be reused in the Training Marketplace and will be extended with wrote mode in order to allow richer functionalities to be delivered to VRC and NGI portals. (e.g. in the form of an AppDB write gadget)

3.2.1 Contribution of NGI User Support Teams to the plans

A significant proportion of the NA3 effort is dedicated from the NGIs to the development of technical services for users and user support teams (in TNA3.3 and in TNA3.3) and to the coordination of these development activities across the consortium (in TNA3.2). The overarching goal for PY2 is to make the output of these developments visible to NGIs.

The Application Database, the Requirement Tracking system together with the recently restructured User Support Webpage and the recently established EGI blog will be important tools in achieving this

goal. Monitoring the usage of these sites is therefore a key to later evaluate the success of the promotion activity. The 'NGI road showmodel will also help EGI to promote NGIs' services and to inform NGIs about the tools that exist for them.

Other activities foreseen by NGI User Support Teams for PY2 are:

- (GRNET, Greece) Producing documentations on Application Monitoring with RGMA (for example, Log4j Logger); Use of AMGA metadata client application; General guides oriented to specific user communities (bioinformatics, astrophysics, …)
- (INFN, Italy) The amount of funds allocated to the NGI has recently increased. IGI (Italian Grid Initiative) will reorganise and improve its user support activities. Particularly, increase participation in User Support related groups of EGI, organise roadshows, support EGI VRCs with national resources, gather requirements from users.
- (LIP, Portugal) The recently established user support model has to be verified. Will it meet the users' needs and will it scale? A regional ticketing system has to be put in place.
- (UI SAV) The national infrastructure will be extended with a new, powerful site. The need for new types of documentation and support – specific for the site – is foreseen. These will be developed on demand.

3.3 Technical Services for Users and Communities

The plans for the Technical Services are described below. During the first year of the project, due to the complexity of some aspects of the various technical services which have been described earlier, much of the coordination of the technical services task had to be driven by activity leader. Now that these issues have been, resolved and the entire distributed NA3 team is working as a cohesive whole, it is anticipated that GRNET will be able to take over this coordinating role as planned and be able to focus on the technical challenges ahead in working towards the tighter integration of the services as well as their delivery and promotion.

3.3.1 Training Events and Training Repository: the "Training Marketplace"

This activity has just (March 2011) been taken over by STFC from UEDIN. The new developer assigned to the work will visit EGI at the earliest opportunity to discuss a detailed Specification of Requirements for EGI Training Services that was prepared by UCST. This was used at the planning stage for the migration to STFC and will form the basis of the product development plans that STFC are working on.

3.3.2 The Applications Database (AppDB)

Current development on the AppDB service is still according to the work plan specified at the first USAG meeting [R 11]. However, priority changes have been made to meet the circumstances, and additional items have been injected, in order to meet the rise of requirements from the evaluation of new user stories.

The main priority for the year to come will be the fulfilment of pending items from the first year, such as enhancements to the data/object model, usability, and quality of service and information, as those have been already defined in [R 10]. Once these items have been satisfied, further development will focus on the following guidelines:

- Data review and evaluation, by contacting application contributors. The UCST's involvement in this action is expected to play a crucial role.

- Integration with the EGI Software Repository. Developers should be able to register and submit software releases and associated metadata of their applications through the AppDB interface, for storage in the repository, which end-users would in turn be able to easily find and download. Such a feature would help further establish the AppDB's role within EGI, since the information provided will be more than just metadata about software, but - in a sense - the actual software itself.

When a satisfactory level of the aforementioned items is deemed to be completed, a feature freeze would be advantageous, in order to give the development team the opportunity to audit the existing codebase, and perform what will surely be much needed clean up and optimization procedures. Such an action will help eliminating bugs, boost performance, and solidify security.

3.3.3 VO Services

The activity of the UPV and the LIP will concentrate in the following items:

- VO Management Support. Continue with the support of the EGI Helpdesk support unit and on the development of the documentation supporting VO managers. Create a VO Services website to integrate all the information and to gain visibility.
- Promote VO Services. To include additional services recommendations for data access. To integrate services' information on a consolidated entry point.
- VO Infrastructure Monitoring. To deploy VO-NAGIOS boxes for new emerging VOs through the UPV and LIP deployments.
- VO Infrastructure Usage. Accounting portal information to be made available and this data will then be integrated with the AppsDB and other portal pages.

3.3.4 The EGI Community Software Repository

Concerning the EGI Community Software Repository the following activities are expected to be realised in the second year of the project:

- Development/deployment of the Community Repository based on the work done on the EGI Software Repository (SA2)
- Integrate the with the part of the RT module of the Community Repository with the AppDB service
- Development of a web interface for the Community repository (this effort should be also considered as a common task between the SA2 & NA3 activities)

4 CONCLUSIONS

The first year of the EGI-InSPIRE project has seen the successful establishment of the User Community Support Team at the EGI.eu headquarters in Amsterdam. Through this team, the user and community support functions, procedures and processes have been put in place through consultation with the NGI Support Teams to support their activities. A collaborative environment where efforts are pooled to the clear benefit of scientific researchers across Europe is becoming increasingly effective and strong working relationships have been cultivated with the NGI Support Teams as well as with emerging VRCs. The biggest challenge has been the lack of funded end-user 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.

For PY2 of the project, three key areas of work have been planned:

- Stronger communication between the UCST and its customer base of NGIs, VRCs and individual researchers will enhance the impact and effectiveness of the collaborative efforts that EGI aims to promote.
- UCST will aim to make the NGIs aware of the services that are being put in place for them and to promote these such that it becomes the norm for NGI User Support Teams to use them.
- Development of the Technical Services for Users and Communities will underpin a growing take up by the many of solutions provided for the few – such as a 'Training Marketplace', the Applications Database and VO Services.

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