

EGI Community Projects

6th March 2013

1 Overview

Horizon 2020 will mark a new era for the European Grid Infrastructure as it continues its transition towards sustainability in its support of the European Research Area (<http://go.egi.eu/EGI2020>). With the community representation through the EGI Council, and with EGI.eu as a dedicated legal entity able to participate and lead in EC projects, there is an opportunity to strategically plan and focus the community's efforts to apply for EC funding. This paper identifies a set of strategic projects that can be led by EGI.eu or others in the EGI Community within a single strategic framework to develop activity in and around EGI. Strategic endorsement of a proposal by the EGI Council would require alignment and close integration of the funded project in EGI's activities and technical governance structures. Letter of support would not be provided therefore for proposals that did not provide such alignment. Proposals seeking such strategic endorsement would need to be prepared months in advance of any submission date.

1.1 EGI.eu as Coordinator

For EGI.eu to coordinate a project it needs to be strategically critical to EGI and the research communities it supports. The recent restructuring of DG-CONNECT has placed the e-Infrastructure unit in the 'Excellent Science' pillar indicates that future funding for e-Infrastructure will be dependent on it delivering excellent science which within Europe means the support of Research Infrastructures and ESFRI activities. The decision as to submit these proposals separately or as a single proposal is a tactical decision that can only be made once the call is published. However, the development around these proposals, the consortia and scope can start now.

1.2 EGI.eu as a partner

EGI.eu staff are skilled and experienced across many areas: operations, policy, communications, marketing, technology, user support and financial and project administration. For EGI.eu to engage as a partner in a project it must make strategic sense to the EGI Community (i.e. aligned to the EGI strategy), provide an opportunity for staff development at EGI.eu and have minimal cost impact to the participants of EGI.eu.

1.3 EGI.eu as a consumer

EGI.eu will benefit from the results of many EC projects that are submitted with no prior communication with EGI.eu and the EGI Community. EGI.eu can engage responsively with such projects through MoUs as required. One such example are the Virtual Research Environments (VREs) composed of research community specific services needed to access EGI's resources that are deployed within EGI and services operated by the research community or its agents to facilitate access to its distributed services. These VREs need to be tuned to the needs of different research communities – one VRE will not fit the needs of all research communities. EGI, through EGI.eu, can work with different research communities to facilitate the deployment of these services into EGI resource centres and to operate these distributed services reliably at scale. This will allow different research communities to be able to access the services they need, when they need them and where they need them.

2 Providing a Federated Distributed Resource Infrastructure for the European Research Area

Coordinator: EGI.eu (Tiziana Ferrari), **Duration:** 4 years

2.1 Purpose

EGI needs to technically evolve its production service to be a flexible and reconfigurable distributed federated infrastructure providing access to a heterogeneous set of resources such as computing, storage, data, desktop grids, and virtual environments.

To meet the needs of researchers in the European Research Area, EGI will provide alongside the core production infrastructure and software service, a human network for the provision of professional services and to collect, coordinate, respond to and promote the needs and activities of resource providers and researchers – especially those small to medium sized research groups and collaborations that represent the vast majority of researcher in the ERA.

2.2 Partners

EGI.eu, NGIs, Technical representatives from other Research infrastructures

2.3 Outline Project Structure

- **WP1 (NA): Management, Administration and Coordination**

This activity will provide project, technical and administrative management of the project to ensure its successful execution and to ensure that all its outputs are of high quality by delivering:

- Overall project management and reporting to the European Commission,
- Administrative support necessary through establishment of a Project Office,
- Technical management of the project,
- Quality assurance efforts to monitor the progress of the project against its defined metrics and management of the review process for deliverables and milestones.

This activity will be also responsible of supporting the governance function of the EGI Council and the EGI.eu Executive Board.

- **WP2 (NA) Growing the EGI Community**

This activity provides the marketing and communication team that can support the newsletters, community meetings, champions and NGI International Liaisons needed to promote EGI and its achievements, but also to build a human network to provide a source of requirements to develop the capability of the production infrastructure to attract and develop new users of the EGI platform and its services.

- **WP3 (NA): Community Engagement**

Community coordination includes coordination activity around the operation, deployment and use of the platforms being operated by EGI. This function will drives future development in the platform and support by making sure that the infrastructure evolves with the needs of the community and to support the integration of new resources and middleware platforms. It does this by providing coordination and management and by developing policies and procedures that are integrated into the production infrastructure through the support of distributed teams. This work package includes:

- Coordination of the EGI operations community (including security, service level management and infrastructure oversight) – those deploying the EGI platforms
- Coordination of the EGI platform community – those using and re-using the EGI platforms

- Coordination of Technical policies – how the platforms will be deployed and operated within EGI (e.g. SVG, CA trust anchor distribution)
 - Coordination of the EGI Core Platform software maintenance
 - Coordination of infrastructure integration and of development of agreements with other resource providers
 - Evolving the EGI Platforms by requirements gathering and technical roadmapping
- **WP4 (NA): Policy Development**
 The wider e-Infrastructure community, whether directly or indirectly involved with EGI, benefits from informed decisions being taken. A range of actors relies on insight and data to support both strategic and tactical decision-making. This includes EGI management trying to make informed decisions, a site administrator looking to understand the impact of developments on the infrastructure, technology providers looking for new opportunities, and project managers reviewing product roadmaps. All levels of the EGI ecosystem and partners trust EGI.eu to better understand the environment in which they operate. This activity is therefore dedicated to the development of strategies and policies within and external to EGI.eu in conjunction with EGI's stakeholders including EGI's strategic response and alignment to EU policy and EC initiatives, such as EU2020, the Digital Agenda and the online ERA.
 This activity is also responsible of the maintenance and development of the EGI service portfolio, of strategic metrics and the collection of information from the community through the EGI Compendium.
 - **WP5 (SA): EGI Core Infrastructure Platform**
 EGI's Core Infrastructure platform is provided to operate the national infrastructures that contribute resources to EGI, including the services needed to support a production federated cloud. The operation of these services is already sustained by EGI.eu and its partners through the EGI participation fees. This activity supports the evolution through requirements gathering and the integration of new capability across accounting, service registry, incident management tool, the message broker network, the monitoring infrastructure, the operations portal, security monitoring tools, and other support services that define the EGI Core Infrastructure Platform.
 - **WP6 (SA): Technical Outreach**
 Building upon a core team at EGI.eu, the current virtual team model will be extended to include a funded model by having a pool of funds that can be allocated through open calls and peer review to meet the needs of the EGI Community. Such funds would allow integration activities between EGI and research infrastructures to be funded as needs are identified by those best placed to do it. This work could include integrating services from EGI platforms with those coming from new user communities or to facilitate the deployment and integration of their applications and workflows onto EGI resources.
 - **WP7 (JRA): Integrating a Federated Cloud**
 EGI's strategic future is in providing a federated production quality distributed computing and data infrastructure that can provide a 'self-service' capability to research groups large and small within the ERA. This requires that the institutional private clouds from the public sector within EGI (and elsewhere) and the public commercial clouds that can provide additional capacity and capability be integrated with EGI's operational tools to provide a scalable management infrastructure. The focus here is on innovative integration to provide a service.

3 Innovation in EGIs Operational Tools

Coordinator: EGI.eu (Peter Solgana), **Duration:** 2 years

3.1 Purpose

Distributed infrastructures require an operational framework to aggregate the information gathered from multiple geographically and administratively distributed sources, and to support procedures and daily activities.

The European ICT projects (EGI, PRACE, EUDAT) have been developing and deploying independent sets of operations tools. EGI has years of experience in developing and using operational tools for an extremely distributed environment. EUDAT, PRACE and other projects have similar requirements (and sometimes even deploy/adapt tools to meet similar use cases) and goals that can be achieved by extending the tools currently available.

The main purpose of this project is to rationalise the current set of operational tools used by the European ICT projects, to provide an integrated set of tools, and to support the key technologies for the evolution of the infrastructure. The integration of the operations frameworks is beneficial for both the service providers participating to multiple projects, and user communities consuming services from different infrastructures. Depending on the requirements collected among the different infrastructures participating to the project, and their users, there can be two different levels of integration:

- a) A tool already implementing the use case of one infrastructure is extended to meet the requirements of the other ones. This is the ideal scenario where the level of integration is higher.
- b) Due to non-overlapping requirements, or different technologies already widely deployed across the infrastructures, different infrastructures continue to deploy different tools to implement similar use cases. In this scenario, the integration – based on the specific needs – can be implemented exchanging the data between the different tools or providing common visualization tools to the user communities or operations teams.

3.2 Partners

Current EGI Operational Tool providers (EGI-InSPIRE JRA1 partners) and representatives from the Operational Tool consumers in EGI (provided by EGI.eu) and EUDAT, PRACE and other applied Research Infrastructure (e.g. EPOS, LifeWatch, ELIXIR, etc.).

3.3 Outline Project Structure

- **WP1 (NA): Management, Administration and Coordination**
Provide the project coordination and administration needed for the project, including technical liaison and with EGI's technical governance structures. This work would include the promotion of the project within its technical community and other stakeholders.
- **WP2 (NA): Requirements**
Collection and prioritisation of requirements from the e-Infrastructures and Research Infrastructures that are consuming the operational tools from the project, (e.g. EGI, EUDAT, PRACE, ...) into a technical architecture and public roadmap.
- **WP3 (SA): Integration**
Operate a development testbed that will allow functional verification and scaling tests of the integrated services developed within the project to take place.
- **WP4 (JRA): Messaging**

Ensuring the integration and packaging of the scalable messaging infrastructure used by the operational tools.

- **WP5 (JRA): Monitoring**
 - Development and integration of the probes to include new resource types (e.g. EUDAT resources or cloud resources)
 - Database infrastructure and availability reporting through a web portal
- **WP6 (JRA): Accounting**
 - Accounting repository
 - Exchange of accounting data between resource infrastructures
 - Integration with resource providers, extension of the accounting information to achieve the goals of RP and user communities (storage, cloud resources)
 - Accounting portal
 - Integrated visualization tools for user communities using multiple resource infrastructures (e.g widgets to be included in VRE portals)
- **WP7 (JRA): Operations Portal**
 - Presentation framework and back end data collection framework
 - Customisable views for resource providers and research communities
 - Extension to present multiple types of data (e.g. availability of the services relevant for a user community)
- **WP8 (JRA): Helpdesk**
 - Integration of the existing helpdesk systems
 - Extension of the helpdesk tools to widgets to be integrated into VRE portals
- **WP9 (JRA): Services registry (GOCDB)**
 - Database and user interface
 - Extension to serve multiple infrastructure
- **WP10 (JRA): Security**

Development of tools needed to report and identify the software deployed in production infrastructures and any vulnerability they might contain.

4 Collaborative Data Infrastructure Platform for the European Research Area

Coordinator: EGI.eu (Gergely Sipos), **Duration:** 3 years

4.1 Purpose

The project will support the development and provision of common centrally provided, reliable, scalable and customisable services that deliver the seamless functional capability needed by different international research collaborations to fully exploit the services coming from different Research Infrastructures and e-Infrastructures across a variety of different use cases and scientific disciplines. This project addresses the objectives defined in the data e-Infrastructure track of Horizon 2020:

Objectives of this project are:

- **An open interoperable e-infrastructure for scientific data:** data access, replication, transfer, annotation and searching, and data analysis are functions that need to be enabled across the border of different e-Infrastructures. These capabilities need to rely on standards and interoperability solutions that facilitate the adaptation of existing community platforms to the services provided by the resource infrastructures. The requirements of research infrastructures will be gathered, common interfaces will be identified and adopted by the resource infrastructures. The project will support the adaptation/integration of the identified components (from the EGI Core Infrastructure Platform and other service platforms) to be provided by the Research Infrastructures and e-Infrastructures, and the porting of the identified community platforms to these common technical services.
- **Reduce the fragmentation of research data infrastructures:** scientific data not only needs to be open, searchable and easily accessible, but needs services that provide storage solutions which allow staging of data to compute infrastructures (HPC and HTC) for data analysis. The project will support the integration of data and compute services, ensuring that users access resources through an interoperable core infrastructure platform that allows user identification, authentication and authorization across domain specific data infrastructures and resource infrastructures like EGI, EUDAT and PRACE.
- **Open data e-Infrastructures:** The project will ensure that emerging disciplinary standards are adopted by community platforms (community service architectures), and that user requirements are regularly collected, identified and prioritized, and provided to technology providers of common data services.

These services will be integrated into community specific Virtual Research Environments (VREs) to ensure maximal ease of use to the average researcher within the ERA. The services will provide a foundation platform that enables collaboration among researchers and between different research communities – especially the long-tail of medium to small research communities their services and their data.

4.2 Partners

Scientific and technical representatives from ESRFI, VRC and other user communities.

Service provider and developer representatives from the Infrastructures (EGI, EUDAT, PRACE).

4.3 Outline Project Structure

- **WP1 (NA) – Management, Administration and Coordination**
Project coordination and administration. Technical liaison and with EGI's technical governance structures.
- **WP2 (NA): Marketing, Communication and Training**

This activity provides the marketing and communication team needed to promote the activity within the project and more importantly to the scientific communities within the ERA. This will be driven by identifying which research communities will be impacted by the use cases being demonstrated by the project and marketing the availability and impact of these services to these groups. Part of the technical marketing activity is the development and delivery of training courses at events within the research infrastructure community and promotes their existence and capability to potential users.

- **WP3 (NA): Use cases**

This activity is responsible of collecting use cases and requirements from user communities requiring an interoperable and integrated data infrastructure and the available functional services across EGI, EUDAT and PRACE. This activity is driven by the core user communities that are partners of the project, but is open and extends to any emerging data research infrastructures requiring the establishment of an integrated data infrastructure. Requirements are collected and prioritized identifying where, to deliver a particular use case, changes are needed in the basic common Distributed Computing and Data Infrastructure Platform (requiring technical innovation by the appropriate technology provider) and where integration and customisation of the services within the basic common DCDI platform are needed to meet the needs of the use case.

- **WP4 (JRA): Basic DCDI Platform Enhancements**

Provide a compact, but flexible and extendable community platform that builds upon EGI's Core Infrastructure and/or Cloud Platforms and the services coming from other Research Infrastructure or e-Infrastructure providers. The community platform should provide a 'vanilla environment', a basic set of services that a common to the scientific communities who participate in the project, and that enable these communities to utilise the DCDI sites that are federated into EGI, and possibly sites that belong to other DCDIs (e.g. OSG, EUDAT, PRACE, local sites, commercial clouds).

- **WP5 (SA): Customised VREs**

The common data services identified and prototyped in the project, to which user community platforms will be integrated with, will be tested in a series of pilot activities to establish customised VREs for a particular community. These VREs will be put into production together with the user environments needed by researches to make use of the data infrastructure. This activity also provides the necessary extensions to the operations tools, policies and procedures to integrate the data infrastructure with the computing infrastructure of EGI and PRACE. This work package would build community-specific VREs to meet the needs of the use cases for each of the involved communities, building services on top of the vanilla platform. Candidate communities:

- ELIXIR (work ongoing in EGI-InSPIRE VT)
- EISCAT-3D & EuroArgo (work ongoing in ENVRI study case)
- CTA (work ongoing in EGI-InSPIRE VT)
- Computational Chemistry and Material Sciences (work ongoing in EGI-InSPIRE VT)
- EPOS, VPH (work ongoing in EGI-EUDAT-PRACE pilots)
- ???? Can NILs recommend some ESFRI project with technical collaboration ongoing?
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- **WP6 (SA): Collaboration services**

This activity will provide for the development and provisioning of collaborative services that can be seamlessly integrated into the community-specific VREs. These services enhance the efficiency of the community by facilitating exchange of and user experiences that are common to all and to serve the uptake of the community-specific VREs. The services are envisaged as extended, and centrally provided versions of the following EGI services:

- Training Marketplace: a registry to advertise and to view (browse and search) training events, online training materials, training resources and university courses.
- Applications Database: a software registry and repository that provides information about customised VREs and VRE components; VRE developers and users; ratings, comments, publications and other type of items that help visitors assess the 'quality' of the registered software.

Additional non-functional services needed by the user communities will be identified from the collected use cases.

- **WP7 (JRA): Integration with identity federations**

Researching and setting up a framework for integrating identity federations of the ERA with the community specific VREs that provide access to EGI's production infrastructure. The framework would act as a bridge between identity federations and the EGI Core and Cloud Infrastructure platforms and would translate the user identities of the identity federation to X509 certificates that are accepted in EGI's infrastructure VOs.

- **WP8 (SA): Software services and platforms**

EGI supports national infrastructures and user communities with the distribution software - the Unified Middleware Distribution (UMD) - that facilitates the deployment of integrated platforms, community platforms, and software that is freely contributed by the community. This activity will build on the EGI experience of delivering UMD and extend the distribution and quality assurance model to support other e-Infrastructures and Research Infrastructure technology providers. UMD is provided according to the requirements of the user community, leverages on community software development efforts by making new functionality available to the infrastructure providers and the users. This activity takes care of ensuring that UMD integrated software adheres to EGI quality criteria, and is responsible for its validation and verification.

5 Promoting Research Results from using DCDIs within the ERA

Coordinator: Catherine Gater, **Duration:** 3 years

5.1 Purpose

e-ScienceTalk has brought the success stories of Europe's e-infrastructures to a wider audience. The project enhanced the value of research infrastructures by reporting their results in print and online. With a varied skill set, the team also provided a host of services to EC projects and RIs, from creating video and design consultation to feature writing and promotion of events. A follow on project funded under Horizon2020 is now planned.

To showcase the research outcomes from e-science and big data coming out of Europe's Distributed Computing and Data Infrastructures (both e-Infrastructures and Research Infrastructures). The project will highlight success stories through a regular online publication, iSGTW, websites such as e-ScienceCity, blogs, social media channels and a virtual world. The channels will be informed and supported by establishing a network of e-science ambassadors across Europe who will go behind the scenes at events to communicate the impact of e-infrastructures to researchers in the 'long tail' of science, in Europe and beyond. In order to build human capital, the project will also provide specialist communications and marketing training to the ambassadors and to members of both Research Infrastructures and e-Infrastructures projects. The policy and impact team will produce policy briefings aimed at DCDI stakeholders on key community issues and will communicate the possibilities presented by the infrastructures for academia, RIs and industry.

5.2 Partners

CERN, QMUL, APO, EGI.eu, Imperial.

5.3 Outline Project Structure

- **WP1 (NA): Management**
This workpackage will coordinate the management of the project. The project will be overseen by a Project Management Board, consisting of the Project Manager and representatives from each of the partners. The quality and progress of the project will be controlled by monitoring the metrics, conducting surveys and by gathering feedback from delegates at conferences.
- **WP2 (NA): Training**
This workpackage will also run a series of training workshops, based at key community events, on communication skills such as media outreach, videoing and science writing. These will be aimed at enhancing the human capital of the ambassadors and also other members of the communities, for example within the RIs.
- **WP3 (NA): Policy briefings and impact**
With the advent of H2020, there is a strong need for reporting that is targeted at policy makers in science and business to illustrate the scientific results and impacts from grid, distributed and high performance computing, networks, clouds, data infrastructures and RIs. These briefings will interpret EC policy documents and reports in an accessible and attractive format, available in print and online. These short, full-colour policy articles will illustrate the scientific results and impacts for a non-technical audience and demonstrate how long-term investments and new innovative EC funding instruments are leading to concrete results. Additionally, this work package will assess the impact of longer running products and explore possibilities for their sustainability.
- **WP4 (NA): iSGTW**
iSGTW is a free weekly online newsletter that promotes e-science and big data around the world by sharing stories of e-Infrastructure empowered science and scientific discoveries. Now reaching over

8700 readers in more than 195 countries and territories, it is an international publication by nature, funded jointly by the National Science Foundation in the US and the project in Europe, with an Editor in Chief based at CERN, a US-based Desk Editor at Indiana University, as well as several contributing writers worldwide, including special correspondents from the Asia Pacific region. The workpackage will aim to widen the collaboration to Latin America and Africa, and will build on its substantial social media impact, including media partnerships at key community events such as ISC, ISC in the cloud and XSEDE.

- **WP5 (NA): Websites, blogs and virtual worlds**

The workpackage will extend the e-ScienceCity website to keep it at the cutting edge of e-science dissemination and will add interactive materials. It will also continue the blog site. The virtual world for e-ScienceCity will be expanded with new in world collaborations and events. This workpackage will also provide all design and marketing materials for the project.

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6 Ensuring national cohesion within the European Grid Infrastructure

Coordinator: EGI.eu (TBC) **Duration:** 2 years

6.1 Purpose

The maturity of NGIs varies greatly, which is a result of a number of different factors such as national policies, funding, organisation and experience. For EGI to continue its long-term sustainability strategy, the NGIs must not only continue to grow and mature individually, but retain the cohesion necessary to maintain a pan-European infrastructure. Therefore, the goal of this project is to invest in the organisational, policy and technical development of the NGIs.

Specific goals of the project are to:

- Develop the human capital within the NGIs through dedicated training on organisational, policy and technical managerial aspects.
- Increase the maturity of NGIs across Europe to facilitate long-term sustainability through a common model based on best practices.

6.2 Partners

EGI.eu and relevant technical service providers, e.g. ETL (Emergence Tech Limited) and LMU (Ludwig Maximilian University of Munich) for WP5. A centrally managed budget would support NGI staff travel and subsistence at training events.

6.3 Outline Project Structure

- **WP1 (NA): Management, Administration and Coordination**

The objectives of this WP is to provide the technical management of the project to ensure project objectives are reached in a timely manner with high quality, as well as provide the project office funding for finance and administration responsibilities.

T1.1: Project Coordination

T1.2: Finance and Administration

- **WP2 (NA): Training**

The objective of this work package is to develop the human capital within the NGI's, in particular the functions of NGI International Liaisons, Champions and NGI Operations Managers. This will be achieved by organising dedicated regional training events or co-located with larger events such as the EGI Forum. Training would cover technical and nontechnical issues with all material being made openly available.

T2.1: Material Development

This task should collate all of the necessary material required for NGI personnel to effectively carry out the work. It is possible that currently available material will need to be updated or is missing and will have to be developed within the project or through external collaborations. The material will be focused on improving the management and technical skills needed to build high quality human capital within the NGIs in order to improve their effectiveness and boost NGIs capacity development. This requires development of training schemes to improve management and leadership skills for the management of NGIs, support of curricula development and recognition of new jobs and careers within NGIs and development of HR guidelines for NGIs.

T2.2: Organisation of Training Events

Organisation of training events requires dedicated effort in all logistical and organisational support. (e.g. catering, venue, online content, invitations, participant liaison, coordination trainers, trainer attendance, ...)

- **WP3 (NA): Champions**

The objective of this work package is to establish a network of champions within the supported regions that will engage with local activities using knowledge gained through secondments with other NGIs.

T3.1: Champion Management and Support

This task is build the network and provide the required support for organizing, finding, managing and following up with the Champions themselves.

T3.2: Event Participation

This task is dedicated to the participation of Champions are external events.

T3.3: Customer Relationship Management

This task is designed to allow the champions to follow the researchers from contact, through the various channels as they navigate EGI internal processes, and then follow up to gain key insight into the pros and cons that feed back into EGI Mgt.

- **WP4 (NA): Policy and Management Development**

The objective of this work package is to support to the leadership of the NGI in growing their NGI through dissemination of best practices and use cases, including open collaboration repositories of best practices.

T4.1: Alignment of national/NGIs policies

In cases identified during the project by project partners it will make sense to align some of the national policies relating to operations, software quality, security, pay-for-use, user communities and general governance.

T4.2: EGI Compendium

EGI-InSPIRE created the first knowledge base for the EGI Community that provided a baseline time series on an annual basis. Completion of the Compendium can be time consuming and require multiple personnel from different departments to complete, therefore this task provides the support for the NGIs to complete the Compendium and help build a representative picture of activity across EGI.

- **WP5 (SA): NGI Maturity Model**

NGI's have been set up in the recent years to manage a federated infrastructure at national level and to integrate at the European level and worldwide. While each NGI has its own characteristics, there is a set of functions that is common to all. Furthermore, the maturity and consolidation of NGI's happen at different speed depending on the available resources and expertise.

The goal of this work package is to:

- Define the common set of requirements for processes that each NGI should have in place
- Define an assessment framework to measure the implementation maturity of each process
- Apply the assessment framework to each NGI through a defined implementation plan to increase the maturity

The work will be based on common standards for governance (e.g. CoBIT) and service management (e.g. ITIL/ISO20000) and will reuse the work from the FedSM project (www.fedsm.eu). The outcome will be a maturity model and assessment framework for NGIs as well as individual implementation plans to increase maturity at the organisational level and improve the cohesion of the EGI partnership.

- T5.1: Common Requirements Definition
- T5.2: NGI Assessment Framework
- T5.3: Increased Maturity Implementation

7 Worldwide Integration

Coordinator: EGI.eu (TBC). **Duration:** 2 years

7.1 Purpose

A key assumption in the ERA is that researchers in Europe will collaborate with researchers around the world. This means that the availability of similar interoperable services and the alignment of policies need to be assured across the whole of Europe and its partner countries. This project would focus on identifying and developing the missing links between e-Infrastructures across the world. The objectives of this project directly support the European Union's Innovation Union by actively fostering the move towards global distributed computing infrastructure. This work will complement ongoing activities in the area such as CHAIN-REDS for Latin America.

The overall goal of the project is **to harmonize e-Infrastructures towards a global infrastructure ensuring researchers and research collaborations worldwide can seamlessly work together.**

"The European Union should step up its cooperation on the roll-out of the global research infrastructures. By 2012, agreement should be reached with international partners on the development of research infrastructures which owing to cost and/or complexity, can only be developed on a global scale."

--Innovation Union commitment text

7.2 Partners

EGI.eu, XSEDE (reps), CHAIN-REDS (reps), Asia-Pacific (reps) ...

7.3 Outline Project Structure:

- **WP1 (NA): Management, Administration and Coordination**

The objectives of this activity is two-fold: coordination and administration of the project and technical liaison between governance structures.

T1.1: Project Coordination and Administration

All projects, big and small, require guidance, leadership and management of overall activities to ensure that project objectives are achieved with the highest quality and in a timely manner. This task is designed to provide the necessary effort in overall project management, project finance and administration matters. This is includes the project office, finance and legal department, and director function.

T1.2: Technical Liaison between Governance Structures

The manner in which publicly funded e-Infrastructures have been built vary greatly not only in Europe, but worldwide. With it, comes different organizational and governance structures. These can be very complex and would require effort to ensure that decisions made and technical liaison takes into consideration the different structures and procedures between the organizations and infrastructures. This task would clarify how the management bodies will interact with the various governance structures.

- **WP2 (NA): Marketing and Outreach**

Communication will be an essential tool when working on a global scale. Messages will need to be tailored to individual regions as well as coordination of overall messaging and material. This WP will cover overall marketing such as promotional material, website development and web content, social media, and copywriting. Given the geographic distribution of project partners, online conference facilities will be heavily relied upon for carrying out the day-to-day activities, but face-to-face workshops will still be essential for not only project management, but more importantly for community building. To ensure coverage, a dedicated workshop will be held on a biannual basis rotating between continental regions. Where possible, these workshop will be held in conjunction with the largest scientific community event in the region. The WP also covers the presence of project members at external events aligned with the communications and marketing activities. This includes the effort required in obtaining presentations or booth at external events, preparation and attendance.

T2.1: Communications Strategy and Messaging

T2.2: Web presence

T2.3: Promotional Material and Publications

T2.4: Project Workshops and External Events

- **WP3 (NA): Service Management and Policy Alignment**

For more than a decade, e-Infrastructures have been developing processes, policies and procedures for managing the lifecycle of services offered to researchers. The goals of this work package are to:

- Analyse the service management processes in use in the various infrastructures, identify those that have an external impact and define a roadmap for integration
- Analyse the technical and organisational policies and procedures in use in the various infrastructure and to ensure harmonisation to simplify worldwide process integration.

The WP can set up dedicated working groups focused on different policy areas.

T3.1: Policy Mapping

T3.2: Policy Alignment and Development

T3.3: Service Management Integration

- **WP4 (NA): Technical Interoperability**

Each e-Infrastructure has been built using different technologies and solutions. There are ongoing efforts to increase integration and interoperation, but often on a best effort basis. The complexity of these issues requires dedicated working groups to solve the technical issues in providing the missing links that stop researchers and research collaborations across the globe from seamlessly using multiple or moving between infrastructures.

T4.1: Architecture Analysis

The goal of this task is to analyse and document the architectures used between the major infrastructures and to support the setup and coordination of working groups to investigate specific aspects of the operational infrastructure that need changes to enable interoperation/integration.

T4.2: Standards Implementation

The adoption of open standards is key to enable the integration of independent systems and to maintain an open ecosystem. In collaboration with T1.1, this task will identify priorities for standards adoption in the technical interfaces that need integration across infrastructures. Work will be devoted to the implementation and testing. Ultimately, this task should define a viable and sustainable model to gather distributed resources from regions all over the world to get a truly global e-Infrastructure, yet respecting local specificities and exploiting competences of all participating organisations.

T4.3: Scientific Gateways

Scientific Gateways have proven to be an effective way of integrating different systems and technologies from a user perspective. They enable community members to define and perform custom research scenarios and can hide the complexities of distributed infrastructures from researchers, therefore several communities build or would like to build science gateways for their members. However, identifying the right set of technologies from this set, collecting and applying best practices and solutions to have a science domain specific gateway can be still a difficult task for some. The objective of this task is to harmonise activities among the partners so that scientific gateways can interact with a larger number of infrastructures.

T4.4: Common Use Cases

The use of e-Infrastructures is expanding in number of users, amount of data, and number of scientific disciplines. Identifying common use cases, would not only demonstrate the value of the infrastructures and reinforce the arguments in support for researchers to use the infrastructure and for funders to support the coordinating organisations but also to identify common ways the infrastructures are being used in order to maximise its efficiency in those areas.

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8 An ERIC for supporting Digital Research Infrastructures

Coordinator: EGI.eu (TBC), **Duration:** 2 years

8.1 Purpose

A preparatory project to explore the legal, governance and technical issues of achieving greater integration of established and emerging European e-Infrastructures and their coordination bodies such as EGI, PRACE, TERENA, DANTE, EUDAT, e-IRG, etc.

8.2 Partners

8.3 Outline Project Structure

- WP1 (NA): Management, Administration and Coordination: Project coordination and administration.
- WP2 (NA): Legal Issues:
- WP3 (NA): Technical Alignment Issues:
- WP4 (NA): Governance Issues:
- WP5 (NA): Dissemination:

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