EGI-Engage

Communications, Dissemination and Engagement Strategy

D2.1

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Abstract

This document presents the communication, dissemination and engagement strategy for the EGI-Engage project. It includes material, channels, target audience, and strategic topics as well as initial implementation plans.

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DELIVERY SLIP

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TERMINOLOGY

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

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Executive summary

This document presents the Communication, Dissemination and Engagement strategy for the EGI-Engage project. Communications, Dissemination and Engagement are three interlinked activities directly related with the human dimension of the EGI-Engage project. These activities transcend the EGI-Engage project itself and exist in the context of the overarching goal to serve the EGI federation.

The **Communications** activity will manage the communication between the members of the consortium and corporate (external) image of the EGI-Engage project. The internal communication activities aim to strengthen the ties between the EGI-Engage stakeholders as a way to promote synergies and build a sense of appreciation for the community itself. The external communications will focus on supporting the Engagement and Dissemination activities by opening the successes and outputs of the project to potential new stakeholders, such as new user communities, new resource infrastructure providers or new industry partners. Communication channels for both activities are described. EGI events and participation in external events are also outlined in this chapter.

Dissemination concerns the activities related to the public disclosure of the project results within their intended audiences. The chapter starts by outlining expected results grouped into five categories: Technical input to standards, Policy & procedure developments, Software & service innovation, Business model innovation, and Know-how. Each grouping of results can be linked to intended targets, or audiences. The chapter continues by defining a dissemination strategy per type of result, using established communication channels.

Engagement concerns the technical outreach to potential new communities and supporting them to become active and self-sufficient users of EGI solutions. Engagement is a key activity in EGI-Engage. The goals are to identifying target groups, reach out to communities about ICT technologies and capture requirements, help these communities tackle scientific challenges with the use of existing EGI solutions, support scientific communities and act as a meeting point where information and experiences relating to e-infrastructure application and adaptation can be shared.

The chapter outlines the target groups (Research Infrastructures and FET Flagships, Research Collaborations, the long tail of science and SMEs and industry) and defines the engagement blueprint, a process that integrates the outreach, scoping and implementation phases into a unified workflow. The Engagement chapter also outlines the plans for the June 2015 – April 2016 period, developed in consultation with the NGIs.

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1 Introduction

Communications, Dissemination and Engagement are three interlinked activities directly related with the human dimension of the EGI-Engage project. These activities transcend the EGI-Engage project itself and exist in the context of the overarching goal to serve the EGI federation.

The distinction between these three non-technical 'branches' of the project is sometimes blurred, as Communications, Dissemination and Engagement share many goals and their definitions seem to vary slightly across the European landscape. In the context of the EGI-Engage project, these activities are defined as follows:

A) Communications[1] concerns internal communications between the members of the consortium and corporate (external) image of the EGI-Engage project.

In practice, this activity, described in section 2, will:

*   Maintain the EGI brand.
*   Manage the EGI-Engage communications channels (e.g.: website, director's letters, newsletter, blog, newsfeed), to strengthen the EGI-Engage community and maximise both cooperation and synergies. Ensure that the members of the project are aware of what the rest of the team is doing. Organise the EGI-Engage events, where stakeholders can meet with other actors in the e-Infrastructure landscape.
*   Support the Engagement and Dissemination activities through the project's communication channels. The communications' contribution to these activities is also described in the Engagement and Dissemination chapters.

B) Dissemination[2] concerns the activities related to the public disclosure of the project results within their intended audiences.

In practice, this activity, described in section 3, will:

*   Establish a dissemination plan for each type of project result (e.g. standards, know-how).
*   Manage the data produced during the project.
*   Curate a database with the Scientific Publications produced in relation with the project.
*   Define a licensing scheme that guarantees that the software developed in the project remains open source.

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[1] EGI-Engage Grant Agreement article 38.1 "Communication activities by beneficiaries": The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.

[2] Article 2.8 "Rules for Participation and Dissemination in Horizon 2020: 'dissemination' means the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium; https://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1595113-h2020-rules-participation_oj_en.pdf
EGI-Engage Grant Agreement article 29 "Unless it goes against their legitimate interests, each beneficiary must — as soon as possible — 'disseminate' its results by disclosing them to the public by appropriate means (other than those" resulting from protecting or exploiting the results), including in scientific publications (in any medium).

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C) Engagement concerns the technical outreach to potential new communities and supporting them to become active and self-sufficient users of EGI solutions.

In practice, this activity, described in section 4, will:

- Identify the target groups for the outreach activity (Research Infrastructures, research collaborations, long tail of science, SMEs and industry).
- Take the initial outreach steps towards the target groups.
- Work together with the target groups to collect technical requirements and constraints in order to scope possible solutions.
- Implement a technical integration project based on a plan endorsed by the target group.

An example

The Communications Team writes an article about applications of Computing Platform X to scientific field A. This article is written in conjunction with the engagement team to ensure that it depicts correctly the technical capabilities of Platform X.

The Technical Outreach Team travels to an event where they meet scientists from group B from field A and given them the article to read, as an example of what EGI's computing services can do for science. Group B becomes interested and over the next few months, the Technical Outreach works together with them to come up with a plan to adapt Platform X to their needs. A Platform Y is created in result.

The Dissemination activity advises on the license that should be applied to Platform Y, ensures that all publications resulting from this collaboration are openly accessible and recommends this use case to the Communications Team.

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2 Communications Strategy

The communication activities of EGI-Engage will build on the added values, lessons learned and relationships established during the previous EGI-InSPIRE project. The communications objectives of EGI-Engage are:

- **Corporate image**: maintain the EGI brand.
- **Internal communications**: manage the EGI-Engage communications channels (e.g.: website, director's letters, newsletter, blog, newsfeed), to strengthen the EGI-Engage community and maximise both cooperation and synergies. Ensure that the members of the project are aware of what the rest of the team is doing.
- **External communications**: support the Engagement and Dissemination activities through the project's communication channels. The communications' contribution to these activities is also described in the Engagement and Dissemination chapters.
- **Events**: organise the EGI-Engage events, where stakeholders can meet with other actors in the e-Infrastructure landscape.

2.1 Corporate image

The EGI-Engage image is closely linked to the branding developed for EGI. No dedicated design or brand will be created exclusively for project use. The reasons for this are:

- To avoid diluting the image of EGI (as an e-infrastructure and as a community), and
- Because EGI-Engage, and especially its communication activities, exist to serve the EGI federation, not the project itself.

This approach follows the communication strategy implemented during the EGI-InSPIRE project.

Web presence

a) **Public facing:** Like its predecessor, EGI-Engage's public-facing web presence[3] is part of the EGI website, where it is accessible from the Homepage and under menu about. These pages provide a summary of the project, its activities and participants.
b) **For the consortium:** Detailed information about the project, including for example workspaces for work packages or technical information, is hosted by the EGI wiki, under the EGI-Engage namespace[4].

Logo

The project will use an adapted version of the EGI logo, updated with the project title.

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[3] http://www.egi.eu/about/egi-engage/index.html
[4] https://wiki.egi.eu/wiki/EGI-Engage:Main_Page

Templates

The project participants will use standardised templates for presentations and posters. These templates are downloadable from the EGI website[5].

2.2 Internal and external communications activities

The internal communication activities aim to strengthen the ties between the EGI-Engage stakeholders as a way to promote synergies and build a sense of appreciation for the community itself. The key to accomplish this goal is to maintain efficient communication channels open between all the parties, including the members of the consortium, user communities, resource providers and competence centres.

The external communications will focus on supporting the Engagement and Dissemination activities by opening the successes and outputs of the project to potential new stakeholders, such as new user communities, new resource infrastructure providers or new industry partners. This will be accomplished through targeted documentation, posters and other publications produced in consultation with the other WP for specific goals.

EGI-Engage will rely on the EGI communication channels established during the EGI-InSPIRE project. They are described below, together with the communications activities associated to them.

2.2.1 Website

The EGI website[6] is a repository of information with sections targeted to researchers, policy makers, the EGI community and the general public. It will be redeveloped over the course of EGI-Engage to target audiences more efficiently. The website hosts:

a) EGI Blog[7]

The blog will be used by the community as an informal platform to discuss and disseminate information about their work. It will enable collaboration and sharing of ideas outside meeting and provide a place to put technical information for easy sharing.

The Communications Team will regularly invite members of the consortium and the EGI.eu staff to contribute to the blog.

b) EGI Newsfeed[8]

The newsfeed is frequently updated with information focusing not only on EGI-related activities, but also on the successes and achievements of the NGIs and other EGI-Engage participants. The news feed can be syndicated by partners on their websites.

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[5] http://www.egi.eu/about/logo_templates/index.html
[6] http://www.egi.eu
[7] http://www.egi.eu/blog/
[8] http://www.egi.eu/news-and-media/newsfeed/

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The Communications Team will use the newsfeed to report the project's activities and outcomes.

c) Case studies[9]

Case studies are articles based on scientific results reported in peer-reviewed papers, highlighting the benefits of EGI's services and solutions to the ERA.

During the EGI-Engage project, the case studies will be expanded to include dissemination of the Competence Centre achievements and Engagement success stories.

d) *Inspired* newsletter[10]

Inspired, the EGI quarterly newsletter focuses on the EGI community and is a channel to report outcomes, initiatives, plans and opinions from the community.

At the start of the EGI-Engage project, the Communications Team updated the editorial focus to include the Competence Centres as target groups and report specifically the project's outcomes.

e) Director's letters

The information conveyed through the blog, newsfeed and newsletter will be complemented by regular director's letters, a lightweight communication from the EGI-Engage Project Director on strategy, policy and future plans for the project.

2.2.2 EGI publications

EGI regularly publishes communications materials targeted at its audiences, specifically at research communities (from Research Infrastructures to the long tail of science) and policy makers. The content of the publications (e.g. leaflets, posters, reports, presentation) is tailored in collaboration with the work packages and Research Champions to ensure maximum dissemination impact. During EGI-Engage, EGI will produce the following types of publications to reach the target audience.

Type	Title	Purpose	Target Audience
Presentations	EGI-Engage presentations	To provide a standardised overview of the project.	Tailored
Leaflets	EGI Operational Tools	To provide an overview of the capabilities of each Operational Tool.	Research Infrastructures and large research collaborations
Leaflets	EGI Solutions (updated)	To provide an overview of the computing and data solutions offered by EGI.	Research Infrastructures and large research collaborations
Brochure	EGI Case Studies	A collection of the EGI Case Studies published during the	Policy makers and the research community

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[9] http://www.egi.eu/case-studies/
[10] http://www.egi.eu/news-and-media/newsletters/

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		project. Based on the previous Case Studies publication[11].	
Brochures	EGI Applications	To use in engagement activities, for distribution at events and online. Based on the model established with the help of the EGI Champions and exemplified by the Applications for Biophysics brochure[12].	Long tail of science
Brochure	EGI Brochure	To provide an overview of EGI, what it is and what has to offer. Based on previous editions[13].	General
Brochure	Open Science Commons	To provide an overview of the Open Science Commons vision.	Everyone with an interest in Open Science, specifically policy makers
Brochure	The EGI Federated Cloud	To provide an overview of the EGI Federated Cloud. The brochure will be published in two versions.	One for prospective infrastructure providers One aimed at potential users
Brochure	EGI Strategy	To provide a public version of the EGI strategy for 2020.	Participants of the EGI.eu foundation and to support providing clarity to external stakeholders
Brochure	EGI impact indicators	To provide a number of qualitative and quantitative indicators to assess the impact of EGI. They are instrumental to support the communication of the EGI value and impact through the various communication channels.	Key stakeholders: NGIs/EIROs, resource and technology providers, users, policy makers

The Communications Team will collect metrics (namely number of clicks in key links embedded in the publications) to monitor their usage.

2.2.3 External publications

EGI has an extensive network of partners in all corners of the e-Infrastructure landscape, from policy organisations (e.g. e-IRG, RDA), to peer infrastructures (e.g. OGF), Research Infrastructures (e.g. the GÉANT Association) and user communities. Most of these actors run their own

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[11] http://www.egi.eu/news-and-media/publications/EGI_Case_studies.pdf
[12] http://www.egi.eu/news-and-media/EGI_Biophysics_web.pdf
[13] http://www.egi.eu/news-and-media/EGIbrochure_web.pdf

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communication channels, including websites, blogs, newsfeeds and newsletters. For the purposes of EGI-Engage, these are considered 'External publications'.

During EGI-Engage, the Communications Team will actively pitch ideas and submit articles to partners' communication channels as means of disseminating the project's results and outcomes. This is an activity that has proved very useful during EGI-InSPIRE and that will be further explored. To this effect, the Communications Team will compile a list of publications and outlets likely to be of interest to dissemination and engagement activities match it against objectives and deploy these channels for the project's purposes.

2.3 Events

Events are a major component of the communications, engagement and dissemination activities for EGI-Engage. As described in the proposal and outlined below, the events activities can be subdivided into events organised by EGI under EGI-Engage and participation of the EGI.eu Communications Team in external events.

2.3.1 EGI-Engage events

Historically, EGI organised two flagship events a year – the EGI Technical Forums in the autumn and the EGI Community Forums in the spring. In EGI-Engage, the re-scoping of activities away from technical development and operational aspects has led to a readjustment of the EGI events calendar.

During EGI-Engage, the EGI events will be organised (as before) in cooperation with a local NGI who takes the lead on the logistical aspects of the event with support from the EGI.eu Communications Team. The EGI.eu Technical Director retains the responsibility of chairing the Programme Committee and steering the event's scientific themes and goals. EGI events will be focused on research communities, in line with the project's strong commitment to user-facing activities. Throughout the duration of the project, four EGI events will be organised:

- **EGI Conference 2015** in Lisbon (18-22 May)
- **EGI Community Forum 2015** in Bari (10-13 November)
- **EGI Community Forum 2016** - location and dates to be defined, most likely September 2016
- **EGI Community Forum 2017** - location and dates to be defined, most likely June 2017

In parallel with the flagship events, EGI-Engage will see the organisation of thematic workshops, most likely hosted in Amsterdam, developed in consultation with and with the participation of project members, partner e-Infrastructures and sister projects.

2.3.2 External participation in events

External events, here defined as events, which are not organised by EGI.eu, present excellent opportunities for dissemination and engagement.

The types of events that will be prioritised during EGI-Engage are:

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- **Policy events** organised mostly in Brussels and aimed at policy makers. The Communications Team will support the project coordinators in organising presence in policy workshops and concertation meetings. In the following table, there is a preliminary list of events.

Event	Date and venue	Suggested Contribution AND Action Owner	Value of attending and possibly contributing to the event	Decision (participate? Who?)
A new start for Europe: Opening up to an ERA of Innovation	June 22-23, 2015, Brussels, Belgium	This high level policy event will focus on Open Science, the European Research Area, and Innovation	Promotion of the Open Science Commons with policy makers	EGI.eu Director and EGI.eu Technical Director
e-IRG workshop	Twice a year	This is a key policy event to discuss policy recommendations for e-Infrastructures, network with key representatives and nurture collaborations. The contribution is in presentations, participating in discussions and	Raise visibility and profile of EGI within other e-Infrastructures and towards ESFRIs	EGI.eu Director, EGI.eu Technical Director, EGI.eu Strategy and Policy Manager
ICT 2015	20-22 October 2015, Lisbon	This is a key policy conference where the EC announces new initiatives and important for networking	Raise visibility of EGI, learning about new EC initiatives, networking	EGI.eu Director, EGI.eu Technical Director, EGI.eu Strategy and Policy, Communications Team

- **Scientific events** organised by scientific communities. The participation in this type of events can be two-fold: by directly contributing to the programme with workshops and/or tutorial and/or presentations (detailed in section 4.4.4 of this document), or by being present with a booth/stand (as part of the Outreach phase of the Engagement Strategy, see chapter 3) manned by the Communications Team.

3 Dissemination Strategy

3.1 Overview of targets matched to result type

This section explains how EGI-Engage will contribute to publicly disclose the results of the project to ensure the highest impact. These expected results are grouped into five categories that can be linked to intended targets, or audiences, as detailed in the following table.

Result category	Definition of outputs	Intended targets
Technical input to standards	Technical specifications or extensions to standards adopted within the project	Standardisation bodies, Funding agencies and decision/policy makers, industry and SMEs
Policy & procedure developments	Technical procedures directed at users, service and infrastructure providers (for example to govern access and allocation to resources), policy reports and recommendations, and strategic analysis	Funding agencies and decision/policy makers, RIs, international research collaborations and the long-tail of science, industry/SMEs, service providers, standardisation bodies
Software & service innovation	Software developments (e.g.: workflows, Virtual Machines, applications), new software services deployed for the direct benefit of researchers (e.g.: web portals, gateways), e-Infrastructure Commons such as accounting, AAI, and the Federated Cloud platform and the Open Data platform, demonstrators and prototypes.	RIs, international research collaborations and the long-tail of science, industry/SMEs, service providers, Funding agencies and decision/policy makers, Standardisation bodies
Business model innovation	Business and sustainability-related outputs (the EGI Service Marketplace concept, the contribution to the Innovation space for the big data value chain, sustainability plans, pay-for-use models)	RIs, international research collaborations and the long-tail of science, Industry/SMEs, service providers, Funding agencies and decision/policy makers
Know-how	Includes all results from fact-finding activities (e.g. surveys, requirement gathering), but also the results from internal exercises (e.g. security challenges) and outputs that can be used for knowledge transfer as training materials.	All

3.2 Dissemination strategy per type of result

3.2.1 Technical input to standards

EGI has a long and successful history in driving and supporting open standards in its production infrastructure (e.g. OGF Usage Record, OGF GLUE). The EGI production infrastructure is designed as a modular set of platforms[14] using open standards to define the respective external interfaces. For some of these platforms, EGI is an early adopter of standards specifications, thus being able to both collaborate in standards revision/extensions, experience reports or requirements definition. Relevant standards within the EGI Core Infrastructure Platform are OGF Usage Records, OGF GLUE2, ITU-T X.509 with IETF proxy extensions for authentication, and others. Likewise, the newly launched EGI Federated Cloud Infrastructure Platform not only serves as an integration blueprint, but also exposes access interfaces governed by publicly defined open standards, such as OGF OCCI (Open Cloud Computing Interface) and SNIA CDMI (Cloud Data Management Interface). The target audience of this type of results are standardisation bodies and funding agencies. These results will lead to the optimised use of ICT in research and budget-saving opportunities. They will also contribute to the standardisation bodies' efforts to reduce technology fragmentation and promote uptake of new technologies. EGI commits to facilitating avoidance of vendor lock-in for any of its deployed and operated service platforms and plans to contribute to the further development of the OCCI, UR and GLUE standards of OGF, CMDI of DMTF and OVF of OASIS-Open.

3.2.2 Policy & procedure development

3.2.2.1 Strategy and policy documents

The target audiences here are the collaboration's service providers (NGIs), the supporting funding agencies and the user communities that make use of EGI's services. This group of results will guarantee that the decision-making process within the project (and within the EGI community coordinated through EGI.eu) is well informed, is aligned with market trends, contributes to European-level vision and is in a position to liaise with external partners and peer infrastructures. This will allow the EGI community of service providers to operate as a block, rather than a fragmented collection of national entities. These results will also provide users with a clear set of policies & procedures to give context to the business relationship.

Strategy and policy documents will be also disseminated through the EGI-Engage collaboration board and through the EGI Council. The project will also use internal communication channels to reach the wider EGI Community (not just the managers) to increase awareness in long-term goals, overarching European trends, threats and opportunities.

3.2.2.2 Internal EGI Policy Development

A variety of EGI policy groups were created to define policies and procedures within a specific functional area with well-defined responsibilities, composition and operational procedures via Terms of Reference. The EGI Council through the EGI.eu Executive Boards govern the various

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[14] EGI Platform Roadmap, EGI-InSPIRE Milestone MS518, 2014: https://documents.egi.eu/document/2232

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policy groups and authorize to investigate any activity within its Terms of Reference. The primary groups can define policies for the EGI community. These are advertised on the EGI website and wiki once approved.
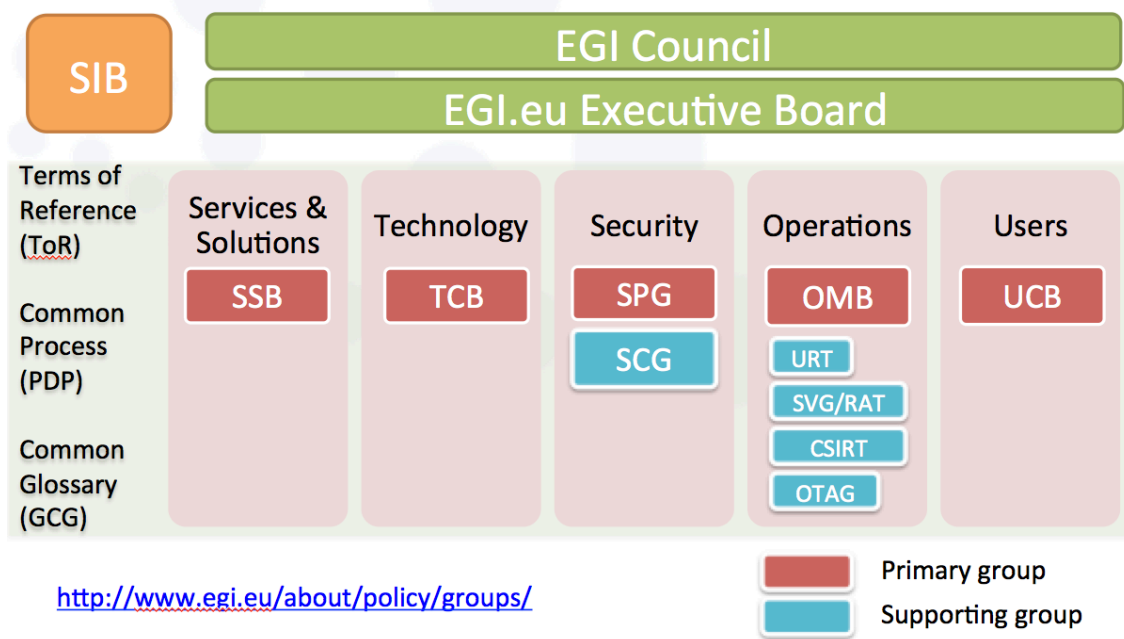

Figure 1: EGI Policy Boards

SIB: Strategy and Innovation Board (SIB)
SSB: Services and Solutions Board (SSB)
TBC: Technical Coordination Board (TCB)
SPG: Security Policy Group (SPG)
SCG: Security Coordination Group
OMB: Operations Management Board (OMB)

OTAG: Operational Tools Advisory Group
URT: UMD Release Team
SVG: Security Vulnerability Group
CSIRT: Computer Security Incident Response Team
UCB: User Community Board (UCB)

3.2.3   Software & service innovation

Service providers, RIs and international research collaborations and the long tail of science are the main targets of this wide category of results, designed to enhance the EGI ICT service offer. A wide range of software choices and services will benefit both the service providers and the service consumers (researchers) who can embrace a wider choice of services. Software & service innovation results can be exploited to increase the user base of the EGI Community and strengthen the service provider sustainability and will be used to maximise Outreach activities.

The following figure shows the flow of information from the target groups through and the policy boards to influence the evolution of services and solutions. On the left-hand side, there are the different types of stakeholders that may have requirements for evolving services and solutions. They can present these requirements in the related boards (i.e., TCB for the technology providers, OMB for the service providers, UCB for the user communities). These boards will discuss the requirements, filter them and pass to the SSB who is in charge for the evolution of the services

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and solutions portfolio. The SSB receives also the requirements from an external advisory body (SIB) through the EGI Council.
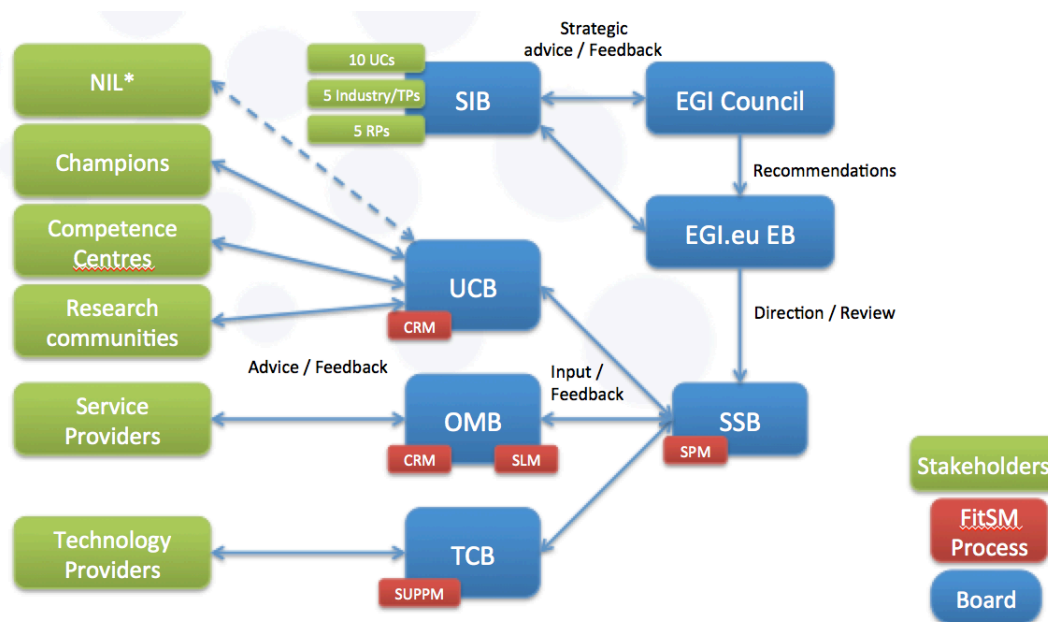

Figure 2: Information flow to influence the evolution of services and solutions. NIL: NGI International Liaison. The arrows indicate the interactions between groups.

In order to comply with the open access policy and maximise possibility for reuse of results, EGI-Engage software code, tools and interfaces that are new will be published under an OSI-approved license (http://opensource.org/licenses). In order to comply with the open access policy and maximise possibility for reuse of results, EGI-Engage partners, together, agree not to further develop software released with a non-open license and which cannot be re-released using an OSI-approved license. In case an assessment is needed or a license change to a participant' background is needed, the consortium will consult the OSS Watch[15].

3.2.3.1   EGI AppDB

The EGI Applications Database (AppDB) is a central service that stores and provides to the public, information about software solutions in the form of native software products and/or virtual appliances, the programmers and the scientists who are involved, and publications derived from the registered solutions.

Reusing software products, registered in the AppDB, means that scientists and developers may find a solution that can be directly utilized on the European Grid & Cloud Infrastructures without reinventing the wheel. This way, scientists can spend less or even no time developing, porting or even using a software solution to the Distributed Computing Infrastructures (DCIs). AppDB, thus, aims to avoid duplication of effort across the DCI communities, and to inspire scientists less familiar with DCI programming and usage.

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[15] http://oss-watch.ac.uk/

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The EGI Applications Database is open to every scientist, interested on publishing and therefore sharing, his/her software solution. The only prerequisite, is to be owner of a valid account. After that, you will be able to take advantage of the authenticated write-enabled features of the AppDB service and more specific to register your software product and/or virtual appliance.

3.2.3.2   *Other Open Source Repositories*

The development activities within the project will augment capabilities of existing open source software. The resulting software code, tools and interfaces developed as part of the EGI-Engage vision will be released as open source code and the full access will be provided via source code repositories such as GitHub or Forge.

Software developers will be able to choose their preferred source code repository to better integrate with existing practices, nevertheless they will need to 1) ensure that the contribution is openly accessible, 2) add the metadata information needed to enable reuse, and 3) communicate the URL to the consortium. The location of such repositories for the various software packages will be documented in Deliverable D1.1 Quality plan[16].

3.2.4   Business model innovation

The RIs, industry/SMEs, service providers (NGIs) & funding agencies are the audiences for this category of results. These outcomes contribute to the long-term sustainability of the EGI Community, thus guaranteeing that researchers have state-of-the-art ICT services for their work and assuring that the investments made by service providers and funding agencies are maximised.

Business model innovation outputs will be exploited to increase the user base of EGI because they bring more options for engagement and increase transparency, to this effect, the project will:

- Pilot the business models and promote them with the funding agencies

Pay-for-use: In early 2013, the EGI Council approved a policy to explore business models for pay-for-use service delivery to couple together with the traditional method of free-at-point-of-use. The goal of this activity is to support the implementation of this policy in collaboration with NGIs through the definition and execution of proof of concepts. The mandate of the group is to create a proof of concept pay-for-use prototype. EGI-Engage is supporting the transition of previous work in order to move from prototype to production.

SME engagement: Dedicated activities to understand the requirements of SMEs and define models for engagement, increase the skills of the participating NGIs (and EGI in general) to approach SMEs and figure out possible ways of collaboration, also leading to the creation of future business projects. Promising SMEs will be identified and contacted in appropriate forums (e.g. industrial clusters, scientific community forums, or initiatives related to Open Data, Big Data Value, and European SME Instruments). The project will leverage in open data generated in selected fields and possibly may use EGI resources as enabling systems. Some of these projects are expected to produce outcomes fit for commercial exploitation.

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[16] https://documents.egi.eu/document/2487

Marketplace: The EGI Marketplace is currently in the nascent stages to ideally offer a one-shop-stop concept that would allow the request, provision, accounting, billing of e-Infrastructure services. A dedicated group is currently developing scenarios for allocating capacity to research communities in collaborations with pilot user communities (user-driven scenario development), identifying incentive mechanisms for resource centres to provide capacity, analysing revenue streams (e.g., PCP, PPI, direct charging to users, free service at point of delivery and integration with other marketplaces (e.g., Helix Nebula).

- Keep the website updated with the Solutions and Service Portfolio

Services and Solutions Board: Advises EGI Management on the priorities for evolving the services and solutions portfolio; conducts regularly scheduled management reviews of services and solutions portfolio; implements the recommendations from the EGI Strategy and Innovation Board (SIB) that have been endorsed by the EGI Council; interfaces with the UCB, TCB and OMB for inputs; steers the creation, review and approval of service/solution design packages including descriptions and specifications; and plans the design and transition of new or changed services considering timescales, responsibilities, new or changed technology and communication.

3.2.5 Know-how

All EGI-Engage audiences benefit from the know-how accumulated by the EGI Community, from the researchers that will have better support and better services to the service providers that will have stronger business models and enhanced sustainability opportunities. Reflecting the wide range of audiences that will benefit from know-how, the dissemination strategies to maximise this group of results will span the entire toolset of communication channels (outlined in the following section). To give a few examples:

- The know-how created by carrying an in-depth market analysis will be the focus of a newsletter article to increase the knowledge base of the community.
- Knowledge accumulated by national support teams and user communities will be exchanged and transferred in the form of training events[17], manuals and software documentation.
- Security best practices collected by one service provider, during a security challenge, for example, can be disseminated to the wider community via the news feed, or the EGI blog.

3.2.5.1 Research data

The EGI-Engage consortium acknowledges that the key expected impact of EINFRA-1-2014(6) of "increased availability of scientific data for scientific communities independently of them having already embraced or not e-science" depends inherently on a critical mass of users practicing according to minimum standards that optimise flow, discoverability and reuse of data.

The proposal mainly aims at expanding the capabilities of e-Infrastructure services and to integrate new research communities. For this reason, limited amount of foreground data is expected, mainly related to impact assessment studies producing indicators or data from market

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[17] See training plan: http://go.egi.eu/trainingplan.

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analysis. These data will be permanently archived in open access repositories (e.g. OpenAIRE's Zenodo) and publicly released and/or published (with the exception of Third Party data, national security data, medical/patient data) before the end of the project. Further information will be made available via the EGI Data Management Plan (D2.4).

3.2.5.2 Management of Scientific Publications

The consortium commits to the Horizon2020 Open Access mandates and intends to embrace all possible Open Access roads known today. These include Gold Open Access and Green Open Access (or self-archiving) for all scientific publications produced. With this objective, the Consortium partners will privilege Open Access journals or non-Open Access journals, which support Green and Gold roads. They will rely on dedicated funding from their research projects and/or institutions and store originals or pre-prints of their publications into their organisation's repository or, in absence of such repositories, into OpenAIRE's Zenodo for publications. The consortium will strive to make them publicly available in the best way possible, while aiming at consciously choosing venues and publishers appropriately.

In order to make public information owned by one partner, its prior explicit consent (in written, being e-mail valid if so agreed) will always be necessary. For the avoidance of doubt it is stated that no Partner shall have the right to publish or allow the publishing of data, which constitute Project results, Background or confidential information of another Party even where such data is amalgamated with such first Party's Project results, Background or other information, document or material.

4 Engagement strategy

Science today is no longer exclusively produced in single research labs or within national boundaries. Modern scientific challenges call for integrated solutions, cross-country collaborations and computing power with flexible usage to analyse vast amounts of data. E-infrastructures allow scientists to share information securely, analyse data efficiently and collaborate with colleagues worldwide.

EGI operates one of the largest, collaborative e-infrastructures in the world. EGI supports the digital European Research Area (ERA) through this pan-European infrastructure, its innovative technological building blocks, and related support teams and networks for users. These all together offer reliable ICT services, which provide uniform, cost effective, user oriented and collaborative access to computing and data storage resources in more than 30 countries. EGI's mission is to help scientists to make the most of the latest computing technologies, such as clouds, big data and grids.

In this respect sustainability is an essential consideration for e-Infrastructures and scientific communities that such infrastructures support. Many of these scientific communities have research agendas measured in decades and need to be assured of the continued operational presence of the e-infrastructures that they adopt to support their work. EGI's sustainability plans have become increasingly coupled with its long-term strategy: connect researchers from all fields of science with the reliable and innovative ICT services from EGI that they need to undertake their research. Evolving these services according to researchers' needs is also inevitable, to continue providing value for research and science in Europe. Engagement is a key activity in EGI to achieve these goals. EGI Engagement has to:

1. Identify scientific communities from academy and industry that could break current scientific barriers with the use of EGI services and solutions.

2. Reach out to, and carry out discussions with these communities about ICT technologies to understand and capture details of their e-infrastructure use cases and requirements.

3. Help these communities tackle scientific challenges with the use of existing EGI solutions and by new solutions brought into, or developed within EGI as required.

4. Support scientific communities during the whole process they need to go through to become active and self-sufficient users of EGI services and tools.

5. Act as a meeting point for research communities, a community of communities, where information and experiences relating to e-infrastructure application and adaptation can be shared.

4.1 Target groups

EGI Engagement needs to establish partnerships with researchers of the ERA. Researchers can be engaged with at different levels. The Engagement Strategy needs to know the specific

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characteristics of these levels in order to be able to choose suitable and effective engagement approaches and priorities.

4.1.1 Research Infrastructures and FET Flagships

EGI provides a world-class e-infrastructure that can support researchers in pushing the frontiers of science, in particular within areas with massive data or computational requirements. In the next two years a growing number of Research Infrastructures (RIs) from the ESFRI roadmap[18] and from national roadmaps are expected to reach implementation or operational stage. These RIs as well as the Future and Emerging Technologies (FET) Flagship Initiatives[19] are already exploring needs of their user communities and thus they are key instruments in bringing together a wide diversity of stakeholders to look for solutions to many of the problems science is facing today. Given their international nature and awareness of the benefits of e-infrastructures the European RIs and Flagships, their preparatory projects, and other similarly large, multinational and structured scientific collaborations are considered as the primary long-term beneficiaries of EGI services and therefore the prime targets for EGI to engage with. RIs come with some advantages, and disadvantages, which need to be considered when engaging with them.

Advantages:

- Usually one point of contact exists per RI for ICT / e-infrastructure-related matters, for example a technical coordinator.
- Requirement gathering should be simpler and can build on the established network of contacts within the RIs.
- Acceptance and integration of EGI into the internal plans of the RIs should lead to a long-term partnership between e-infrastructure and research infrastructures.
- Awareness of their problems and typically also of the benefits of using e-infrastructures in addressing them.
- More likely to have some internal expertise that can work with EGI and speed up collaborative work.

Disadvantages:

- Convincing a large community of an outside solution can be difficult and effort-intensive.
- RIs sometimes need to work with existing/previously chosen tools and EGI needs to integrate these to achieve technical compatibility.
- The full pay off (i.e. scientific breakthrough enabled by EGI solutions) may not be seen for a number of years.

4.1.2 Research Collaborations

A second target group for EGI Engagement is the large number of highly dynamic, small-medium size research collaborations and research networks. These are typically represented by FP7 or

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[18] ESFRI roadmap: http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=esfri-roadmap
[19] FET Flagship Initiatives: http://cordis.europa.eu/fp7/ict/programme/fet/flagship/

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H2020 projects at the European scale, and by similar-size national projects at the national scale. Unlike RIs and Flagships, these groups may scarcely, or not be aware of e-infrastructures and their benefits to science, so discussions have to start at a more basic level. Such collaborations come with different unique advantages and disadvantages that need to be recognised by EGI when engaging with them.

Advantages:

- Being usually more flexible on using new technologies and tools.
- Bringing new insights and tools that could have a wider use.
- Be the possible first step in integrating a much wider community.
- Be more suited to establish spinoffs and start-ups.

Disadvantages:

- Could be not as big a pay off from a usage perspective.
- May not be aware of their e-science problems and the benefits of e-infrastructures.
- Requirement gathering may not be straightforward because of the lack of structure/connection among groups.
- Might be lacking in technical expertise.

4.1.3 Long tail of science

A third target of EGI Engagement is the very small research teams and individual researchers who work on their own research agendas or personal research tasks. They are typically unaware of e-infrastructures, and despite they could in general benefit from e-infrastructures, they are likely to require only a very small subset of the services and functionalities that e-infrastructures can offer, and are likely to need these for a relatively short period (days or weeks). Their focus is more on pursuing personal research agendas then contributing to a structured scientific collaboration. Working with the long tail of science comes with different unique advantages and disadvantages that need to be recognised by EGI when engaging with them.

Advantages:

- Successful examples of serving members of the long tail in many, if not all of the NGIs.
- Require only a limited set of services from e-infrastructures – typically HTC, HPC and cloud services for individualistic computing without collaboration capabilities.
- A very significant source of innovation and innovative research results.

Disadvantages:

- Very difficult to tell who and when belongs to this group. The long tail is invisible and has no identifiable contacts for pro-active engagement.
- Difficult to measure scientific outcome of the long tail and the impact of e-infrastructures on this.
- Most of its members lack the technical expertise in using e-infrastructures. Support can be very effort intensive if considered for the whole length of the long tail.

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- May not be aware of e-infrastructures and that some of their problems can be served by e-infrastructure services.
- Requirement gathering is very difficult because of the very loose link to the long tail and because of the dynamics of these users accessing the infrastructure.
- Most of the EGI-related national and European projects that provide support for the long tail are coming to an end in 2014-2015.

4.1.4 SMEs and industry

There is a renewed requirement for stimulating the knowledge transfer activities and outcomes produced in science and scientific innovation into business and society. This requirement are in many cases translated into requisites for funding for EGI members in such a way that knowledge transfer is not anymore a nice-to-have, but has become essential for sustainability/survival. Moreover, H2020 programmes include an 'impact' section that aims to go beyond the exploitation and dissemination plan at the end of each project. From now on, EGI-related H2020 proposals need to demonstrate that outcomes have a positive impact onto business and society from day 1 of the initiative. Strengthening the relationship with the business sector EGI is also fundamental part of the Open Science Commons strategy[20] and a way to show the leadership that has been asked to take.

In order to achieve this, EGI needs a network of people with skills in business development, backed with specific, co-ordinated organisational structures, and dedicated personnel resources to establish fluid and sustained relationships with other partners for the creation of these value networks. One of the main issues to-date was having no dedicated effort within the EGI community to reaching out to the private sector. In spite of some efforts and some encouraging examples, the initiatives for business engagement have not yet progressed towards any meaningful impact. At local level there are few good examples, but they are the result of the individual initiative of some NGIs that have a clear mandate by the national or local administration, which is not the case in many other NGIs. Despite EGI members have for many years engaged a variety of research communities with mature structures, procedures and expertise for this engagement, but there was no structure or procedures for business engagement, which includes activities such as identifying the SMEs with interest to collaborate, have a clear value proposition, and create a formal engagement relationship with its associated business model.

Therefore, the EGI community recently defined a 'Business Engagement programme'[21] to help the community overcome these barriers. The programme is a framework underlying the specific future joint activities between EGI members and the different representatives of the business sector. The programme defines:

- Potential areas of collaborations between EGI members and industry:
  - Promotion
  - Market intelligence

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[20] Open Science Commons strategy: http://opensciencecommons.org
[21] EGI Business Engagement Programme: https://documents.egi.eu/document/2339

- o Networking
- o Access to dedicated consultancy and support
- o Exploiting EGI services for pre-commercial R&D
- o Testing proof of concepts
- o Developing added-value services for reusing open research data sets.
- Provides details on the various benefits that engagement between EGI and industry would bring to the parties:
  - o Increased visibility on a European and global scale.
  - o Access to key information to relevant European policies.
  - o Possibility to develop new products and technologies to enhance your product portfolio.
  - o Adoption of new and innovative technologies.
  - o Reduction of learning curve and ensuring faster and trustable results.
  - o High rate of Return on Investment (ROI) for consumer partner.
  - o Greater potential market for commercial services as academia moves from CAPEX to OPEX model.
  - o Opportunity to expand and strengthen the customer base with new and repeated clients.
  - o Access to market intelligence to gain competitive edge.
  - o Possibility to provide direct input to shape future services of EGI for business opportunities.
  - o Opportunity to contribute as a partner to proposals for funded projects.
- An activity plan to implement the programme. (Further info in Section 4.4.2.6).

4.2 The engagement blueprint

EGI operates as a community of communities to facilitate the sharing of knowledge and services for establishing the digital science ecosystem in the ERA. This is achieved via collaborations with communities of research infrastructures, FET flagships, research collaborations, the long tail of science, SMEs and industry. EGI Engagement has to identify and reach relevant members of these communities, communicate relevant and impactful messages about the opportunities and benefits that collaboration with EGI could bring, deepen relationships until the exact scope and conditions of collaborations with mutual benefit are understood, and finally implement and maintain the relationships to bring benefits for the stakeholders. This process can be defined in a generic way and used as a blueprint to implement specific engagement plans with each of the various types of communities that have been identified in the previous section. EGI-Engage partners collaborate in the implementation of this process. While EGI.eu's and EGI-Engage's prime objective is to engage with and establish support for multi-national communities with long lifetime, the NGIs and individual institutes within those typically focus on national and local communities and SMEs. The blueprint engagement process that integrates the various contributions is depicted in Figure 1 and it consists of three phases:

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1. **Outreach**: This phase identifies those communities of the ERA whose engagement with EGI could bring mutual benefit for both parties as well as to the ERA as a whole. Using communication and marketing approaches in a pro-active way this phase raises awareness of EGI within the new community, and generates interest towards collaboration with EGI (e.g. to use specific EGI solutions in the context of the given research infrastructure). The Outreach builds on the EGI Communication activity. While some of these communities (or individuals from these communities) can immediately become users/partners/contributors of EGI by simply following the guidelines and tutorials that exists on the EGI and NGI websites, complex partnerships typically requires further discussions between EGI representatives and the new community. These 'support cases' are handed over to, and followed up in the second phase of the engagement workflow[22].

2. **Scoping**: In this phase engagement with the new community is deepened and details about the requirements, constraints, possible solutions or contributions of the parties are exchanged and understood. An implementation plan is defined[23] to capture the scope, timeline and other aspects of the collaboration that will result in the integration of this new community with EGI. The primary output of this phase is an integration plan endorsed by both the EGI community and the prospective partner community. The plan is handed over to the third phase of Engagement.

3. **Implementation:** This phase initiates, and then executes the integration project based on the endorsed plan. During execution the project is monitored by EGI.eu to ensure timely delivery, to recognise deviations and to initiate corrective actions. The project – after successful completion – results a new, integrated community in EGI together with any technical or other setup that was needed to complete the work. These outcomes directly benefit the integrated community to tackle scientific challenges, and benefits existing and prospective new partners of EGI in the form of reusable, customisable systems.

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[22] The technical details of tracking support cases and handing them between the phases and teams, using the EGI RT system are described in https://documents.egi.eu/document/2478. The current list of cases can be seen on this ticket dashboard: http://go.egi.eu/technicalsupportcases.

[23] This implementation plan is captured in the most appropriate form that satisfies the parties. E.g. as a Memorandum of Understanding; as a Virtual Team project; as a H2020 initiative; as an agreed PPT slide set, etc.
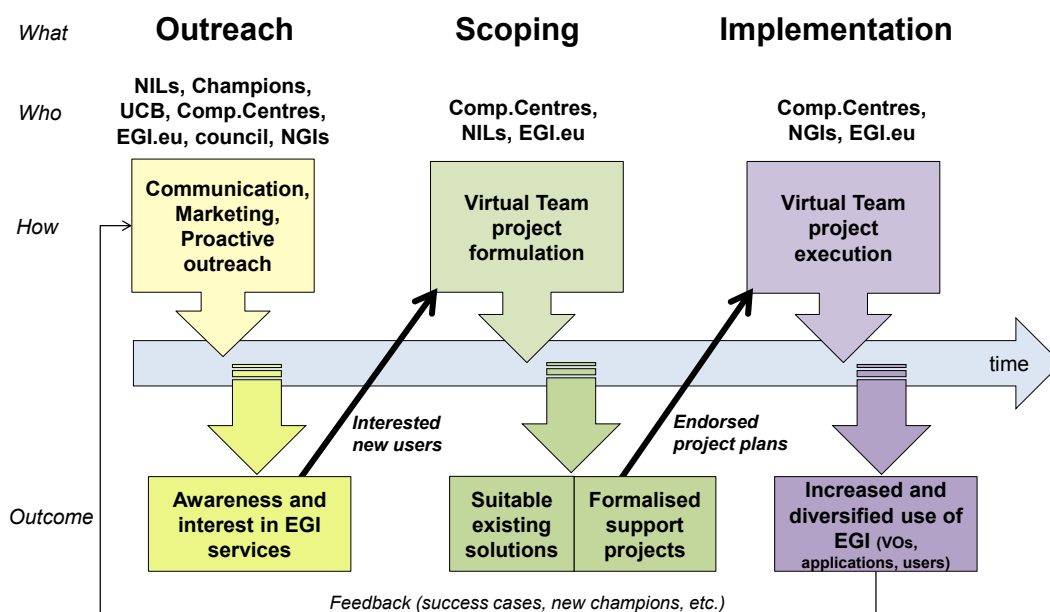
Figure 3: EGI Engagement process

4.2.1   Outreach

This phase uses communication, marketing and proactive outreach techniques to communicate and disseminate EGI solutions to communities within the ERA, with the main goal to raise awareness within these communities about how these solutions could help them overcome their current problems. To be effective, this activity has to use both online and offline (face-to-face) mechanisms, and must involve a large number of experts who convey messages from EGI to the various target groups. These experts and their involvement in the Outreach phase are the following:

- EGI.eu staff:
    - Prepare online (web) and offline (printed) materials about EGI and its services that emphasise the benefits of these solutions to science, and thus can attract the attention of scientific communities of the ERA. Keep the materials up to date using input and feedback from the community.
    - Identify prospective partner/target communities for EGI within the ERA, proactively engage with them to promote EGI to their representatives using the most suitable message format and channels, such as web, email, conferences, exhibitions, 'cold calls'.
    - Coordinate the distribution of materials, and the promotion of EGI within the NGIs through the International Liaisons (NILs), the Distributed Competence Centre (DCC) and the EGI council.
    - Coordinate the distribution of materials, and the promotion of EGI within scientific communities through the Champions, the User Community Board (UCB) and at EGI and community events.

- o Capture details of emerging engagement cases and hand these over for follow-up to those who are active in the Scoping and Implementation phases. (Follow the guidelines in https://documents.egi.eu/document/2478)
- NGIs and Competence Centres (NILs, CCs, council):
  - o Using content and templates from EGI.eu, and from the NGIs prepare online (web) and offline (printed) materials about EGI and NGI solutions to the attention of members of the ERA. Keep the materials up to date based on input and feedback from EGI members and national partners.
  - o Identify prospective partner communities for EGI and NGI from the ERA, but primarily in your country, and promote EGI/NGI opportunities to them using the most suitable message format and channels, such as web, email, conferences, exhibitions, proactive 'cold calls'.
  - o Provide feedback to EGI.eu on a regular basis about progress and achievements in community engagement and the achievements made available within these communities with the support of EGI.
  - o For NILs: Coordinate the distribution of materials, and the promotion of EGI/NGI within the country and report back about this on a regular basis to EGI.eu.
  - o Capture details of emerging engagement cases and hand these over for follow-up to those who are active in the Scoping and Implementation phases. (Follow the guidelines in https://documents.egi.eu/document/2478)
- Other communities in EGI (Champions, UCB, projects with EGI MoU, etc.):
  - o Promote EGI within your community using the most suitable message format and channels, such as presentation at conferences, leaflets/demos at exhibitions, email lists, websites, social networking, etc.
  - o Publish scientific papers or other impactful materials that acknowledge EGI/NGIs for the resources and services that enabled scientific progress.
  - o Use the online and offline promotional materials provided by EGI.eu and help us keep these up to date.
  - o Provide feedback to EGI.eu on a regular basis about progress and achievements in engagement within your community.
  - o Capture details of emerging engagement cases and hand these over for follow-up to those who are active in the Scoping and Implementation phases. (Follow the guidelines in https://documents.egi.eu/document/2478)

4.2.2 Scoping

During the Scoping phase engagement with prospective communities is deepened, and formalised in a project plan that describes the focused activity that the new community and EGI wants to carry out jointly. During this process the technical challenges and/or opportunities of the new community must be captured, analysed, and matched against existing solutions, possibilities and emerging technologies of EGI. Based on the analysis an implementation document must be endorsed by the representatives of both EGI and the new community, and then handed over to

the 'implementation phase' for execution. The members who are involved in the scoping phase and their responsibilities are:

- EGI.eu staff:
    - o Provide guidance and templates for project formalisation (as required: template for project initiation document, Virtual Team project, MoU, etc.)
    - o Invite relevant experts from EGI and the broader e-infrastructure communities to participate process of collecting and analysing the needs, possibilities, opportunities and constraints for joint work with the new community (from the Competence Centres, NGIs, partner projects, technology providers, etc. as required)
    - o Get approval and support for the implementation project from EGI, and from scientific communities.
- Members of the new community and members of EGI:
    - o Capture and analyse the technical challenges and requirements of the integration
    - o Participate in the technical analysis
    - o Identify solutions by which the requirements can be addressed, offerings can be integrated/matched
    - o Contribute to project initiation document
    - o Approve project initiation document

4.2.3 Implementation

During the implementation phase the integration projects are instantiated according to the plans, then executed. The projects are monitored by EGI.eu staff to ensure progress and to initiate corrective actions (such as update to project plan) if required. Compared to previous phases the execution of projects may require a different set of members. These members, their commitment level (e.g. hours/week), and expected contributions to the project should be defined as much as possible already in the project initiation document. The responsibilities of project members are:

- EGI.eu staff:
    - o Help the project choose a coordinator.
    - o Support the coordinator as required, e.g. monitor the project and if necessary initiate corrective actions (e.g. change to project plan).
    - o Provide logistics support for the project (e.g. public website, email list, booking teleconference system for meetings, etc.).
    - o Contribute to project as required according to the project initiation document.
    - o Disseminate project results.
- Other members of EGI and the new community:
    - o Contribute to project as required according to the project initiation document.
    - o Disseminate project results.

4.3 Tools

A number of online resources and tools exist to support the execution of the Engagement strategy. These are:

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- Repository of communication and marketing materials and templates: http://www.egi.eu/news-and-media/publications/

- Registry of upcoming events that can be relevant for EGI members to attend and promote EGI (with planned contributions from EGI): http://wiki.egi.eu/wiki/Research_Conferences

- To see an up-to-date picture of the support cases that are currently in the Engagement workflow, please go to http://go.egi.eu/technicalsupportcases. (An RT queue with public access)

- How to capture details of a new engagement case that should be followed up in EGI:
  - Capture the case in the technical-support-cases RT queue, as described in this document: https://documents.egi.eu/document/2478 OR
  - Report back during the regular (monthly) Engagement board teleconferences OR
  - Send details in email to support@egi.eu

- Regular meetings for the Engagement Board:
  - https://indico.egi.eu/indico/categoryDisplay.py?categId=36

- Email lists:
  - NILs: ngi-international-liaisons@mailman.egi.eu
  - UCB: UCB-discuss@mailman.egi.eu
  - Leaders of EGI-Engage Competence Centres: egi-engage-wp6@mailman.egi.eu

- NIL table: http://www.egi.eu/community/ngis/NILs.html

- Requirements Tracker: The evolution of the European Grid Infrastructure is driven by the users. Therefore capturing and following up feedback from users reached during Engagement is a key goal for all the three phases of the Engagement activity.
  - Capture the requirements in the ticket that represents the support case: http://go.egi.eu/technicalsupportcases
  - If no ticket exists for the case (i.e. community/project), then register it. For further information please refer to https://documents.egi.eu/document/2478.

- Templates for Virtual Team projects:
  - Description of Virtual Teams: https://wiki.egi.eu/wiki/Virtual_teams
  - Project initiation document template, and project final report template: https://documents.egi.eu/document/1991
  - VT project wiki page template: https://wiki.egi.eu/wiki/VT_Template_Wiki_page

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4.4 Engagement plans for the next period (June 2015 - April 2016)

This section provides a listing of the activities that are planned for completion by April 2016 in the Engagement activity. These activities are supported by project partners through EGI-Engage or through the involvement in other projects – therefore this section is long and seems challenging. EGI-Engage NA2 'only' provides support for the coordination of Engagement activities, but the implementation is covered in other EGI-Engage WPs, and in partner projects. Priority activities for EGI-Engage in this domain include engagement with large, multi-national, structured, long-living communities. Other activities – such as engagement with smaller, shorter-living projects, national initiatives – have smaller priority in EGI-Engage and more depend on NGI and external contributions. The structure of this chapter reflects exactly this: after looking at the NGI's priority activities, the rest of the chapter is organised from large communities to smaller communities to national initiatives. Information about the linkage of actions to EGI-Engage and other projects is indicated below for each action item/category.

4.4.1 NGI priorities

An email survey has been circulated to the NGI International Liaisons of the current NGIs of EGI to assess their priorities in engaging with and supporting specific scientific communities and disciplines. The key elements of the received responses are summarised in the table below (Alphabetically ordered by NGI country code).

Note that information about national roadmaps for research infrastructures is also available at http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=esfri-national-roadmaps, and some NGIs reported different (more up to date, or more historical) information about national roadmaps.

NGI	Status of national roadmaps	Priorities	Next activity / possibility in EGI
BG	There is a roadmap that describes 9 RIs: http://www.mon.bg/?go=page&pageId=4&subpageId=53	• Computational physics (fluid dynamics, semiconductor modelling) • Astrophysics (VOs) • CLARIN and DARIAH (BG-CLaDa) • BG-BBMRI (focus on HPC) • Environmental sciences (Climate change, Env. Protection) • Marine community • Integration of new HPC cluster (Xeon Phi cards and CPUs)	• Join DARIAH CC and BBMRI CC activities • Join federated open data for marine use case activity of EGI-Engage (JRA2.1) • Join GPGPU integration activity of EGI-Engage (JRA2.4)
CH	Switzerland has a roadmap, and the NGI is indirectly part of that roadmap as some of our activities are funded.	• To play a more active role as the "eScience Support Team" to offer the human component of eScience/e-Infrastructure support.	

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		• ELIXIR and ATLAS		
CZ	There is a national roadmap (http://www.msmt.cz/file/26526/download), and its new version is currently finalized, as a result of the international evaluation of the national infrastructures. CESNET and the largest computing centre in the Czech NGI (CERIT-SC) are included in the roadmap.	• No change since 2014: BBMRI, CTA, ELI, ELIXIR, EuroBioImaging, Instruct, ICOS. (With direct participation in ELIXIR) • Early engagement with LINDAT/CLARIN. • Supporting NGI users participating in HBP. • In contact with ELI.	Connect to ELIXR and BBMRI CC; ELITRANS project; HBP collaboration;	
ES	There was a roadmap about the participation of Spanish nodes in ESFRIs, however funding got very limited to this in recent years.	• LifeWatch (already coordinates the respective EGI Comp. Centre). • DANUBIUS • eLTER • EMSO • Nanoscience	• Join forces with NGI Romania for harmonised activities for DANUBIUS.	
FR	There is national roadmap and the objectives of France Grilles are defined accordingly to its point of view.	• No change since 2014: ANAEE, EISCAT3, ELIXIR, EMSO, EPOS, EURO-ARGO, EuroBioImaging, IAGOS, Instruct, ICOS, KM3NET, LifeWatch • Operating the DIRAC instance, which supports approx. 15 VOs, and an iRODS instance.	Already involved in the ELIXIR, EPOS and LifeWatch Comp. Centres.	
HU	National roadmap does not exist. An expert group prepared a recommendation in November 2014 for the government on which ESFRI participations (from the 2010 roadmap) the government should support. Unfortunately the 2010 roadmap includes only PRACE as an e-infrastructure therefore the NGI is not recommended for support.	• Start a new project to build a federated cloud that serves Hungarian academic research institutes. (Based on OpenStack, HEXAA, WS-PGRADE, etc.) • Engage with business communities in Hungary (topics: agriculture, big data, automotive) • Implementation of a big data platform for agriculture in the Agrodat project. • Introducing cloud courses at 3 universities: Miskolc, Szeged, Óbuda.	• EGI to achieve that it's included as an e-infrastructure on the European ESFRI roadmap so national roadmaps can include the NGIs. • Harmonise EGI FedCloud and Hungarian FedCloud. • Contribute to EGI cloud-related training with university courses.	
PT	FCT (National funding agency	• Continue supporting HEP	The work being done	

	for science) is working on the first version of national Research Infrastructures roadmap. Envisage support for 3 digital infrastructures (e-infrastructures) and 40 scientific infrastructures. These 3 would serve the others with respect to digital services.	communities (incl. Auger and SNO++) communities. • EMSO, EPOS and LifeWatch – with Spain. • Neuroscience groups related to HBP • RNA sequencing groups (plants and animal), but with need more for HPC resources	at establishing bridges between EGI and RI / ESFRI's it's perceived as really helpful. As for infrastructure requests HPC federation would be major success together with some data federation.
RO	Report exists from 2008 and currently under update: http://www.research.ro/uploads/imported/1242293614cric_eng.pdf. NGI_RO and the ARCAS association are contributing to the update process by making a survey on the computing requirements of the user communities and the existing resources (grid, HPC, cloud). This will result in a report on the national e-infrastructure for science and the user needs, and will be presented at the workshop "National e-infrastructure for science and its role within the research infrastructure roadmap" (10-11.09.2015)	• Supporting WLCG collaborations (Alice, Atlas, LHCb) and HEP communities (ILC, Hone) • ELI-Nuclear Physics (eli-np.eu); Registering a new EGI site (GRIDFIN) • Nuclear & condensed matter physics (gridifin.ro) • Computational biology	Explore the establishment of a Virtual Team with HU and CZ to support the definition of ELI computing activities.
RS[24]	Serbia has national Research Infrastructure roadmap, and IPB is designated as the referent institution for HPC in the country. IPB is also designated by the Ministry as the host of the National Supercomputing and Data Storage Center.	• Supporting active users of the current infrastructure: national computational physics and computational chemistry communities, international agricultural community. • Lobbying for establishing a national funding programme for research infrastructures that should also include funding of DCI related activities. IPB	

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[24] At the time of writing the Republic of Serbia does not have an NGI status in EGI. However, the Institute of Physics Belgrade (IPB), as NGI_AEGIS coordinator, continues coordination of national Grid infrastructure operations, and delegates an International Liaison to EGI.

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		requires further funding to expand the use and capabilities of its infrastructure and to get involved in on-going engagement activities. • As observer, IPB is interested in the developing ELI, CERN@School and DRIHM engagement cases.	
UK		• To join up a number of activities which should provide a pipeline for researchers to move from local to national to international facilities, e.g. EGI, GridPP, EU T0, UK T0.	Prepare guidance through the EGI-EUDAT collab. on moving from national to international facilities. Make this reusable across NGIs and disciplines.
TR	Research infrastructure roadmap exists and it is part of the national development plan. Clinical RIs, automotive, renewable energy and photonics are priority areas in this.	• Operating Grid sites to serve the HEP community. • Recently started operating a federated cloud site to serve other national users. (e.g. Nanoscience to run Windows models) • Turkey is involved only in very few ESFRIs and the NGI did not have success with engaging with national nodes so far. Priority here is ELIXIR and Earth science.	The NGI to consider joining the EPOS and ELIXIR Competence Centre activities (as unfunded contributor/observer)

A similar survey has been run among the NILs and Council members in 2014 to collect information on priorities for supporting research infrastructure communities. The below table presents the responses that have been received from those NGIs that did not respond to the 2015 survey.

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	ANAEE	BBMRI	CLARIN	CTA	DARIAH	EATRIS	EISCAT3D	ELI	ELIXIR	EMSO	EPOS	EES	EUROARGO	EUROBioImaging	EuroFel	FAIR	IAGOS	Instruct	ICOS	KM3NET	LifeWatch	SKA	XFEL
DE			■		■							■			■	■	■					■	■
DK			■						■			■											
FI	■		■			■	■												■				
GR			■																	■	■		
IT				■					■					■			■	■	■	■	■		
NL		■	■		■																		
NO		■	■	■			■																
PL				■					■		■											■	
SE		■		■					■										■				
SI			■	■																			
SK		■	■						■										■				■

4.4.2 Action plans to engage with specific groups

The following sub-sections provide status update on engagement activities that will be in the focus for the EGI Engagement activity for the next period. All the cases are scoped at the European level, i.e. require harmonised activities at least from two NGIs and EGI.eu, and will benefit multiple NGIs. Information for these sub-sections have been pulled together from tickets that are stored in the 'technical-support-cases' queue of the EGI RT system. This queue was setup in April 2015 to track progress and development of international engagement and support cases across the EGI Community. Further information about the queue and its usage rules can be found in https://documents.egi.eu/document/2478.

4.4.2.1 Action plan to engage with Research Infrastructures

The ESFRI Roadmap identifies new Research Infrastructures (RI) of pan-European interest corresponding to the long-term needs of the European research communities, covering all scientific areas, regardless of possible location. The ESFRI roadmap is an on-going process. First published in 2006, with 35 projects, it was updated in 2008 bringing the number of RIs of pan-European relevance to 44. The latest update focusing on projects dealing with energy, food and biology was published in December 2010.

The Roadmap 2016 update process was launched in September 2014 in Trieste. In the framework of this update, ESFRI is expecting proposals for new (or major upgrades of) research infrastructures of pan-European interest corresponding to the long term needs of the European

research communities, covering all scientific areas. Proposals were submitted until 31rst March 2015[25].

In parallel with adding new infrastructures to its roadmap, ESFRI also carries out an in-depth analysis of the research infrastructure landscape in all scientific fields in Europe. The landscape analysis will provide a comprehensive picture of the existing research infrastructures of pan-European scope, including the national/regional research infrastructures that operate international open access. During this analysis ESFRI identified priority projects which are mature enough to be under implementation in 2015-2016 and whose timely implementation is considered essential to extend the frontiers of knowledge in the fields concerned. Based on ESFRI's landscape analysis the Council of the European Union issued a document[26] in May 2014 to advice the member states on focusing their available national resources on prioritised projects. The document recommends support for 15 projects at three different priority levels (See table below).

To be aligned with the Council recommendation EGI-Engage should also focus its engagement and support activities on these 15 projects. Effort for this is available in NA2 (networking) and NA6 (services), with technical implementation activities taking place in JRA1 and JRA2. The below table provides a summary of these 15 projects (in the same order as listed in the Council document), together with on-going and suggested activities for EGI for the better support of these initiatives in the next period.

Prioritisation of Support for Implementation	RI name	On-going/possible support activity in EGI
Priority Projects for implementation	EPOS: European Plate Observing System	Preparatory phase of the EGI-Engage Competence Centre (WP6) has started in March 2015 and continues until approx. Sep 2015. EGI members should join this activity to collect and analyse use cases and define technology plans for support. Cloud computing and AAI in distributed, federated environments have been identified as focus areas of cooperation between EPOS and EGI: In May 2015 EPOS CC defined two pilots to experiment the usage of the EGI infrastructure. The first is on evaluating EGI AAI tools, the latter to integrate EGI resources on the EPOS architecture as ICS-D, a distributed service that provides the EPOS ICS (Integrated Core Services) with resources.
	ELIXIR: The European Life-Science Infrastructure for Biological Information	Preparatory phase of the EGI-Engage Competence Centre (WP6) started in March 2015 and continues until Aug. EGI members should join this activity to collect and analyse ELIXIR use cases and to define respective support technologies through the 'ELIXIR Compute Platform' document. For the next 6 months the focus is on customising some of the EGI

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[25] Towards the ESFRI Roadmap 2016: http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=esfri
[26] Conclusions on the implementation of the roadmap for the European Strategy Forum on Research Infrastructures http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/intm/142794.pdf

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		operational tools (GOCDB, ARGO, APEL) for this platform.
	ESS: The European Spallation Source	Members of the Swedish and Polish NGI started discussions with this community in 2014, however these did not reach mature status until now.
		Representatives of EGI.eu should make high-level contact with the 'Data Management and Software Centre' division[27] of ESS, (based in Copenhagen) to explore possibilities of collaboration (NA2, TSA2.2).
Implementation support	ECCSEL: European Carbon dioxide Capture and Storage Laboratory Infrastructure	This RI does not seem to need any e-infrastructure component that EGI can offer.
	EISCAT-3D: The next generation incoherent scatter radar system	EGI-Engage Competence Centre started in March 2015 with definition of a user portal that structures and makes available metadata and data from the EISCAT_3D stations (WP6).
	EMSO: European Multidisciplinary Seafloor & Water column Observatory	Initial contacts with this community have been established by the Italian NGI and EGI.eu. Collaboration will be scoped and implemented for joint activities in computing in the context of the Indigo DataCloud H2020 project. (Indigo is led by INFN Italy and EGI.eu is in the consortium.)
	BBMRI: Biobanking and Biomolecular Resources Research Infrastructure	Preparatory phase of the EGI-Engage Competence Centre (WP6) started in March 2015 and continues until Aug. During this period the members strengthen connections with the broader BBMRI community and identify relevant use cases from the community that can benefit from EGI services. One of these is foreseen to be the integration of the BioBankCloud PaaS with the EGI Federated Cloud.
	ELI: Extreme Light Infrastructure	A new H2020 INFRADEV-3 project, titled ELITRANS, has been recently accepted by the EC to support the implementation of ELI. EGI.eu is in the project consortium, participating in the activity that will define the service layer for data and computing. Strong collaboration between NGI CZ, HU and RO (host countries of ELI) is important in order to support ELI in forming a coherent view and strategy on computing across the three sites.
	CTA: Cherenkov Telescope Array	Support for this community has been provided initially by France and a few other NGIs through the EGI HTC Computing platform. The CTA computing model will be further defined and evolved within the context of the Indigo DataCloud H2020 project. (Indigo is led by INFN Italy and EGI.eu is in the consortium.)
	SKA: Square Kilometre Array	Different EGI members are directly or indirectly re collaborating with SKA (TSA6.2 in EGI-Engage):

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[27] Staff members of the Data Management and Software Centre division of ESS: http://europeanspallationsource.se/data-management-and-software-centre

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		• Members of LOFAR, one of the pathfinder projects of SKA, are receiving support by IAA in Spain on the use of the EGI Federated Cloud. • EGI.eu is in discussion with ASTRON (NL) and SURFsara (NL) about introducing the 'Science Data Centre Concept' in both LOFAR and SKA, leading these projects to the cloud.
	CLARIN: Common Language Resources and Technology Infrastructure	CLARIN already built its operational infrastructure consisting of identity federation, central services and contributed services. The contributed services are data and software applications and are grouped by certification level (indicating different levels of capabilities or qualities.) CLARIN-ERIC is currently experimenting with one of the EGI Federated Cloud site to see whether it would be a suitable hosting resource for one of its central services, the Virtual Language Observatory (national activity outside of EGI-Engage). Integration of community software with HTC/HPC and cloud resources is considered by the CLARIN-ERIC as national activities that should be explored and implemented by CLARIN nodes and the respective NGIs.
	DARIAH: Digital Research Infrastructure for the Arts and Humanities	EGI-Engage Competence Centre started in March 2015 (WP6). The core activity of the CC is the setup of a science gateway with compute and data catalogue facilities, on top of the EGI Federated Cloud. Two applications (one dataset and one real-time search) will be implemented in this gateway. Additional activities explored by EGI.eu and DARIAH are: (1) Re-use of the EGI collaboration services from CESNET for DARIAH; (2) Use of EGI Core services to operate central services for DARIAH; (3) Collaboration on developing e-infrastructure courses for digital humanities educational curricula.
Support for Sustainability and European Coverage	CESSDA: Council of European Social Science Data Archives	This RI does not seem to need any e-infrastructure component that EGI can offer.
	SHARE: Survey on Health, Ageing and Retirement in Europe	This RI does not seem to need any e-infrastructure component that EGI can offer.
	ESS ERIC: European Social Survey"	This RI does not seem to need any e-infrastructure component that EGI can offer.

4.4.2.2 Action plan for Competence Centres

Each of the EGI-Engage Competence Centres include activities aiming at engaging with the respective Research Infrastructure communities in order to maximise the exploitation of the results of the Competence Centres within those communities. For the next period the different Competence Centres are planning the following activities in this respect:

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Competence Centre	Activity Plan
ELIXIR (TSA2.3)	The CC is collecting use cases, requirements and priorities from the RI community to refine its work plan by • Discussing use cases with the EXCELERATE INFRADEV3 H2020 project. • Collecting use cases from the CC member institutes (and their respective ELIXIR nodes). • Discussing possible use cases with the 'Replicating life science reference datasets into EGI' Virtual Team project. • Collecting input from ELIXIR, EGI, EUDAT and other communities through the 'ELIXIR Compute Platform' vision document.
BBMRI (TSA2.4)	The CC is collecting use cases, requirements and priorities from the RI community to refine its work plan through community events and through the BBMRI-ERIC Common Services ELSI[28] activity.
MoBrain (TSA2.5)	During the next period the CC will be focussed on technical developments in the following areas: • Integrating the Scipion workflow enactor with the EGI Federated Cloud • Setting up a GPU testbed in EGI-Engage and integrating GROMACS and AMBER • Specifying then implementing an entry portal from the WeNMR and N4U solutions, in collaboration with WestLife VRE H2020 project. User engagement activities will start approx. after month 6 (Sept 2015), with writing scientific publications and organising training courses and workshops focussed on the mentioned technical elements.
DARIAH (TSA2.6)	• The Competence Centre is working on establishing a 'Working Group' within DARIAH. This working group would provide better visibility, broader acceptance and possibly even external contributions to the CC from the DARIAH RI community. • The CC works on a questionnaire that will be used within the RI community to collect e-infrastructure requirements from digital humanities researchers and groups. The survey will be sent out in online form to DARIAH contact lists, and will be used to conduct 1-on-1 interviews with representatives of relevant DARIAH Working Groups. • The CC will co-locate its next meetings/workshops with the DARIAH VCC conference in spring 2016 and 2017, and with the EGI User Forums in autumn 2015 and 2016.
LifeWatch (TSA2.7)	Engaging with the LifeWatch community by • The next LifeWatch meetings will likely take place in July, with participation of EGI LW CC representatives. • Another presentation to the whole community will take place in Rome in September, in the European Ecology Meeting[29], showing the

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[28] BBMRI-ERIC Common Services ELSI: http://bbmri-eric.eu/common-services
[29] http://www.europeanecology.org/meetings/

	framework running on the EGI Federated Cloud in a workshop/booth. • Another demo will be given in the EGI User Forum in Bari in November 2015, in close collaboration with the INDIGO-DataCloud team. • Before the end of 2015 at least two workshops/demos will show in Spain the potential of the EGI-LW IaaS and PaaS solutions, using the specific LifeWatch resources being integrated in the EGI Federated Cloud. One of the workshops will be oriented to applications for a LIFE project, another one to management applications for the environmental authorities. Another workshop will address the use by SME. • Finally the CC will engage citizens linked to different biodiversity initiatives, like inaturalist.gbif.es.
EISCAT_3D (TSA2.8)	During the next period the CC is focussed on specifying the scope and architecture of the web portal that would structure data and metadata from the EISCAT_3D stations and would make these available for scientists' queries worldwide. During the architecture definition activity the CC strongly collaborates with the EISCAT_3D Support Project of the Nordic e-Infrastructure Collaboration (NeIC) that, among other things, develops Data Management and Processing Plans for EISCAT_3D. The annual EISCAT Symposiums remain the most important forum to engage with the broader RI community. (Sep 14-18, South Africa)
EPOS (TSA2.9)	The CC is currently in the process of engaging with relevant groups within the EPOS network and within its NGIs in order to collect technical components, user requirements and use cases towards defining an integrated system that can implemented by the CC members. The activity will speed up in autumn 2015, with the start of the EPOS INFRADEV3 H2020 project.
Disaster Mitigation (TSA2.10)	During the next period the CC members will be focused on engaging with local communities in order to collect reliable data for the study of various forms of natural disasters, and to collect requirements concerning enabling international simulations. This activity targets scientific groups and institutes as well as governmental data providers as most appropriate. The CC members also carry out internal training to inform each other on tools, services and techniques that are used and are available from the different countries for disaster prediction and mitigation researchers.

4.4.2.3   Action plan to engage with FET Flagship Initiatives

Future and Emerging Technologies (FET) is the ICT incubator and pathfinder for new ideas and themes for long-term research in the area of information and communication technologies. FET Flagships are ambitious large-scale, science-driven, research initiatives that aim to achieve a visionary goal. The scientific advance should provide a strong and broad basis for future technological innovation and economic exploitation in a variety of areas, as well as novel benefits

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for society. To prepare the launch of the FET Flagships, 6 preparatory actions (Pilots) were funded over a duration of 12 months starting from May 2011. By the end of 2012, beginning of 2013 two of the Pilots were chosen and launched as full FET Flagship Initiatives in 2013: Human Brain Project and Graphene.

Flagship pilot	Status and plans in EGI
The Human Brain Project	Two initial meetings have been held with the representatives of EPFL. Two technical use cases have been identified. Technical specifications for these use cases are under preparation by members of the 'TJRA2.1 Federated Open Data' and 'TSA2.2 Technical User Support' EGI-Engage tasks. Service providers for the use cases are required.
Graphene	An open session on Computational Nanoscience is organised by the Slovakian NGI at the EGI Conference 2015. The session brought together members of the nanoscience community interested in large-scale computational simulations, some of them are members of Graphene. The discussions that started in Lisbon will have to be followed up in the next months. Effort for this is available in TSA2.2 task but contributions from NGIs from national funding is also required for success.

4.4.2.4   Action plan to engage with structured, international communities

4.4.2.4.1   Supporting communities that are already in the pipeline

This table includes those international communities that are currently in the Scoping or Implementation phase of the Engagement workflow[30] and that need further support to become active and self-sufficient users of EGI services.

Community	Status
KM3NeT Research Infrastructure	This RI community is currently in the process of establishing a network of experts interested in e-infrastructures, and collecting initial requirements from them. The idea of a joint KM3NeT – EGI workshop was discussed in 2014, but had to be delayed. Depending on the readiness of KM3NeT, and priorities in EGI, the same idea can be revisited in 2015, ideally through the ASTERICS project (Astronomy ESFRI and Research Infrastructure Cluster) started on the 1st of May 2015.
eLTER (biodiversity)	eLTER has no ICT infrastructure and is looking at using an external IaaS. eLTER's current problem is about data integration rather than computing. The topic of collaboration with EGI was discussed internally at the eLTER kickoff meeting in May. EGI is currently waiting

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[30] Such cases are captured as tickets in the 'technical-support-cases' RT queue. The tickets can be publicly browsed at http://go.egi.eu/technicalsupportcases.

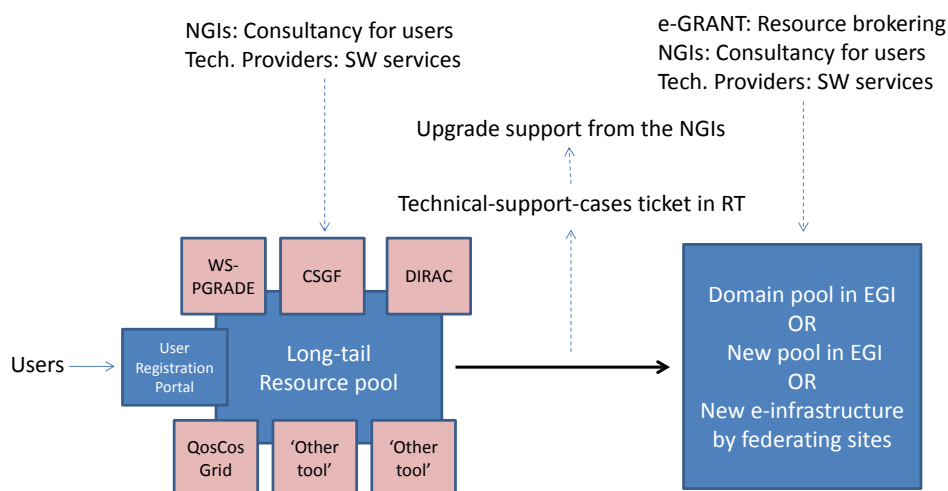|	
	for the outcome of this discussion to be able to proceed. Effort for engagement is available from the LifeWatch CC (TSA2.7) and TSA2.2 (Technical User Support).
PhenoMeNal H2020 project: A comprehensive and standardised e-infrastructure for analysing medical metabolic phenotype data	The project is interested in using the EGI Federated Cloud. Initial requirements have been collected and will be discussed during a face-to-face meeting at the EGI Conference 2015. The case is followed up by members of TJRA2.2 and TSA2.2.
DRIHM hydro-meteorology community	DRIHM team completed the integration of various hydrological models with EGI grid and cloud platforms into its community science gateway. The long-term operation of these models on EGI requires commitments from the respective Resource Providers. This can be arranged with the setup of an SLA between EGI and the DRIHM community. The setup of an SLA has recently started and will continue in the next period with effort from TSA1.1 (Operations Coordination).
VERCE VRE for data-intensive seismology	Resources, a VRE portal and applications on DCIs have been established in VERCE with EGI's support. Next step is to discuss the long-term needs for resources with VERCE and long-term commitments of EGI Resource providers. One of the EPOS pilot (TSA2.9) will focus on an application from VERCE community (MISFIT) with support from TSA1.1 (Operations Coordination)..
European Space Agency	ESA is interested to the cloud resources capacity offered by the EGI Federated Cloud. Two implementation activities started recently to integrate the e-Collaboration for Earth Observation (e-CEO) platform and the Stimulus project with the EGI Federated Cloud. In both cases, ESA expressed interested on the EGI pay-for-use model. Work continues in TNA2.3 (SME/Industry Engagement and Big Data Value Chain) and TSA2.2 (Technical User Support).

4.4.2.4.2   Engaging with new H2020 projects

The H2020 provides structure and focus for several research communities through new EC co-funded projects. The EGI Engagement board must pro-actively monitor the landscape of newly started H2020 projects and identify those that would be suitable partners for EGI in serving the ERA. Collaborations must be formalised with these projects wherever possible through MoUs.

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The European Commission CORDIS search website[31] can be used for finding the projects that are funded in specific calls or include specific keywords. The first set of projects that should be considered for engagement are those that have been accepted in the EXCELLENT SCIENCE – RESEARCH INFRASTRUCTURES INCLUDING E-INFRASTRUCTURES programme (the same programme where EGI-Engage is funded). The list of these projects was obtained from the CORDIS website on the 22/May/2015 and it is provided in Appendix A. Additional projects will be considered as they appear in the CORDIS page. EGI-Engage NA1

4.4.2.5 Action plan for improved support for the long-tail of science

Improved support for the long tail of science is to be reached through improving support for the NGIs. This is achieved by a software integration and policy development project that creates a technical platform, the 'EGI Platform for the Long-tail of science'. The platform drives new users from the long tail onto an international resource pool that is operated from resources contributed by EGI's resource providers for the long tail of science. After registration the users can consume their capacity allocations from the pool through those interfaces and environments that are available 'around the pool' (See figure below). If they wish to continue using EGI after their allocation is consumed, then they need to move from the long-tail pool to a community pool (VO) which can be implemented with the support of the NGIs: Moving to an existing domain VO or setting up a new VO in EGI or setting up a new e-infrastructure by federating community resources using EGI technology.

The following milestones have been reached recently by the long-tail platform development project:

- The User Registration Portal was implemented and integrated with EGI SSO identity provider (CYFRONET, JRA1.5).

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[31] European Commission CORDIS website – project search: http://cordis.europa.eu/projects/home_en.html

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- Support for user-specific proxies has been added to the CREAM middleware, and OpenNebula and OpenStack cloud management frameworks (INFN, CESNET, CSIC, external contributions).
- The user-specific proxy generation service was developed that translates EGI SSO accounts to user-specific X509 proxy certificates (INFN, external contribution).
- An international resource pool (VO) for the long tail was created from contributed NGI resources (sites under discussion, external contribution).

The following actions need to be completed during the next period for full implementation and adoption of the platform within volunteering NGIs and even within interested scientific communities (connected to their community VOs):

- Integrating grid and cloud computing resources in the virtual organisation for the long tail. Formalise commitments with lightweight OLAs.
- Rollout of the new releases of the updated grid and cloud middleware services to sites that participate in the long-tail VO.
- Integrate interested science gateways / environments with the User Registration Portal and with the user-specific proxy generator service, and then connect them to the long-tail VO. The first gateways/environments that expressed interest in joining the platform are
  - WS-PGRADE
  - Catania Science Gateway Framework
  - DIRAC4EGI
  - QosCosGrid
- Perform integrated tests on the setup then begin promotion campaign of the platform to the NGIs and to scientific communities who operate science gateway-based access points for their users.
- Engage with interested NGIs and scientific communities and train their local user support teams on the usage of the platform for the support of long-tail scientists.
- Investigate the status of identity and attribute release from EduGAIN IdPs, decide about, and implement EduGAIN integration with the User Registration Portal and with the science gateways. (To enable user login with EduGAIN IDs besides EGI SSO IDs.)

4.4.2.6   Action plan to engage with SMEs and industry

The EGI Business Engagement Programme was discussed by the EGI Council on 12 February 2015. The main feedback was to define priorities to the various areas to ensure that effort matched available resources and effort was spent on high impact activities to increase return on investment. As a result of the first in a series of business related sessions at EGI events held within the EGI Conference 2015 in Lisbon[32], a set of initial short- to medium-term actions were prepared, discussed and agreed, which will be periodically analysed and revised.

Priority 1: Focusing on developing partnerships with European and National Initiatives able to serve as "multipliers".
Priority 2: Targeting SME/industry as consumers to 1.) Support the usage of EGI services and 2.) Understand the requirements for developing/enhancing services.

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[32] https://indico.egi.eu/indico/conferenceTimeTable.py?confId=2452#20150521

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Priority 3: Incorporating SME/Industry as providers to 1.) Integrate products and services within EGI 2.) Establish bulk-licensing agreements 3.) Endorse external services and make visible through EGI marketplace.

Priority 4: Developing and validating a re-usable model that can be adopted and adapted for a wider number of NGIs/Resource Centres.

General Actions (with effort from NA2.2 Strategy, Business Development and Exploitation and NA2.3 SME/Industry Engagement and Big Data Value Chain):

- Promote business engagement programme
  - EGI website page, marketing material, networking, event organisation
  - Liaise with EU and National organisations
- Facilitate the connection of EGI with SMEs at a European and National level
  - Leverage existing partner contact networks
  - Establish collaboration agreements with strategic industry partners
- Understand the requirements from SMEs
  - Top-down through market analysis
  - Bottom-up through identified use cases (agriculture, marine and fisheries)
- Attract SMEs to explore opportunities around Open Data and co-develop business models for their exploitation
  - Identify stakeholders and related interests, as well as competing players
  - Determine value chains and revenue streams
  - Provide recommendations of how to address the opportunities
- Create a model (similar to a master franchise) for SME engagement based on achievements and lessons learnt that will be put in practice, adopted and adapted for a wider number of NGIs/Resource Centres

Specific Actions:

A number of opportunities have already arisen that will be used as concrete stepping stones moving forward. Each is described in the following table.

Organisation	Action Plan

Big Data Value	The European Commission has recognised the value of data as the new "oil" of the economy and started to take steps towards a EU data-driven economy. One of these steps was the signature of the Big Data Value Public-Private-Partnership in October 2014.
	
	EGI recently became a member of BDVA. In addition the organisation participation the following actions have been identified:
	
	• BDVA has identified 5 technical priorities:
	  ○ EGI FedCloud to review 1 (Data Management), 2 (Optimized Architecture), 4 (Privacy and Anonymisation Mechanism)
	  ○ Regarding 5 Advanced Visualisation and User Experience) there are existing visualization tools for big data analytics - EGI could serve as a hub e.g. visivo
	• Innovation Spaces
	  ○ Already discussing how to include 2 EGI uses cases agINFRA

	and iMarine ○ Coordinate through EGI FedCloud for the identification of others • Monitor upcoming proposals for cPPP

FIWARE	FIWARE is an open initiative, co-funded by the EC, to support European SMEs and Web Entrepreneurs.
	
	EGI has been in discussions with FIWARE to identify collaboration opportunities, specifically on how future joint offers between FIWARE and EGI can ensure long-term sustainability supporting innovation inside and outside H2020. Specific actions include establishing a collaboration agreement to:
	
	• Technical analysis of EGI FedCloud and FIWARE Ops via OpenStack
	     ○ FIWARE to send technical specifications in order to send a "request for participation" to the EGI FedCloud
	     ○ EGI to present core services to FIWARE providers
	• Business analysis of future sustainability models for EGI to support FIWARE beyond project life.

UberCloud	UberCloud is a German SME offering a marketplace of HPC in the cloud packages known as "containers" with documented use cases. It has created a community of more than 3000 SME representatives working hand-in-hand to increase actual adoption of the available services. Having extensive experience in direct SME engagement, EGI is looking to establish a collaboration agreement in order to: • Shape EGI service descriptions for inclusion in the UberCloud marketplace that is presented in a way that is attractive to SMEs • Facilitate the interaction with SMEs interested (e.g. webinar) • Exchange experience for outreach/marketing and input to the EGI marketplace • Identify potential containers to run on EGI FedCloud
Use Case: Agriculture	agINFRA, the European hub for agri-food research and the domain-specific node for OpenAIRE, Big Data Europe and FIWARE. Through EGI-Engage partner Agro-Know, efforts will be focused on how EGI can support the related institutions and companies working on agri-food topics, specifically: • Analyse the agri-food research sector in EU and beyond • Define personas and scenarios • Link with FI-PPP (and more) accelerator projects • Collect requirements to identify opportunities to feed into EGI
Use Case: Marine and fisheries	The scientific data collected and knowledge generated from the marine/maritime research represent an important value for a number of industries and policy-makers. The work leverage on the Sustainability plan of iMarine and introduce the sustainability strategy of BlueBridge to: • Analyse legal barriers in sharing fishery & marine sciences datasets

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	• Define a framework of legally relevant instructions to data providers and consumers • Enable the IT resources and data available from D4Science and other EGI sites to be exploited by fishery and marine researchers, industries and other maritime actors. • Demonstrate the feasibility of the business model proposed
Others	Terradue: Integrating platform for European Space Agency exploitation for cloud bursting Earth Science applications and services European Space Agency: Collaboration to technically analyse interfaces between EGI FedCloud and ESA for involvement in Stimulus Projects Helix Nebula: EGI has been involved since the beginning via the Helix Nebula FP7 project, which has continued beyond the project funding. EMSO: European Multidisciplinary Seafloor and Water Column Observatory are in the process of finalizing an ERIC legal entity. They are looking for distributed data cloud as they are not interested in managing the infrastructure. Establish communication with EGI FedCloud. UPENN Environmental Network - Science and industry partnerships: Provided a request for EGI services with an initial list of requirements proposed that need to be analysed. I4MS[33]: ICT Innovation for Manufacturing comprising more than 200 SMEs. Initial contact needs to be established. SHAPE: SME HPC Adoption Programme in Europe – As the computing paradigm advances, there an increasing need for all areas of computing to work together. SHAPE is one programme to explore collaboration opportunities. Knowledge Transfer Offices: Knowledge Transfer Partnerships (KTP) in the UK has been a proven means for example in the UK for helping businesses improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. This is seen as an opportunity to explore existing national programmes for NGIs to engage. EGI Industry Contacts: Currently 25 organisations in DB at various levels of maturity comprising SME/Industry as consumers, providers, tech developers, brokers and resellers, amongst others. Strategic partnerships are being identified together with several NGIs as the project progresses.

4.4.3   Action plan for Virtual Team projects

The Virtual Team framework[34] enables NGI and EGI.eu staff to initiate and participate in short-lived projects (also known as Virtual Team projects) that focus on activities that are relevant to the

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[33] http://i4ms.eu
[34] https://wiki.egi.eu/wiki/Virtual_team

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uptake and use of the production infrastructure. Virtual Teams can cover areas such as Marketing & Communication; Strategic Planning and Policy Support; Community outreach and events for new users; Technical outreach and support to new communities. Virtual Team projects typically focus around new communities and/or sustainability. The framework allows the EGI community to plan all related activities in conjunction and collaboration with the NGIs and can help integrate and align effort from multiple projects and countries. The VT project framework is open to all NGIs, countries and regions that are involved or collaborate with EGI. These entities can join existing Virtual Teams and can propose new Virtual Teams.

Promoting Desktop Grids	**Outputs:** WeNMR became user of the technology; Newsletters; Website for EGI users (http://crowdcomputing.eu). DGs are on the map of EGI (See Tiziana's keynote slide) **Next step:** Close the VT.
Support for genome analysis and protein folding	**Outputs:** READemption, Trufa, Chipster, RSAT applications have been implemented in the EGI Federated Cloud. Improved information on tools and applications from the domain in the Applications Database. **Next step:** Closing the VT. Some of the activities to continue in the 'Integrating life science reference datasets within EGI' Virtual Team.
Integrating life science reference datasets within EGI	**Outputs so far:** User survey identified 2 specific dataset replication test cases. Existing data replication tools have been identified. Application Database has been extended with Dataset registry capabilities (Pilot version). **Next step:** Analyse the two test cases, identify most suitable dataset replication approach and tools for implementation.
Scalable access to Federated Data	The activity sets up a distributed, multi-national testbed in EGI where various data federation tools and services will be deployed and tested by the members against user community requirements. The first set of requirements will be captured from the Human Brain Project and will be used during the setup of the testbed. Requirements from additional communities (especially the Competence Centres) will be captured too.

4.4.4 Contributing to scientific events

The below table summarises those events that will be organised during the next period outside of EGI, offering good opportunities for EGI members to meet and engage with priority RIs and scientific communities, with members form the long tail of science and industry. The table provides information on the value of EGI contribution/presence at these events, as well as who is responsible within EGI for following-up the activity.

Event	Date and venue	Suggested Contribution AND Action Owner	Value of attending and possibly contributing to the event	Decision (participate? Who?)
ELIXIR Data Carpentry	June 22-25, Utrecht,	The event will include a two-day hackathon to develop and improve teaching	Success EGI contribution could reach large number of scientists who work	No EGI-Engage member is

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workshop	NL	materials for computational methods in life sciences. EGI representatives could contribute with the development of a module that's focussed on performing computational methods on EGI e-infrastructures.	with computational methods in life sciences and could contribute to building a sustainable user base for e-infrastructures from life sciences.	available to attend and contribute.
Software Carpentry workshop	July 15-17, SAP Offices, Feltham, UK	Accepted training Tutorial on the EGI Federated Cloud. To be delivered by Diego (INFN-EGI.eu) and Gergely (SZTAKI-EGI.eu).	Reaching SW developers various science disciplines and promote the EGI Federated Cloud to them. Pilot repeatable course on EGI Federated Cloud.	YES, EGI.eu
HPCS Conference	July 20-24, Amsterdam, NL	Accepted training Tutorial on the EGI Federated Cloud. To be delivered by Enol (CSIC-EGI.eu) and Yin (EGI.eu).	Reaching researchers from HPC, HTC, cloud and big data domain and promote EGI Federated Cloud to them. Pilot repeatable course on EGI Federated Cloud.	YES, EGI.eu
BioSHaRE workshop on latest tools and services on data sharing in biobanking	July 28, Milan, Italy	Programme is already defined. EGI representatives from BBMRI and data sharing topics to consider attending.	Hear about initiatives in data sharing, access and federations from the biobanking domain. Opportunities to find groups and projects that could be linked to EGI FedCloud, Data federations, life sciences and Data accounting activities.	TBD
EISCAT Symposium	Sept 14-18, South Africa	Workshop or discussion session 'Towards an EISCAT_3D DMP and portal' (Ingemar)	Liaise with the RI community NeIC project to capture details on the requirements of the EISCAT_3D data and metadata portal.	TBD
National e-infrastructure for science and its role within the research infrastructure roadmap (Romania)	Sept 10-11, 2015.	Alexandru Nicolin (NGI International Liaison of Romania)	Support the NGI institutes in engaging with national user communities in order to build a national roadmap for e-, and research infrastructures, as well as a stronger and more sustainable NGI.	YES, NGI RO Possibly EGI.eu representative
Final BioMedBridges	Nov 17-18, EBI,	An e-infrastructure workshop with the interested CCs, and	Expose recent e-infrastructure	Exhibition booth by EGI,

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Symposium: Open bridges for life science data	Hinxton, UK	with SZTAKI-EGI.eu)	EUDAT?	(Gergely,	achievements from life science to the biomedical RIs and build joint workplans with them.	possibly sharing with other e-infrastructures. Some of the CC representatives?

4.4.5 Further ideas to explore

During the Engagement Strategies session of the EGI Conference event the following additional ideas have been captured as action points for the next period:

- Explore the possibilities, benefits and cost-value of deploying and operating an application registry front-end on the EGI long-tail platform based on the Application Catalogue of the Polish NGI (after translation to English).
- Explore interest for establishing two Virtual Teams:
  - o Computing needs for ELI: By bringing together NGI CZ, HU, RO representatives and possibly some of the members of the ELI-TRANS project, explore the most suitable applications and e-infrastructure setup for the ELI research infrastructure.
  - o Reach out to scientists through university service providers: Create materials that can be effectively used by the NGIs to reach out to IT service providers at universities, and through them to reach science groups and communities. Perform pro-active reach-out in a few NGIs in the VT.

Appendix I. List of H2020 EXCELLENT SCIENCE - INFRA projects

This is the list of projects that have been accepted in the EXCELLENT SCIENCE – RESEARCH INFRASTRUCTURES INCLUDING E-INFRASTRUCTURES programme. The information was obtained from the EC CORDIS Website on 22/May/2015.

Project Title	URL
Agile Analytics on Big Data Cubes	http://cordis.europa.eu/project/rcn/196704_en.html
PRACE 4th Implementation Phase Project	http://cordis.europa.eu/project/rcn/196680_en.html
Authentication and Authorisation for Research and Collaboration (AARC)	http://cordis.europa.eu/project/rcn/196642_en.html
Astronomy ESFRI and Research Infrastructure Cluster	http://cordis.europa.eu/project/rcn/196641_en.html
Research Infrastructures Training Programme	http://cordis.europa.eu/project/rcn/194941_en.html
Supercomputing Expertise for Small and Medium Enterprise Network	http://cordis.europa.eu/project/rcn/194966_en.html
Joint European Research Infrastructure network for Coastal Observatory – Novel European expertise for coastal observatories	http://cordis.europa.eu/project/rcn/194965_en.html
Design Study for the European Underground Research Infra-structure related to Advanced Adiabatic Compressed Air Energy Storage	http://cordis.europa.eu/project/rcn/194964_en.html
European Circular Energy-Frontier Collider Study	http://cordis.europa.eu/project/rcn/194962_en.html
Access to European Nanoelectronics Network	http://cordis.europa.eu/project/rcn/194961_en.html
Extending the Ocean Data Interoperability Platform	http://cordis.europa.eu/project/rcn/194958_en.html
European Long-Term Ecosystem and socio-ecological Research Infrastructure	http://cordis.europa.eu/project/rcn/194957_en.html
Phenomenal: A comprehensive and standardised e-infrastructure for analysing medical metabolic phenotype data	http://cordis.europa.eu/project/rcn/194953_en.html
Energising Scientific Endeavour through Science Gateways and e-Infrastructures in Africa	http://cordis.europa.eu/project/rcn/194952_en.html
Support to Reinforce the European Strategy Forum for Research Infrastructures	http://cordis.europa.eu/project/rcn/194950_en.html
TransAfrican Network Development	http://cordis.europa.eu/project/rcn/194949_en.html
Environmental Research Infrastructures Providing Shared Solutions for Science and Society	http://cordis.europa.eu/project/rcn/194947_en.html
Advanced European Infrastructures for Detectors at Accelerators	http://cordis.europa.eu/project/rcn/194944_en.html
Connecting Russian and European Measures for Large-scale Research Infrastructures	http://cordis.europa.eu/project/rcn/194943_en.html
European Holocaust Research Infrastructure	http://cordis.europa.eu/project/rcn/194942_en.html
Engaging the EGI Community towards an Open Science Commons	http://cordis.europa.eu/project/rcn/194937_en.html
Leaders Activating Research Networks: Implementing the LERU Research Data Roadmap	http://cordis.europa.eu/project/rcn/194936_en.html

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and Toolkit	
Solid-State Neutron Detector - A new Neutron Detector for High-Flux Applications	http://cordis.europa.eu/project/rcn/194934_en.html
Pooling Activities, Resources and Tools for Heritage E-research Networking, Optimization and Synergies	http://cordis.europa.eu/project/rcn/194932_en.html
Aerosols, Clouds, and Trace gases Research Infrastructure	http://cordis.europa.eu/project/rcn/194931_en.html
EUDAT2020	http://cordis.europa.eu/project/rcn/194928_en.html
THOR – Technical and Human Infrastructure for Open Research	http://cordis.europa.eu/project/rcn/194927_en.html
Open Mining Infrastructure for Text and Data	http://cordis.europa.eu/project/rcn/194923_en.html
Global Infrastructures for Supporting Biodiversity research	http://cordis.europa.eu/project/rcn/194919_en.html
GÉANT Research and Education Networking - Framework Partnership Agreement Proposal	http://cordis.europa.eu/project/rcn/194918_en.html
Getting Ready for EST	http://cordis.europa.eu/project/rcn/194915_en.html
Research Infrastructures for Phenotyping, Archiving and Distribution of Mouse Disease Models - Promoting International Cooperation and User Engagement to Enhance Biomedical Innovation	http://cordis.europa.eu/project/rcn/194913_en.html
Infrastructure for NMR, EM and X-ray crystallography for translational research	http://cordis.europa.eu/project/rcn/194892_en.html
Integrating Distributed data Infrastructures for Global Exploitation	http://cordis.europa.eu/project/rcn/194882_en.html
Research Data Alliance - Europe 3	http://cordis.europa.eu/project/rcn/194834_en.html
Research Infrastructures Consortium for Horizon 2020	http://cordis.europa.eu/project/rcn/194468_en.html
Open Access Infrastructure for Research in Europe 2020	http://cordis.europa.eu/project/rcn/194062_en.ht