



EGI COMPETENCE CENTRES

Call for Participation

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1 Executive Summary

The Competence Centre is an instrument which EGI is implementing to:

- Ensure continued support to existing and prospective user communities from academia and industry,
- Meet new user requirements by:
 - supporting technical development of EGI services of the core infrastructure platform, federated cloud platform and high-throughput data analysis platform;
 - testing, integrating and adopting new ICT technologies that have a broad impact on user communities and significant potential for exploitation to ensure the evolution of the EGI service portfolio;
- Facilitate the adoption of EGI services by funding the technical integration of Virtual Research Environments to EGI services

EGI launches a call for participation to Competence Centres.

Competence Centre proposals will undergo a selection process. Selected centres will become part of the work programme of the EGI-Engage project proposal for submission to the EC Horizon 2020 Call “European research infrastructures (including e-Infrastructures)”, EINFRA-1 Topic, to address Activity 6¹:

*“Support to the **evolution** of EGI (European Grid Infrastructure) towards a flexible compute/data infrastructure capable of federating and enabling the sharing of resources of any kind (public or private, grid or cloud, etc.) in order to offer computing and storage services to the whole European scientific community. The proposal will address operations for supplying services (IaaS, PaaS, SaaS) at European level, **engagement of and tailoring of services to new user communities** and dissemination activities.”*

The selected CC proposals will result in the creation of a network of competence centres, i.e. EGI distributed competence centres, fostering e-Science support at a pan-European level.

Competence Centres are referred to in brief as CC in the rest of the document.

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<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2137-einfra-1-2014.html>

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IMPORTANT DOCUMENT FOR PARTICIPATING TO THE CALL (available at <https://documents.egi.eu/document/2187>):

1. EGI Competence Centre – Call for Participation (this document): defining the activities of the CC, its objectives and roles of participants.
2. EGI Competence Centre – Terms of Reference: providing information on funding, rules for participation, budget, the selection process and deadlines.
3. Competence Centre Template: the template to be used to submit a CC proposal.



2 Competence Centre Activities

The CC bridges networks of existing and prospective research communities from academia and industry, enabling experts and service providers to carry out the following activities:

1. Define ICT requirements of research communities, and, in order to satisfy them, exploit new ICT technologies, extend EGI services, adapt Virtual Research Environments (mandatory),
2. Testing the functionality and the scalability of needed capabilities in testbeds (mandatory),
3. Testing the functionality and the scalability of needed capabilities in pre-production environments, involving NGIs resources, as well as resources and services from RI infrastructures (if applicable)
4. Integrate new RI resources and services into the EGI production infrastructure with the support of the related NGIs (if applicable)
5. Define production requirements like service levels, reporting, support levels etc. (if applicable)
6. Provide user support and training (mandatory).

2.1 Technical support and training

- Provide on-demand technical support to prospective users and the EGI community at large
- Promote existing and new EGI services, use cases and success stories in collaboration with champions in the centre's area of competence
- Organize seminars and training, produce webinars, deliver on-line courses and produce on-line material

2.2 Integration and innovation

- Technically develop and extend EGI services: authentication, authorization, identity management, accounting, information discovery (core infrastructure platform); data management, storage management and workload management in grid; IaaS, PaaS and SaaS services of the EGI federated cloud
- Test, integrate and adopt new ICT technologies and services that have a broad impact by addressing user community requirements with large potential of exploitation, to ensure the evolution of the EGI service portfolio
- Facilitate adoption of EGI services by funding the technical integration of Virtual Research Environments to EGI services and participate in application porting

2.3 Testing and exploitation of new service capabilities

The CCs will test new service capabilities, run scalability tests and roll out services in pre-production, as well as plan the exploitation phase of services (when applicable). Service providers participating in the CC will:

- Provide resources for testing, scalability testing, pre-production (when applicable), and exploitation

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- Integrate the operations of new data/compute centres into existing EGI national e-Infrastructures, when necessary, to support testing
- Assist user communities to define production-phase service requirements (resource capacity, type of services, SLAs and related service levels, etc.)

The CCs bridge a network of users and experts facilitating the development and provisioning of needed ICT services.

Each CC mobilizes specialized expertise available from within the community and makes this expertise easily accessible to users and service providers by providing a well-defined contact point in various thematic areas.

The CCs provide services starting from the engagement phase to the pre-production phase.

3 Types of competence centres

- **Technology-oriented CC:** Technology-oriented CCs provide support on specific ICT services and technological areas. A technology-orientated CCs can focus on specific cross-cutting topics, like security, AAI services and federated identity provisioning, big data analytics on grid and cloud of distributed data, technical interoperability between e-Infrastructure services, etc. Any user community, regardless of its discipline, can benefit from the innovation and support services provided by this type of CC.
- **Science-oriented CC:** The science-oriented CCs will support the requirements of communities belonging to a specific set of research disciplines, addressing specific application domains, such as medicine, life science, energy, environmental research, etc.

4 Target user Communities

The CCs will provide support to these different types of user communities:

- FET Flagships and large-scale, science-driven research initiatives
- Research infrastructure initiatives, such as ESFRI projects, other world class research infrastructures, ERICs
- International user communities
- Industrial user communities with a European footprint

The CC support activities that will be funded in EGI-Engage, will be complemented by support to long-tail and SMEs, which is provided by the NGI user support teams as part of the services provided by the NGI to the local community.

The CC proposals selected will form a network of competence centres, i.e. the “EGI distributed competence centre”, allowing e-Science support at a pan-European level.

5 Roles in the CC

Participants in the CCs are a distributed network of partners. A partner will contribute one or more of the following roles. A CC provides all of the roles below.



5.1 User support team

A team of experts who assist user communities to define ICT needs and translate these into technical requirements, training programs and courses etc.

Who contributes to this role:

- NGI/EIRO user support teams and user support teams from other collaborating e-Infrastructures in Europe and worldwide
- Technology providers
- Experts from other e-Infrastructures collaborating with EGI (e.g. EUDAT, PRACE, and other international e-Infrastructures)

5.2 Developers' team

A team of expert software developers will contribute to the extending existing EGI services with new functionalities, testing new ICT technologies, extending Virtual Research Environments and participating in software design, development, testing, and prototyping.

Who contributes to this role:

- NGI/EIRO technical developers teams
- Expert users: have the knowledge needed to formulate the ICT needs for their research programme and participate to co-development by extending their Virtual Research Environment to adapt them to existing and prospective EGI service capabilities.
- Technology providers (from academia, SMEs, industry)
- Developers from other e-Infrastructures collaborating with EGI

5.3 Service providers' team

This is a group of service providers who offer resources for the pre-production exploitation of the services. This team is responsible for the operations integration of new data/compute centres into the EGI production infrastructure.

Who contributes to this role:

- EGI service providers like NGIs/EIROs
- User community data/compute centres that need to be integrated into EGI
- Other collaborating e-Infrastructures in Europe and worldwide collaborating with EGI

6 Integration and innovation

The CCs will engage with the research communities relevant to the CC in a combination of mini-project activities for integration and innovation. Path-finding mini-projects have a maximum duration of 12 months and/or lighthouse mini-projects that have a maximum duration of 24 months.

- Develop new capabilities for EGI services including: authentication, authorization, identity management, accounting, information discovery (core infrastructure platform); data management, storage management and workload management in grid; IaaS, PaaS and SaaS services of the EGI federated cloud

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- Integrate new services that will enrich existing EGI service platforms and which have the potential to serve a large user base, and be exploited at EGI.eu and/or NGI/EIRO level
- Integrate existing Virtual Research Environments to EGI current and future service capabilities, application porting

The mini-project activities are an integral part of any CC proposal. The mini-projects will be reviewed and selected. Approved mini-projects will become an integral part of the EGI-Engage project proposal Description of Work.

Mini-projects can have a duration **from 3 to 24 months** depending on the amount of development work to be carried out:

- **From 3 up to 12 months** for a “path-finding” mini-project,
- **From 13 up to 24 months** for a “lighthouse” mini-project.

For more information about the mini-projects see the Competence Centre Terms of Reference.

6.1 Path-finding mini projects

A path-finding mini-project has duration of between **3 and 12 months**.

A path-finding project aims to:

- Integrate existing EGI services and Virtual Research Environments where no major new development is needed,
- Perform application porting,
- Investigate the potential to initiate new full projects.

The results of path-finding mini-projects have a short-term exploitation potential.

In case additional development of virtual research environments is needed, user-communities will contribute in-kind free effort to the mini-project to complete this work.

6.2 Lighthouse mini projects

A lighthouse mini-project has duration of between **13 and 24 months**.

A lighthouse mini project aims to:

- Develop new EGI service features,
- Testing and adapt new ICT solutions for deployment in EGI,
- Integrate EGI service capabilities (current and/or prospective) to user communities' virtual research environments.

In case additional development of virtual research environments is needed, user-communities will contribute in-kind free effort to the mini-project to complete this work.



7 Coordination of CCs

EGI.eu will promote the activity of the CCs, attracting user communities and creating opportunities for new collaborations and support activities. EGI.eu is responsible for coordinating the CC activities to ensure that CCs can effectively share activities and best practices, and work in a coordinated fashion. EGI will provide collaborative tools and services to support the daily work of the CCs. Tools, processes and manpower for the distribution, validation, verification and deployment of the software produced by a CC will be available to support the software testing and pre-production activities of the CC.

The collaboration between EGI-Engage CCs, the NGI user community support activities conducted nationally, and existing national e-Science centres, is encouraged in order to develop synergies, ensure national user communities are reached, and to avoid duplication.

8 CC contribution to the EGI Strategy

The EGI strategy (<http://go.egi.eu/strategy>) addresses the need of “researchers from diverse scientific disciplines taking approaches to data analysis. These will need to work seamlessly together in a distributed multi-disciplinary research collaborations that cross national and intellectual borders to tackle society’s grand challenges”.

According to the strategy, this need will be met through different strategic activities, including:

1. the adoption of “**a defined service portfolio and a user-centric approach to its development that will expand EGI’s current service offering** from EGI.eu and affiliated NGIs to retain its current research communities and attract new research communities”,
2. the “**Provide Flexible Virtual Research Environments that simplify access to EGI’s resources and accelerate the ability of researchers to undertake excellent science** by leveraging the expertise and connections of the NGIs to introducing technical innovations”,
3. the development of “**the EGI’s Human Capital to upskill the research communities supported by EGI in establishing within NGIs national centres of excellence that can transfer skills from within EGI to tomorrow’s data scientists**”.

Each CC will integrate NGI experts, user community experts, technology providers and service providers to support the needs of existing and prospective user communities.

The CCs will contribute to the implementation of the EGI strategy as follows.

EGI Strategic objective addressed	Competence Centre activity
Develop the service portfolio through user-centric innovation and co-development	User communities and technological partners will participate in the Competence Centre by defining requirements and by contributing directly to service

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	development and integration activities.
Technical innovation	<p>The Competence Centre provides the technical expertise necessary to understand user requirements, translate these into ICT needs, identify existing solutions available and the integration/development activities needed, and engage in testing of new technologies.</p> <p>The purpose of the Competence Centre is not to conduct research, but to reuse existing technologies and integrate them, or to implement extensions in order to make technologies more usable by Virtual Research Environments and turn them into EGI services.</p>
Easy to use Virtual Research Environments tuned to the needs of specific research communities	<p>EGI will facilitate the development of these services through the CCs, by bringing together research communities, technology experts and service providers to define, co-develop, test, deploy into production the services that researchers need.</p> <p>EGI can provide a mechanism to sustainably operate those services that enter widespread use within the ERA and evolve the service offering to meet the needs of those that use them during Horizon 2020 and beyond.</p>
Development of the human capital	<p>Through the CCs the manpower networks of EGI can expand to include user communities and technology providers, so that the best expertise can be made available and each component of the network can effectively collaborate with others.</p>
Development of the skills needed by member states researchers' to access and effectively use new technologies needed to exploit the data emerging from the excellent science being undertaken nationally as part of the ERA	<p>The CC will provide consultancy, hands-on training, and will be engaged in porting existing applications to existing and new services.</p>