



# Joining the EGI Federation





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# About EGI

## EGI – Advanced computing for research

### Vision:

all researchers have seamless access to services, resources and expertise to collaborate and conduct world-class research and innovation

### Mission:

deliver open solutions for advanced computing and data analytics in research and innovation

The EGI Federation is an international infrastructure that provides advanced computing and data analytics services for research and innovation. The federation is composed of providers from national/ community initiatives forming one of the largest distributed computing infrastructures for researchers.

EGI delivers technical and support services at European and global scale including high-throughput and cloud computing, storage and data management, analytics, consultancy and support, training and co-development.

The impact of the EGI Federation is broad and diverse. We support all kinds of research. Examples include finding new tools to diagnose and monitor diseases such as Alzheimer's, developing complex simulations to model climate change, searching for gravitational waves, and pursuing the dark matter.

We continuously innovate our services and technology, foster international collaborations and knowledge sharing, and finally, create opportunities for professional development and acquiring know-how.

## EGI Federation 2021 in numbers

**50.8M**

Cloud CPU hours consumed

**27**

EU funded projects

**450.3M**

Computational jobs

**+78,100**

Users

**1230<sup>1</sup>**

Enabled articles

**28**

EGI Council participants

**6.5B**

HTC CPU hours consumed

<sup>1</sup>Based on OpenAIRE portal statistics for open access publications and community repositories.



# Our impact

## Research

Our large-scale computing and data analytics services are helping scientists to accelerate the process leading to research outputs

### More capacity – Faster results

- More than 4 million years of compute time (2011–2022)
- More than 1 million computing cores

### Diverse services

- Flexible research
- Platforms and service portals
- Different computing architectures
- Storage and data management

### High quality – High impact

- From small science to big science and beyond
- More than 1230 peer reviewed open access scientific papers published in 2021 and over 29.000 articles in total
- Contribution to 2 Nobel prizes

## Innovation

We continuously innovate our services and technology to meet the needs of researchers worldwide

### Cloud container service – package your application and run everywhere

- New ways to package and run scientific applications

### Federated authentication – more login options to EGI services

- Check-in serves more than 100 connected service and 4,000 identity providers
- the services facilitates on average 2,500 logins from 3,200 registered users per month

### Improved Service Level

#### Agreements – clear guarantees

- Tens of research projects supported by SLAs

### New analytics platforms

- Jupyter Notebooks and Galaxy as a service

## Collaboration

We foster international collaborations and knowledge sharing

### Accelerating co-creation and development

- 23 scientific communities engaged in 2021
- over 48 research infrastructures currently uses our services with 14 of them being on the ESFRI roadmap

### Being a trusted service & technology partner

- in 2021, EGI started to collaborate in 12 new EU funded projects, contributing to a total of 26 projects.

### Promoting innovation

- Recently launched EGI DIH (Digital Innovation Hub) programme supports SMEs in their digital transformation
- Tens of SMEs/industries engaged

## Skills and Expertise

We create opportunities for professional development and acquiring know-how

### Increased service management expertise

- EGI has recently hit 1000 FitSM certificates

### Increased diversity of technical training in distributed computing

- Contributed to tens of training events and workshops
- 600 participants from 20 different countries attended our 14 webinars organised in 2021

"The EGI Federated Cloud helped us to focus on scientific solutions and results instead of resource management and system administration"

**Konrad Förstner**

Researcher, University of Würzburg

"The EGI Check-in service streamlines authentication in a secure, simple and harmonised manner. By working with EGI, our members can now use their existing accounts to access the expanding toolset of innovative computing services offered by EGI"

**Fiona Sanderson**

Software Developer at Instruct ERIC



"We want to thank EGI (...) for their support. With such collaboration we expect to improve our data collection and outreach services to the general public and scientific community who access Obsea data. For our Obsea infrastructure, such collaboration is really very important to keep marine data generation alive!"

**Joaquin del Rio**

Head of Obsea Observatory  
(part of EMSO-ERIC)

"I learned how to implement the FitSM in an IT organization and gain from the benefits the framework provides for efficient service management."

**P. Weber**

(Karlsruhe Institute of Technology)

# Our structure

## EGI Federation

EGI is a federation of computing and storage resource providers united by a mission of delivering advanced computing and data analytics services for research and innovation.

The EGI Federation is coordinated by the EGI Foundation, an organisation with headquarters in Amsterdam, the Netherlands. The foundation offers a federation and management platform that on one side enables service providers to harmonise interfaces and connect to a common hub, on the other side, engages with research communities to understand the demand, simplifies the access and drives innovation together.

## EGI Foundation

EGI Foundation is a not-for-profit organisation created to coordinate and develop the EGI infrastructure and engage diverse users of our broad service portfolio.

At the top-level, the EGI Federation is governed by the participants represented in the EGI Council. An Executive Board is also charged with the management of the foundation in collaboration with the chair of the EGI Council and with the Director of the EGI Foundation. In the decision-making and policy definition process, the EGI Federation is also supported by various groups. In particular, there is an external advisory group and there are boards in the following functional areas: services and solutions, operations, user communities, security, and technology.

The EGI Federation also establishes agreements with similar initiatives outside Europe to ensure the global integration of the services and the wider support of international research communities.

## EGI Community

The EGI community is a community of researchers, developers, funders, technologists, dreamers and do-ers: anyone with a stake in advanced computing for research.

# Our contribution to the EOSC

The ambition of the European Open Science Cloud (EOSC) is to develop a “Web of FAIR Data and services” for science in Europe. EOSC will be a multi-disciplinary environment where researchers can publish, find and re-use data, tools and services, enabling them to better conduct their work.

EOSC builds on existing infrastructure and services supported by the EC, the Member States and research communities. It brings these together in a federated ‘system of systems’ approach, adding value by aggregating content and enabling services to be used together.

Being one of the pillars helping to realise EOSC, EGI is a member of the EOSC Association. The services and expertise of the EGI Federation are key assets for developing EOSC, especially for the Federating core.



Previously through EOSC-hub, and currently through EGI-ACE and other participating EOSC projects, EGI supports the implementation of European Open Science Cloud (EOSC) and is contributing to the following elements:

- Delivering the computing platform that serves as federated secure and trustworthy hosting environment for European core research data exploitation across organizations, projects and national boundaries.
- Providing key components of the EOSC Core such as the EOSC Marketplace and the EOSC Portal AAI infrastructure, service availability monitoring, usage accounting, the helpdesk, and policies and processes for the provisioning of the EOSC federated ‘web of data and services’
- Coordinating the EOSC service portfolio and the service provider onboarding process.
- Coordinating dedicated user support actions such as the EOSC Digital Innovation Hub and the EOSC Early Adopter Programme.

## EOSC-hub



1 Jan 2018 – 31 Mar 2021  
Coordinator: EGI Foundation  
Project budget: 33M  
Website: [eosc-hub.eu](http://eosc-hub.eu)

EOSC-hub was the first, and one of the major, implementation projects building the EOSC. It significantly contributed to the shaping of the portfolio, the technical architecture, the interoperability standards, the modelling of the Minimum Viable EOSC, and the Rules of Participation. It also dedicated significant efforts to support the EOSC demand side focusing on multiple target groups: research communities, industry and SMEs.

The project was one of the most important contributors to the definition of the EOSC Portal concept and its implementation, evolving it into a European-level common discovery and access channel, which currently comprises more than 300 services. It defined the functional capabilities of the EOSC Core and significantly contributed to the definition of the EOSC technical implementation.

The service catalogue model defined in the project with the internal catalogue (the 'Hub') and the external catalogue with user-facing data and services, was eventually adopted by the Sustainability working group of EOSC.

## EGI-ACE



1 Jan 2021 – 30 Jun 2023  
Coordinator: EGI Foundation  
Project budget: 12M  
Website: [egi.eu/egi-ace](http://egi.eu/egi-ace)

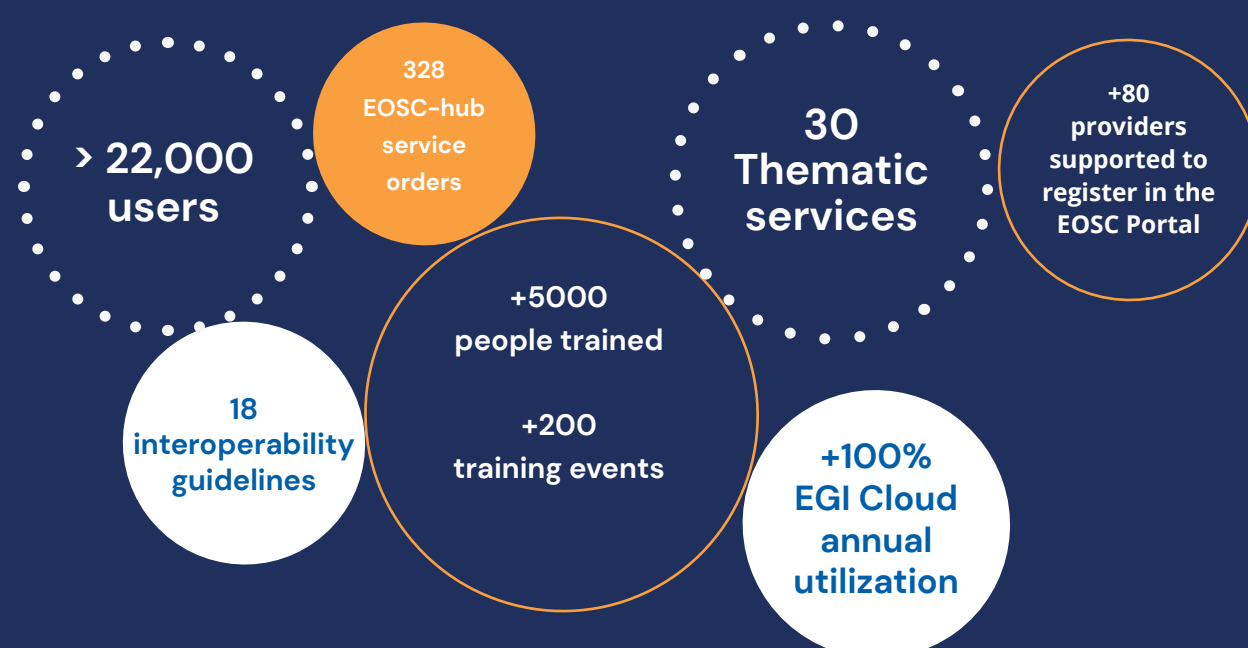
EGI-ACE is a 30-month project coordinated by the EGI Foundation with a mission to empower researchers from all disciplines to collaborate in data- and compute-intensive research through free-at-point-of-use services.

Building on the distributed computing integration in the EOSC-hub project, EGI-ACE delivers the EOSC Compute Platform and contributes to the EOSC Data Commons through a federation of cloud compute and storage facilities, PaaS services and data spaces with analytics tools and federated access services.

The consortium of the project builds on the expertise and assets of the EGI federation members, key research communities, data providers and collaborating initiatives.

Project objectives:

- Deliver the EOSC Compute Platform and expand the supply-side;
- Contribute to the implementation of the EU Data Strategy and the EOSC Data Commons to support the green deal, health, fundamental research and social sciences and humanities;
- Integrate the EOSC Compute Platform with the EOSC Portal and the EOSC Core;
- Contribute to the realisation of a global open science cloud;
- Expand the demand-side of EOSC across sectors and disciplines.



# Our users

## Our primary target groups are:

**1. Research communities and Research Infrastructures** push the frontiers of science, with instrumentations, massive data and computational requirements. They have an international nature, decades-long life time, and strong need for shared e-infrastructures. We provide both services and expertise for community-specific solutions that help them serve their user base. The EGI Foundation acts as the main contact point with the head organisations, while the EGI Participants engage via their local contacts. Since 2010, we have supported tens of Research Infrastructures and international research communities, most of them included in the ESFRI roadmap.

**2. International research projects and research collaborations** are typically represented by EC-funded projects at the European scale. While such projects have limited lifetime they cover many niche domains and regions. To this target group EGI is offering IT services and technical support to run proof-of-concept and pilot setups to tackle the scientific communities' challenges, or as Infrastructure provider to provision and operate the communities' e-Infrastructures needs which can be used to analyse big data analytics and support advanced research.



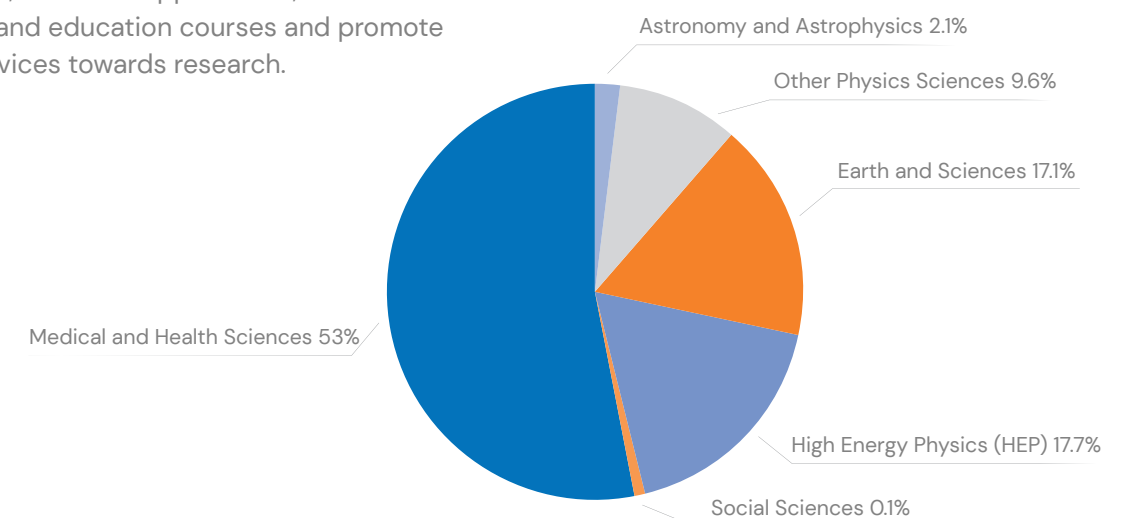
## We also serve:

**3. Small international groups and individual researchers** who are usually less experienced in advanced computing or lack resources and support. The approach is to connect them to the most suitable service providers through a common platform and engagement framework and with a minimal engagement from the EGI Foundation.

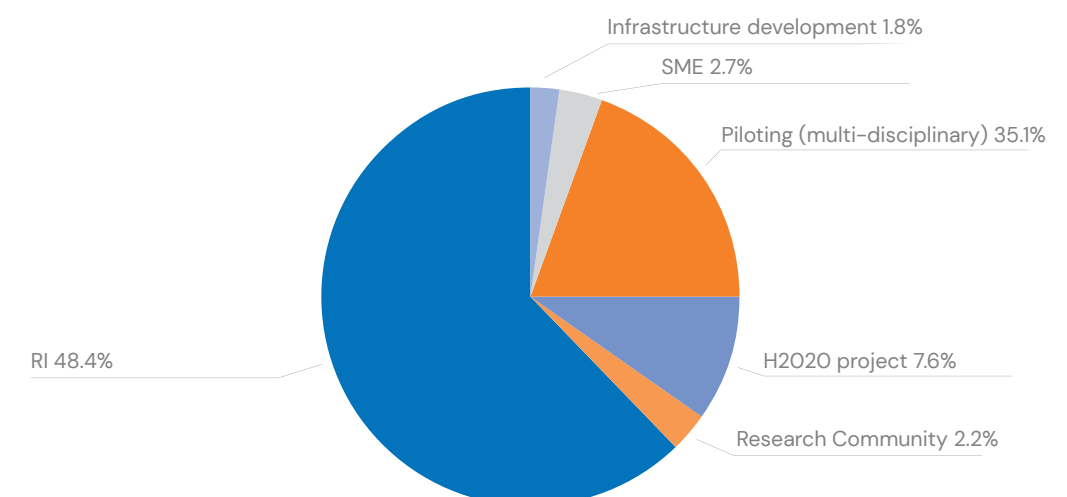
**4. SMEs and industries** for stimulating the knowledge transfer activities and main achievements produced in science and scientific innovation into business and society. The EGI Federation helps them to exploit services and resources for compute-/data-intensive research and innovation, support in reusing open research data sets, tools and applications, access to training and education courses and promote their services towards research.

**5. Public administrations** enable innovation in the policy making sector, removing European fragmentation, allowing cross-support and cross-collaboration and the use of secure compute and data-intensive services. They do not always own technical capabilities to develop solutions and need the support of Providers and EOSC initiative.

**6. Policymakers & Funding agencies**  
We provide expert advice for shaping policies and funding programs to help them implement their policy priorities. Our focus is also on informing them about trends and new potential developments.



Spread of EGI users across disciplinary areas (2021)

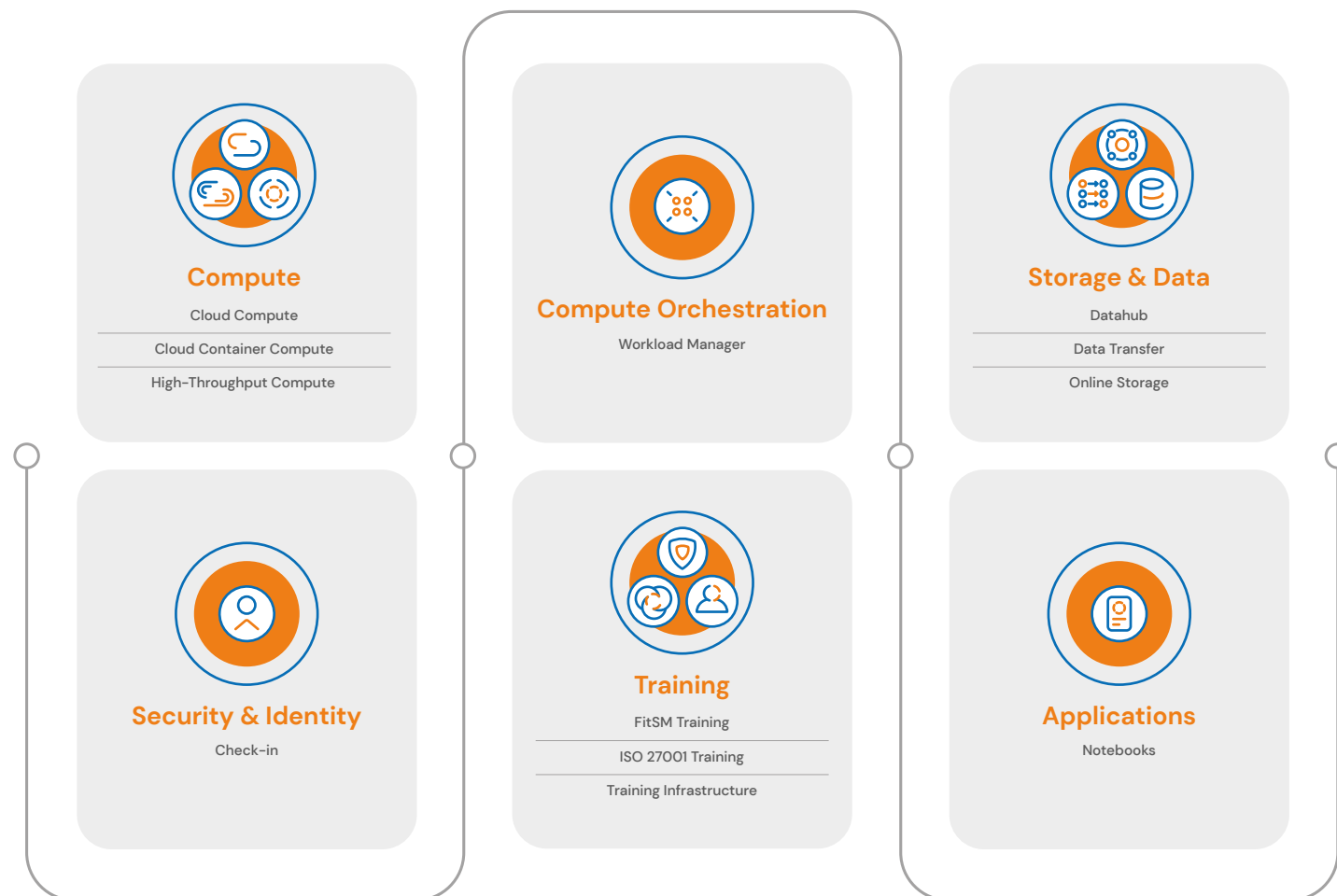


Spread of cloud CPU/h across type of activity (2021)

# Our services

## Services for research

Our large-scale computing and data analytics services are helping scientists to accelerate the process leading to research outputs.



You can read in detail about all the services for research on our [website](https://egi.eu)

## Services for business

Our business engagement programme is organised within EGI DIH, a virtual space where companies and technical service providers meet to test solutions before investing.



### Test before you invest

EGI DIH helps and supports companies in adopting, testing, and validating advanced computing technologies to help the digital transformation and enhance productivity and competitiveness.



### Build a Network & Community

EGI DIH brings SMEs and companies in contact with the EGI community to facilitate interaction and open new market opportunities.



### Find Funding & Investment

EGI DIH facilitates access to funding opportunities and investment mechanisms to sustainably support innovation.



### Get Consultancy & Training

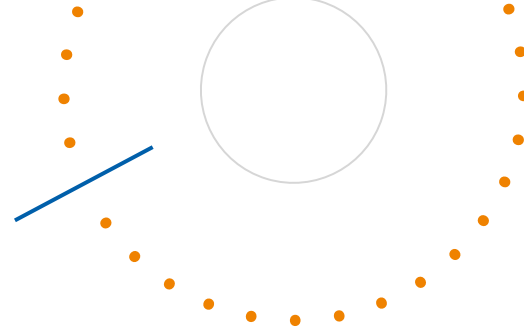
EGI DIH provides knowledge on the technical offer through webinars and consultancy services.

You can read in detail about all the services on [egi.eu/egi-dih/](https://egi.eu/egi-dih/)



## Services for federation

Our internal services are primarily serving the EGI Council members and affiliated organisations. They improve how we, as a federation, work together.



## Security



Check-in

Login with your own credentials



Attribute Management

Manage memberships and groups in communities and virtual organisations

## Coordination



Operations Coordination and support

Coordinate activities to ensure seamless operations



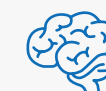
Community Coordination

A joint approach to user engagement



ITSM Coordination

Ensures professional service management for EGI IT services



Technical Coordination

Progress and innovation through collaboration



Strategy and Policy Development

One federation, one vision, one strategy



Project Management and Planning

A joint approach to planning and management



Security Coordination

Enhance local security for a safer global infrastructure



Communications

Share your successes at a larger scale

## Operations



Marketplace

Expose your services to a broader audience



Accounting

Track and report the usage of your services



Collaboration Tools

IT tools for better coordination



Configuration Database

Manage the configuration information of federated e-infrastructure assets and their functional relations



Operational Tools

Integrate resources and operations in a federated ecosystem



Validated Software and Repository

Benefit from a repository of high-quality software validated for the EGI infrastructure



Service Monitoring

Monitor the performance of IT services



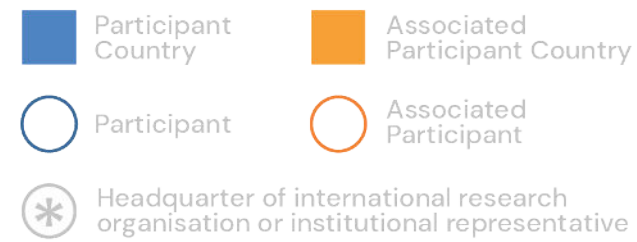
Helpdesk

Your point of contact to ask for support at EGI

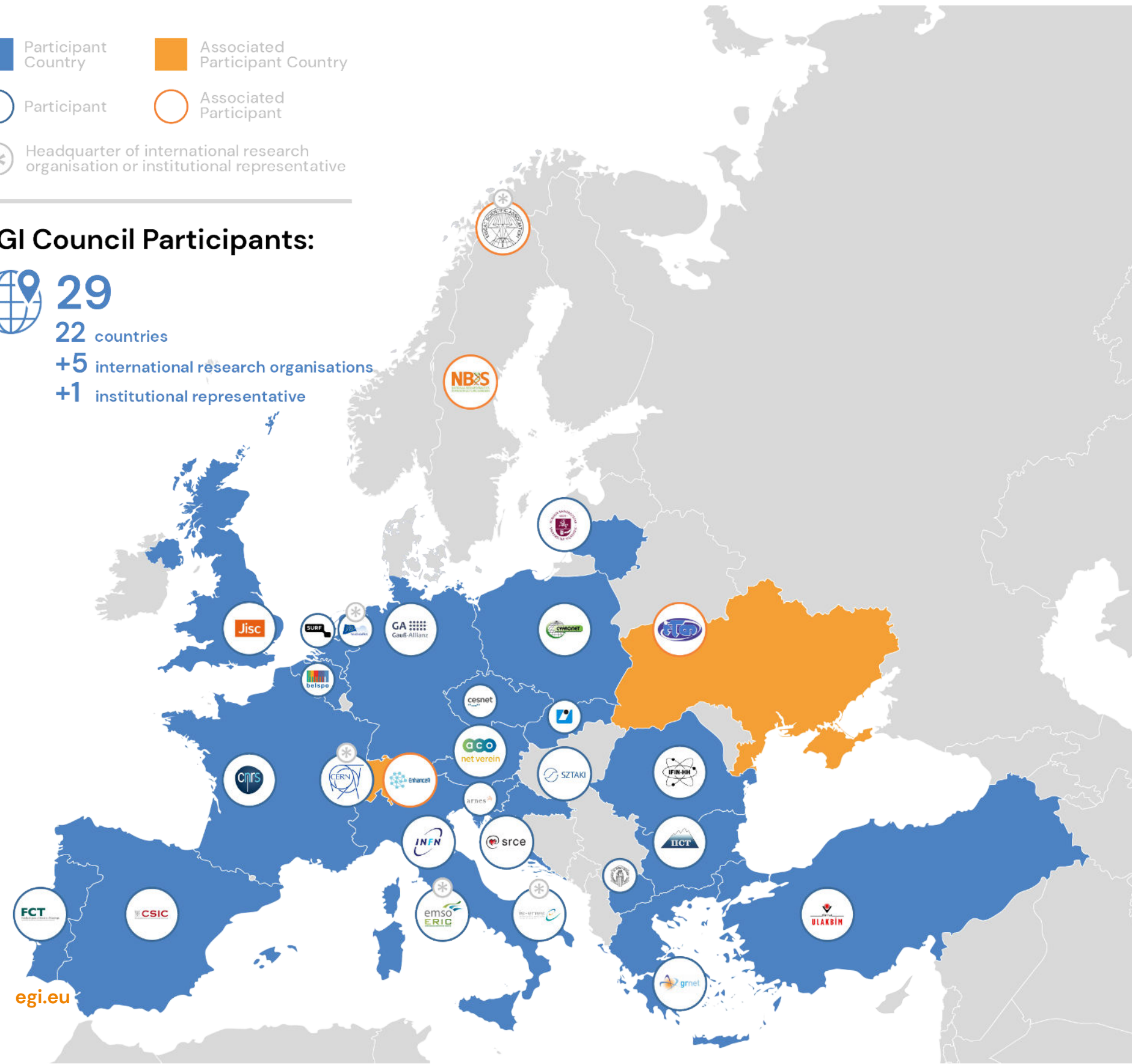
Note: the internal services are supported by the EGI contribution fees and EC-funded projects

You can read in detail about all internal services on our [website](#)

# EGL federation



### EGL Council Participants:



# Why join us?

## 28 partners have joined our federation. Why should you, too?

Joining the EGI Federation means becoming part of a well established community serving international research and innovation. When you become an EGI Participant, you can access the following values:

### Access services and tools for federating infrastructures

- Benefit from a suite of technical tools, internal services and management processes that support federated operations
- Take an active role in the provision of services enabling federations

### Engage expert communities

- Access strong connections with international research communities and infrastructures
- Improve your understanding of requirements from emerging research infrastructures and communities

### Access services and support for advanced computing

- Benefit from federated AAI, federated data access and management, federated compute access and management

### Boost knowledge sharing

- Get a priority access to community knowledge, expertise and trainings
- Share your knowledge within the EGI Federation and related user communities, and
- Contribute to a stronger European Research Area

### Improve access to funding

- Join flagship projects led by the EGI Foundation or access invitations directed to the EGI Federation
- Participate as a service provider in (pay for use) or virtual access programme

### Promote your services internationally

- Get support in promoting your services in the EGI or EOSC marketplaces
- Co-develop new products/ services and exchange expertise
- Simplify international collaboration and support transnational access to services

### Shape strategy and policy

- Influence the EGI Federation strategy and align your direction with other countries
- Influence European-level policy on digital services for research with a unique and coherent voice

## Who is eligible?

Participation in the EGI Council is open to organisations in the following categories:

- **Organisations representing national e-infrastructures** with a mission to provide distributed data & computing services to researchers
- **Organisations representing international communities of researchers** with a strong interest in distributed data & computing services, for example:
  - European International Research Organisations (EIROs)
  - European Research Infrastructure Consortia (ERICs)
  - Research Infrastructures on the ESFRI roadmap
- **Any legal entity**, in their own capacity or as representative of a consortium that can contribute to the objective of the EGI Federation.

## What are the participant options?

If your country is not represented in the EGI Federation, you can join as:

- **Participant**  
This is the full membership with benefits such as influence in the strategic direction, seat and voting rights in the EGI Council, priority in joining projects
- **Associated Participant**  
Limited membership with observer role in the EGI Council and no voting rights.

Both options are permanent and renewed annually. There is also an affiliation program to try-out the associated participant membership for 12 months, renewable to a maximum of 24 months.

If your country is represented in the EGI Federation, then you can join indirectly by establishing an agreement with the related EGI participant.



# Benefits

	Participants	Associated Participants
Advertised on EGI website, according to type of membership	✓	✓
Attend Council meetings	✓	✓ *
Participate to working groups	✓	✓
Access the internal services	✓	✓
Bidding for internal services	✓	
Vote on any decision submitted to the Council	✓	
Be part of the 'linked third party' mechanism to join proposals (e.g. EC projects)	✓	
Prominence in promotional material	✓	
Access Strategy and Policy Decision Support briefing and document reports	✓	
Benefit from the EC regulation about public procurement	✓	

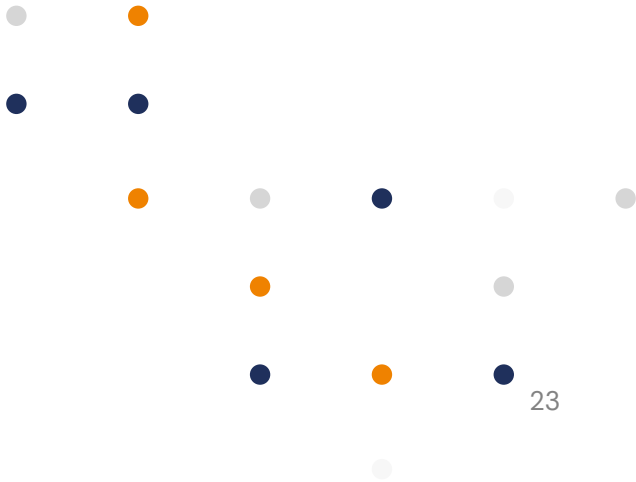
\* Only upon express invitation and as an observer

# Participant fee

Category	Participant		Associated Participant	
	Fee (€)	Votes	Fee (€)	Votes
X >2,000,000	90,000	90	45,000	0
750,000< X <2,000,000	75,000	75	37,500	0
300,000< X <750,000	55,000	55	27,500	0
100,000< X <300,000	40,000	40	20,000	0
30,000 < X <100,000	25,000	25	12,500	0
X <30,000	10,000	10	5,000	0

Notes:

- The participant fee model is structured in six levels
- For an organisation representing a country, X is the national GDP (in million US\$)
- For an organisation representing an international research community, a consortium or in their own capacity, X is the annual turnover of the headquarters legal entity (in thousand €)
- The fee for a temporary affiliated membership is 1,500 € (with no voting right)



# Participants of the EGI Council

## Austria

Participant  
ACOnet

Represented entity:  
aconet Association

## Belgium

Participant  
Belspo

Represented entity:  
BEgrid

## Bulgaria

Participant  
IICT

Represented entity:  
NCHDC

## Croatia

Participant  
SRCE

Represented entity:  
CRO NGI

## Czech Republic

Participant  
CESNET

Represented entity:  
Metacentrum

## France

Participant  
CNRS

Represented entity:  
France Grilles

## Germany

Participant  
Gauß-Allianz

Represented entity:  
NGI-DE

## Greece

Participant  
GRNET

Represented entity:  
GRNET Consortium

## Italy

Participant  
INFN

Represented entity:  
INFN

## Lithuania

Participant  
Vilnius University

Represented entity:  
Lithuanian e-Infrastructure

## Republic of North Macedonia

Participant  
UKIM

Represented entity:  
MARGI

## Netherlands

Participant  
SURF

Represented entity:  
Coöperatie SURF U.A.

## Poland

Participant  
Cyfronet

Represented entity:  
PL GRID

## Portugal

Participant  
FCT

Represented entity:  
INCD

## Romania

Participant  
IFIN-HH

Represented entity:  
NGI-RO

## Slovakia

Participant  
IISAS

Represented entity:  
SlovakGrid (NGI-SK)

## Slovenia

Participant  
ARNES

Represented entity:  
SLING

## Spain

Participant  
CSIC

Represented entity:  
ES-NGI

## Turkey

Participant  
TÜBITAK - ULAKBIM

Represented entity:  
ULAKBIM members

## United Kingdom

Participant  
JISC

Represented entity:  
JISC Members and UKRI Councils

## International

Participant  
EMSO ERIC

Represented entity:  
EMSO ERIC members

## International

Participant  
CERN

Represented entity:  
CERN

## International

Participant  
MARIS BV

Represented entity:  
SeaDataNet

## International

Participant  
CMCC

Represented entity:  
IS-ENES

## Associated Participants

Participant  
NBIS (Sweden)

Represented entity:  
NBIS

Participant  
BITP (Ukraine)

Represented entity:  
UNG

Participant  
EISCAT (International)

Represented entity:  
EISCAT Council Members

Participant  
EnhanceR (Switzerland)

Represented entity:  
EnhanceR members

We want to thank all the EGI Federation members for their high-quality services, collaborative efforts and trust.

**We are the EGI Federation!**

# How to join

Are you interested in joining the EGI Federation? Send your expression of interest to

 [director@egi.eu](mailto:director@egi.eu)

This publication was prepared by the EGI Foundation team.

The content of this publication is correct as of January 2023.

To get in touch with us about this publication, send an e-mail to: [press@egi.eu](mailto:press@egi.eu)








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[www.egi.eu](http://www.egi.eu)