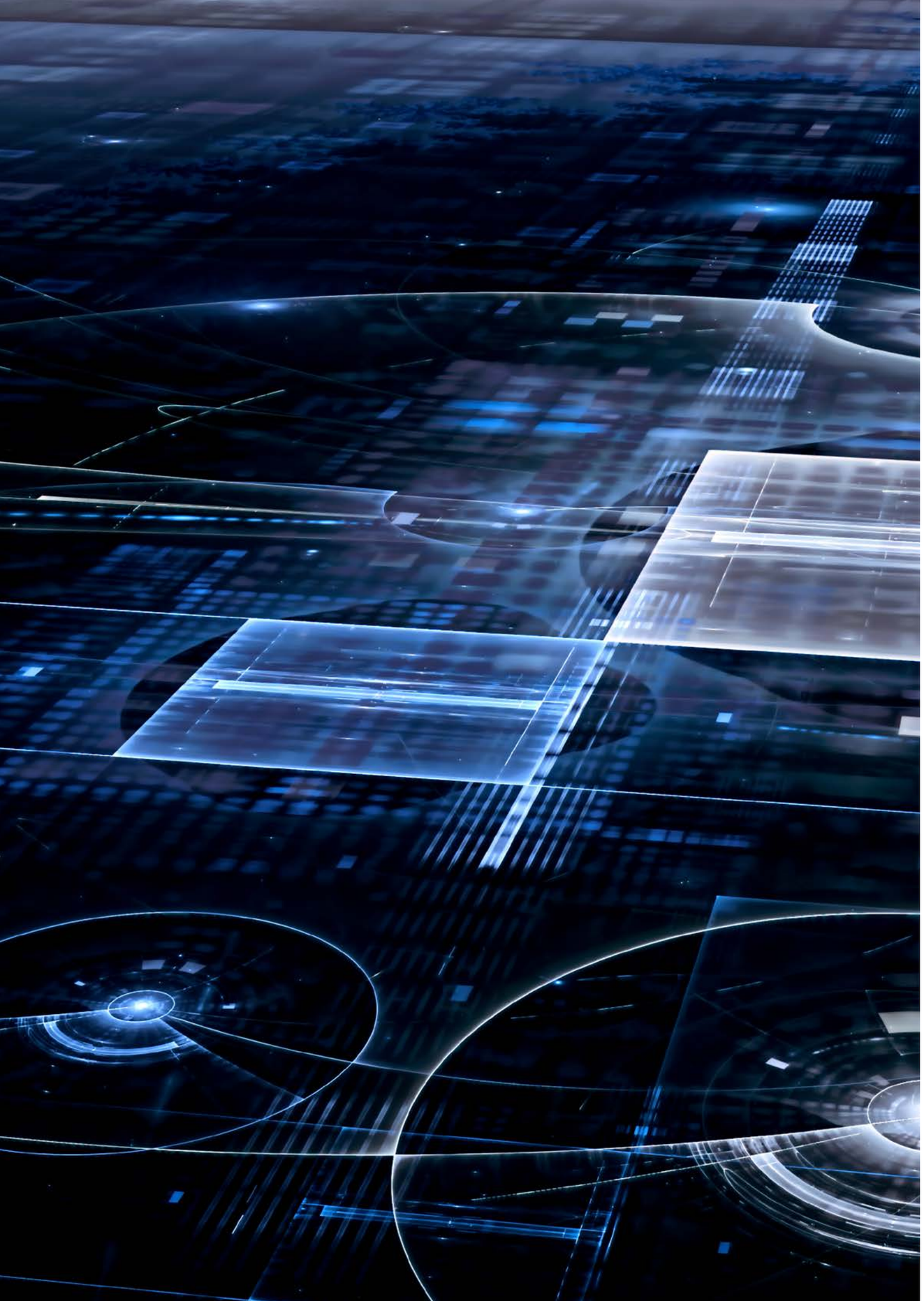
Joining the EGI Federation



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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 2023 in numbers

2.8K[1]
Enabled articles

+7.0B
HTC CPU hours consumed

+372M
Computational jobs

95K
Users

+82M
Cloud CPU hours consumed

29
EGI Council participants

36
EU funded projects

[1] The number of publications is based on data provided by OpenAIRE Explore

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 1790 peer reviewed open access scientific papers published in 2022 and over 30k 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 avarge 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
- 138 scientific communities engaged
- Over 48 research infrastructures currently uses our services with 22 of them being on the ESFRI roadmap

Being a trusted service & technology partner
- In 2022, EGI started to collaborate in 9 new EU funded projects, contributing to a total of 36 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
- 387 participants from 62 different countries attended our 8 webinars organised in 2022

"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)

"As a service manager, I find FitSM principles useful for any size of collaboration since they offer an easy-to-follow guide that can be adapted for smaller collaborations but should be taken as it is in large federated ones."

Gino Marchetti
Informatics/Bioinformatics engineer at CC-IN2P3

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.

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.

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.

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.

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.

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.

eosc | Member of the EOSC Association

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.

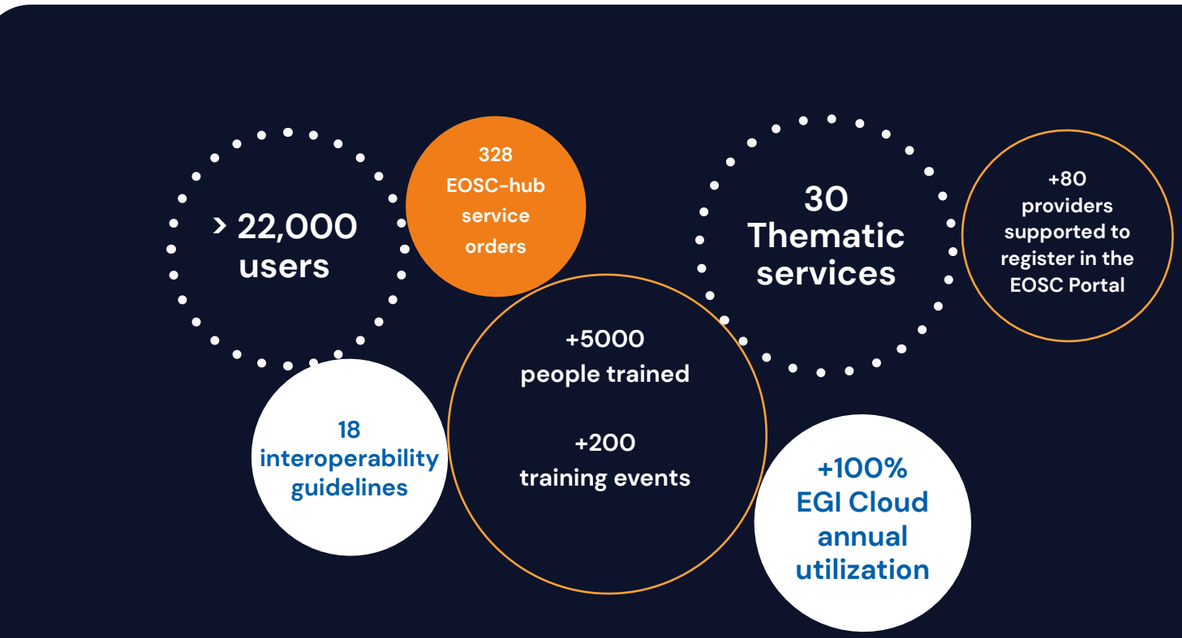
EOSC-hub

1 Jan 2018 - 31 Mar 2021
Coordinator: EGI Foundation
Project budget: 33M
Website: eosc-hub.eu

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

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.

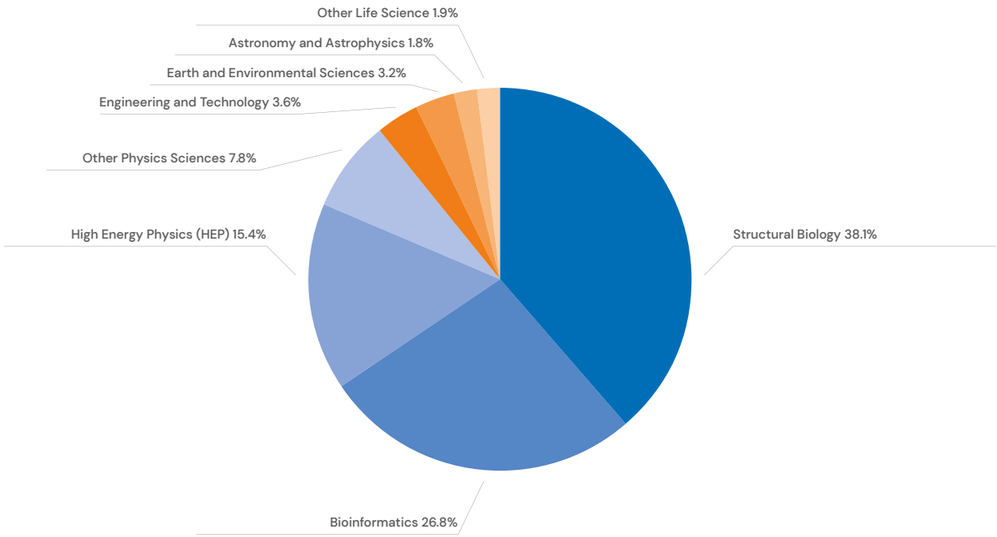
We also serve:

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.

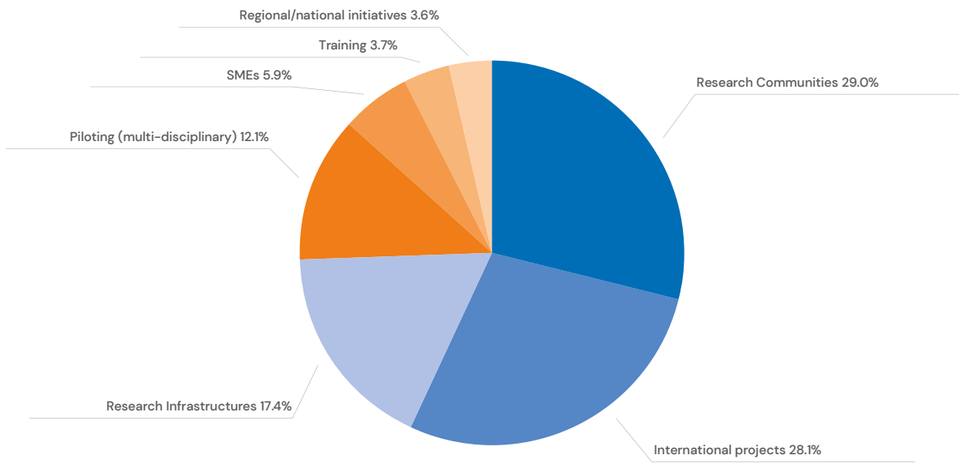
4. **SMEs and industries** for stimulating the knowledge transfer activities and main achievements produced in science and scientific innovation into business and society. The EGI Federation helps them to exploit services and resources for compute-/data-intensive research and innovation, support in reusing 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 (2022)



Spread of cloud CPU/h across type of activity (2022)

Our services

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

Strategy and Policy Development
One federation, one vision, one strategy

Project Management and Planning
A joint approach to planning and management

ITSM Coordination
Ensures professional service management for EGI IT services

Security Coordination
Enhance local security for a safer global infrastructure

Techincal Coordination
Progress and innovation through collaboration

Communications
Share your successes at a larger scale

Operations

Operational Tools
Integrate resources and operations in a federated ecosystem

Accounting
Track and report the usage of your services

Validated Software and Repository
Benefit from a repository of high-quality software validated for the EGI infrastructure

Collaboration Tools
IT tools for better coordination

Service Monitoring
Monitor the performance of IT services

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

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

Services for research

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

Compute

Cloud Compute
Run virtual machines on demand with complete control over computing resources

Cloud Container Compute
Run Docker containers in a lightweight virtualised environment

High-Throughput Compute
Execute thousands of computational tasks to analyse large datasets

Software Distribution
Publish and access software efficiently across multiple sites

Compute Orchestration

Workload Manager
Manage computing workloads in an efficient way

Infrastructure Manager
Use cloud orchestrator to deploy and configure complex virtual infrastructures

Storage & Data

Datahub
Access key scientific datasets in a scalable way

Data Transfer
Transfer large sets of data from one place to another

Online Storage
Store, share and access your files and their metadata on a global scale

Training

FitSM Training
Learn how to manage IT services with a pragmatic and lightweight standard

ISO 27001 Training
Learn how to manage and secure information assets

Training Infrastructure
Dedicated computing and storage for training and education

Applications

Notebooks
Create interactive documents with live code, visualisations and text

Replay
Reproduce and share research on a notebooks-based platform

Security & Identity

Check-in
Login with your own credentials

Secrets Store
Easily retrieve, manage, and rotate credentials, API keys, and other secrets through their lifecycle

You can read in detail about all the services for research on our website

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.

Find Funding & Investment

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

Build a Network & Community

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

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/

EGI federation

Participant Country

Associated Participant Country

Participant

Associated Participant

Headquarter of international research organisation or institutional representative

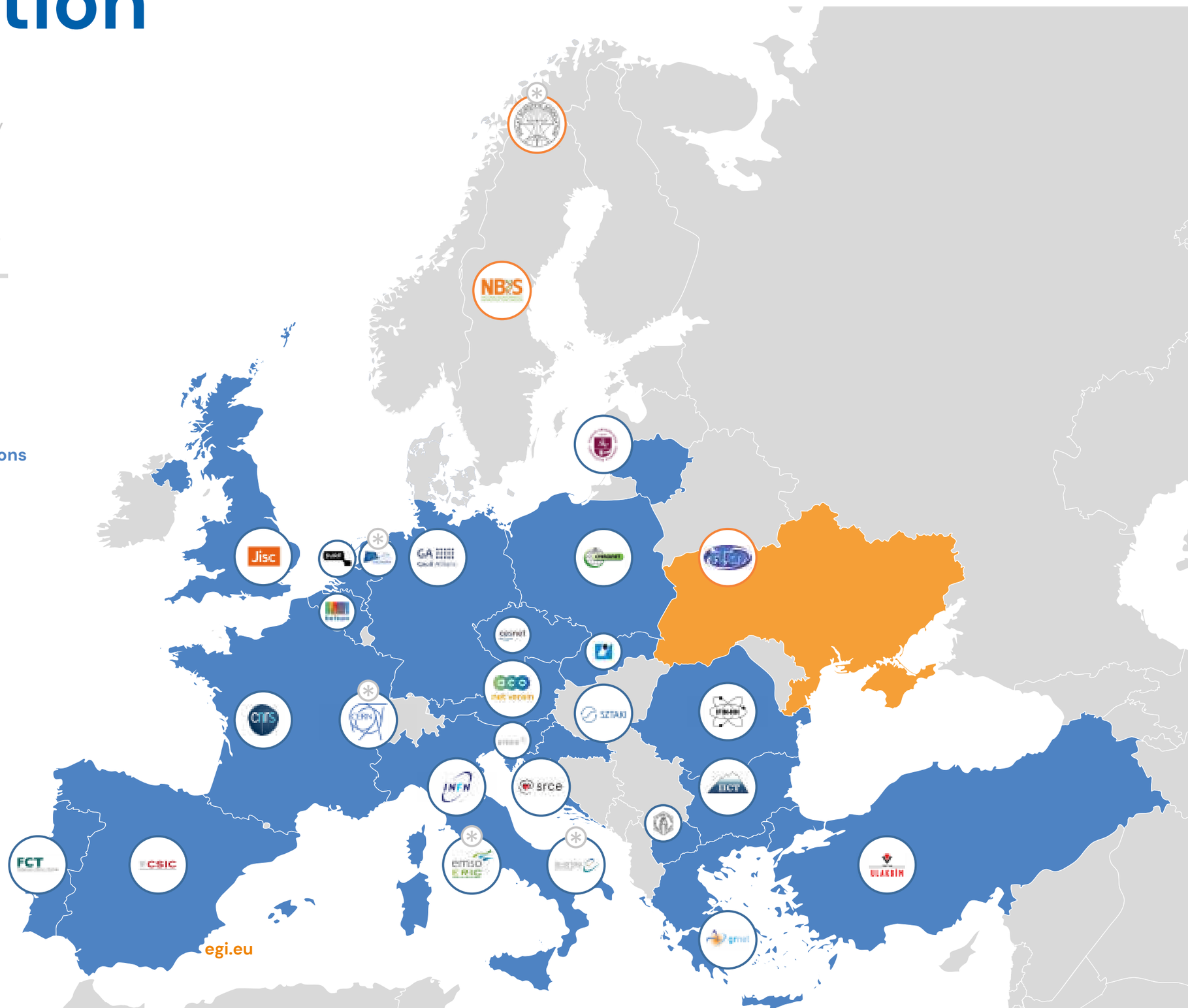
EGI Council Participants:

28

21 countries

+5 international research organisations

2 institutional representative



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

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

Access services and support for advanced computing

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

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

Engage expert communities

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

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

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	112.500	112.500	56.250	0
750.000< X <2.000.000	93.750	93.750	46.875	0
300.000< X <750.000	68.750	68.750	34.375	0
100.000< X <300.000	50.000	50.000	25.000	0
30.000 < X <100.000	31.250	31.250	15.625	0
X <30.000	12.500	12.500	6.250	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 budget 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

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

Macedonia

Participant
UKIM

Represented entity:
MARGI

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

International

Participant
SZTAKI (Hungary)

Represented entity:
SZTAKI

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

This publication was prepared by the EGI Foundation team.

The content of this publication is correct as of January 2024.

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

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