



# Joining the ESGI Federation



# Table of contents

Who we are	02 – 03
Our impact	04 – 05
Our internal structure	06
Our contribution to the EOSC	07 – 09
Who we serve	10 – 11
Our services for research	12 – 13
Geographical coverage of the EGI Federation	14 – 15
Our internal services	16 – 17
Value of becoming an EGI Participant	18
Participant options	19
Participant benefits	20
Participant fees	21
Participants of the EGI Council	22 – 23
How to join	25

## 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 infrastructure 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 supported research is diverse, examples include finding new tools to diagnose diseases such as epilepsy and brain tumours, the design of new frameworks to assess and reduce flooding risks, the search for gravitational waves by the LIGO-Virgo collaboration or the pursuit of dark matter by the XENON collaboration.

## EGI Federation in numbers



### High-Throughput Compute



### Cloud Compute



### Supported research initiatives



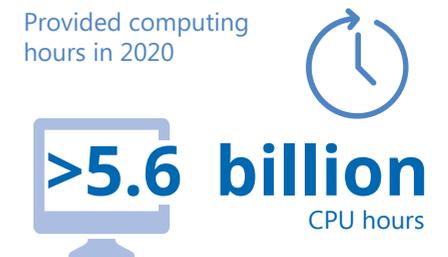
### Supported Users



### Supported scientific publications in 2020



### Provided computing hours in 2020



## 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 3 million years of compute time (2011-2020)
- 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 1100 peer reviewed open access scientific papers published in 2020
- Contributed to 2 Nobel prizes

*"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

## Innovation

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

### **Cloud container service - package and run everywhere**

- New ways to package and run scientific applications

### **Federated authentication - more login options to EGI services**

- 4,000 identity providers supported in 2020
- Access to more than 100 services in 2020

### **Improved Service Level Agreements - clear guarantees**

- Tens of research projects supported by SLAs

### **New analytics platforms**

- Jupiter Notebooks and Galaxy as a service

*"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

## Collaboration

*We foster international collaborations and knowledge sharing*

### **Accelerating co-creation and development**

- Supported more than 20 Competence Centres in 2020
- Worked with more than 60 research infrastructures, communities, and projects in 2020

### **Creating a space for ideas**

- More than 15 conferences with thousands of international participants

### **Promoting innovation**

- Active business engagement program
- Tens of SMEs/industries

*"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)

## Skills and Expertise

*We create opportunities for professional development and acquiring know-how*

### **Increased service management expertise**

- More than 850 FitSM attendees in trainings who achieved certifications

### **Increased diversity of technical training in distributed computing**

- Contributed to tens of training events and workshops

*"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 internal structure

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 European Open Science Cloud (EOSC) initiative aims to deliver a 'federated infrastructure all researchers, innovators, companies and citizens with seamless access to an open-by-default, efficient and cross-disciplinary environment for storing, accessing, reusing data, tools, publications and other scientific outputs for research, innovation and educational purposes'.

Through EOSC-hub, EGI-ACE, and other participating EOSC projects, EGI supports the implementation of European Open Science Cloud (EOSC) by:



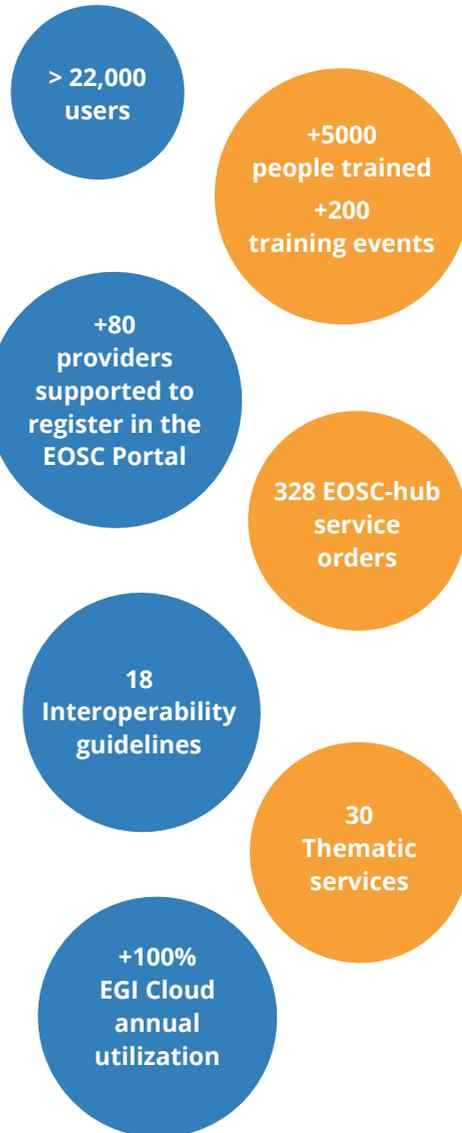
- Delivering the computing platform that serves as federated secure and trustworthy hosting environment for European core research data exploitation across organizations, projects and national boundaries.
- Providing key components of the EOSC Core such as the EOSC Marketplace and the EOSC Portal AAI 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

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 significant 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



### EGI-ACE

1 Jan 2021 - 30 Jun 2023  
Coordinator: EGI Foundation  
Project budget: 12M  
EGI budget: 2.5M EUR  
Website: [egi.eu/egi-ace](http://egi.eu/egi-ace)



### EOSC-hub

1 Jan 2018 - 31 Mar 2021  
Coordinator: EGI Foundation  
Project budget: 33M  
EGI budget: 6M EUR  
Website: [eosc-hub.eu](http://eosc-hub.eu)

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.

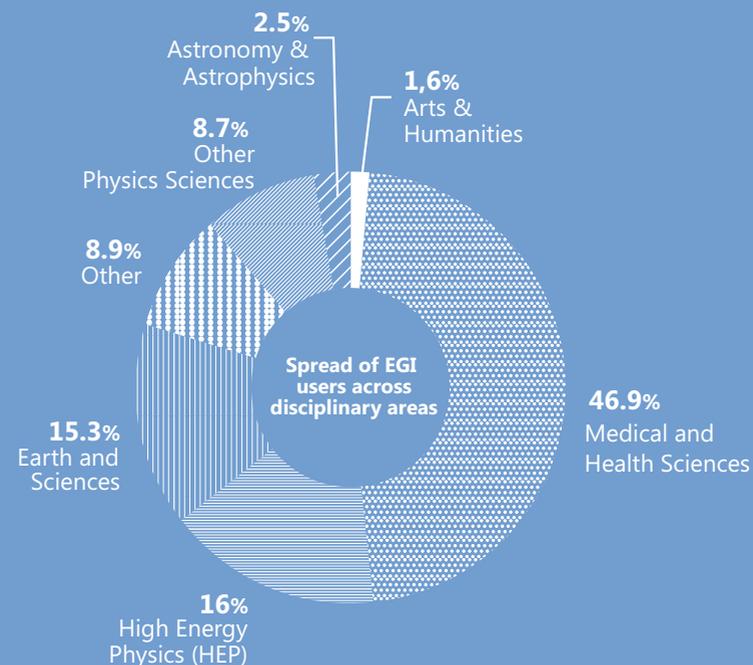
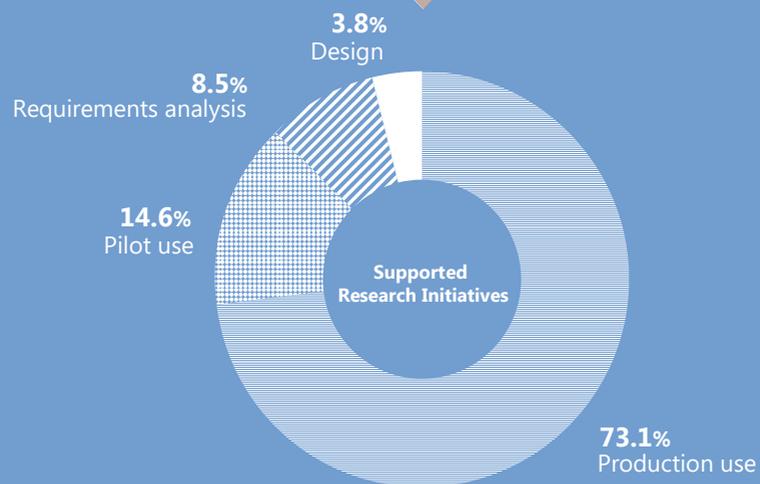
Building on the distributed computing integration in the EOSC-hub project, EGI-ACE will deliver the EOSC Compute Platform and will contribute to the EOSC Data Commons through a federation of cloud compute and storage facilities, PaaS services and data spaces with analytics tools and federated access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

# Who we serve



## 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.

# Our services for research

## 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

  
**Workload Manager**  
Manage computing workloads in an efficient way

## Storage and Data

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

  
**Datahub**  
Access key scientific datasets in a scalable way

  
**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

## Security

  
**Check-in**  
Login with your own credentials

## Applications

  
**Notebooks**  
Create interactive documents with live code, visualisations and text

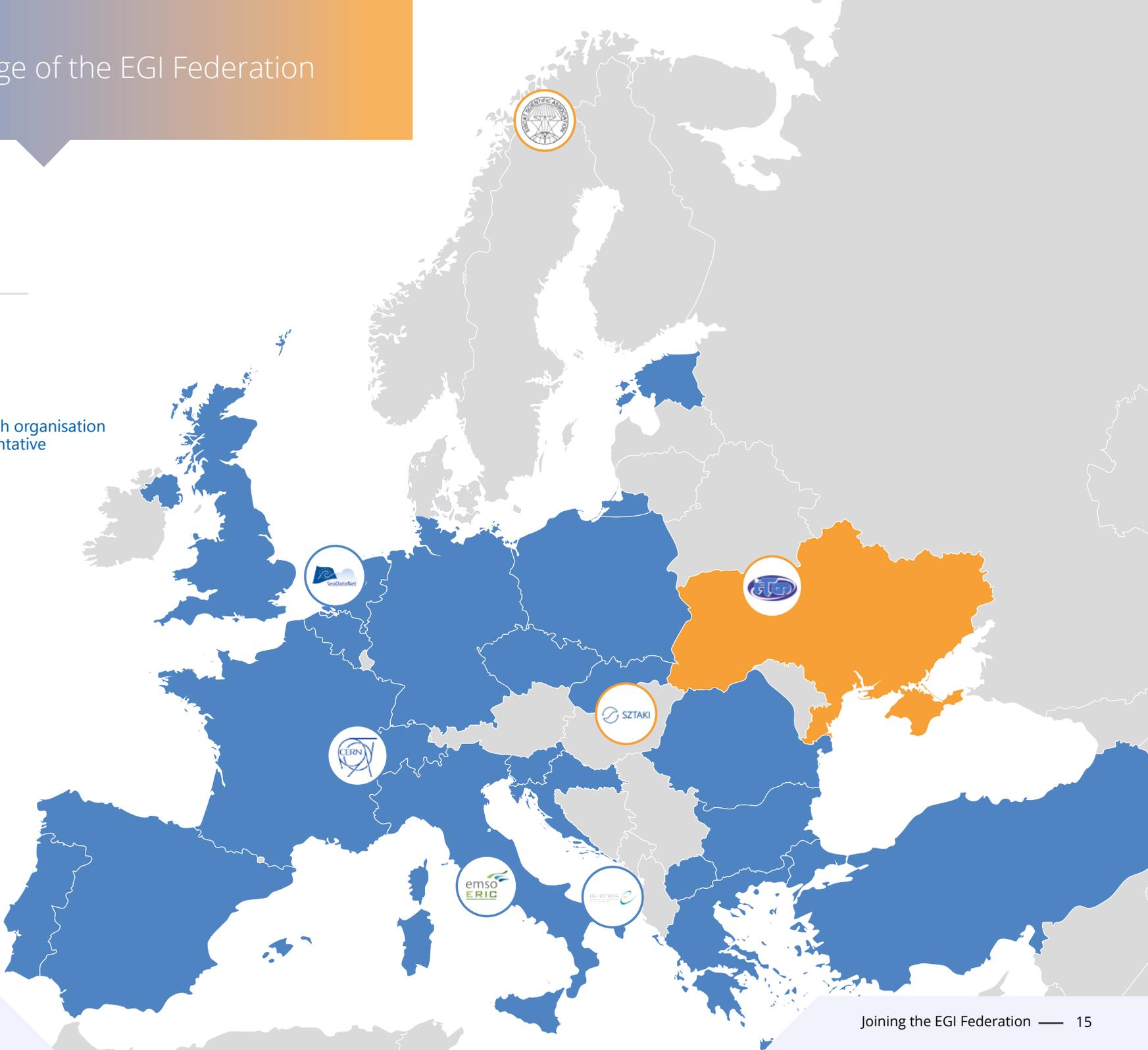
  
**Applications on Demand**  
Use online applications for your data & compute intensive research

# Geographical coverage of the EGI Federation

- Participants
- Associated participant

### EGI Council Participants:

 **27**  
21 countries  
+ 5 international research organisation  
+ 1 institutional representative



# Our internal services

## 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

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

### 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

- 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

### 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.

## 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 observer only

## 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 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

## Participants

### Belgium



Participant  
BELspo



Represented entity:  
BEgrid

### Bulgaria



Participant  
IICT



Represented entity:  
NCHDC

### Croatia



Participant  
SRCE



Represented entity:  
CRO NGI

### Portugal



Participant  
FCT



Represented entity:  
INC D

### Romania



Participant  
IFIN-HH



Represented entity:  
NGI-RO

### Slovakia



Participant  
IISAS



Represented entity:  
SlovakGrid (NGI-SK)

### Czech Republic



Participant  
CESNET



Represented entity:  
Metacentrum

### Estonia



Participant  
Harno



Represented entity:  
ETAIS

### France



Participant  
CNRS



Represented entity:  
France Grilles

### Slovenia



Participant  
ARNES



Represented entity:  
SLING

### Spain



Participant  
CSIC



Represented entity:  
ES-NGI

### Switzerland



Participant  
EnhanceR



Represented entity:  
EnhanceR members

### Greece



Participant  
GRNET

Represented entity:  
GRNET Consortium

### Germany



Participant  
Gauß-Allianz



Represented entity:  
NGI-DE

### Republic of North Macedonia



Participant  
UKIM



Represented entity:  
MARGI

### Turkey



Participant  
TÜBİTAK - ULAKBİM

Represented entity:  
ULAKBİM members

### United Kingdom



Participant  
JISC

Represented entity:  
JISC Members and  
UKRI Councils

### International



Participant  
CERN



Represented entity:  
CERN

### Italy



Participant  
INFN

Represented entity:  
INFN

### Netherlands



Participant  
SURF

Represented entity:  
Coöperatie SURF U.A.

### Poland



Participant  
Cyfronet



Represented entity:  
PL GRID

### International



Participant  
MARIS BV



Represented entity:  
SeaDataNet

### International



Participant  
CMCC



Represented entity:  
IS-ENES

### International



Participant  
EMSO ERIC



Represented entity:  
EMSO ERIC members

## Associated Participants



Participant  
SZTAKI (Hungary)

Represented entity:  
SZTAKI



Participant  
BITP (Ukraine)



Represented entity:  
UNG



Participant  
EISCAT (International)



Represented entity:  
EISCAT Council  
Members

## How to join

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

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

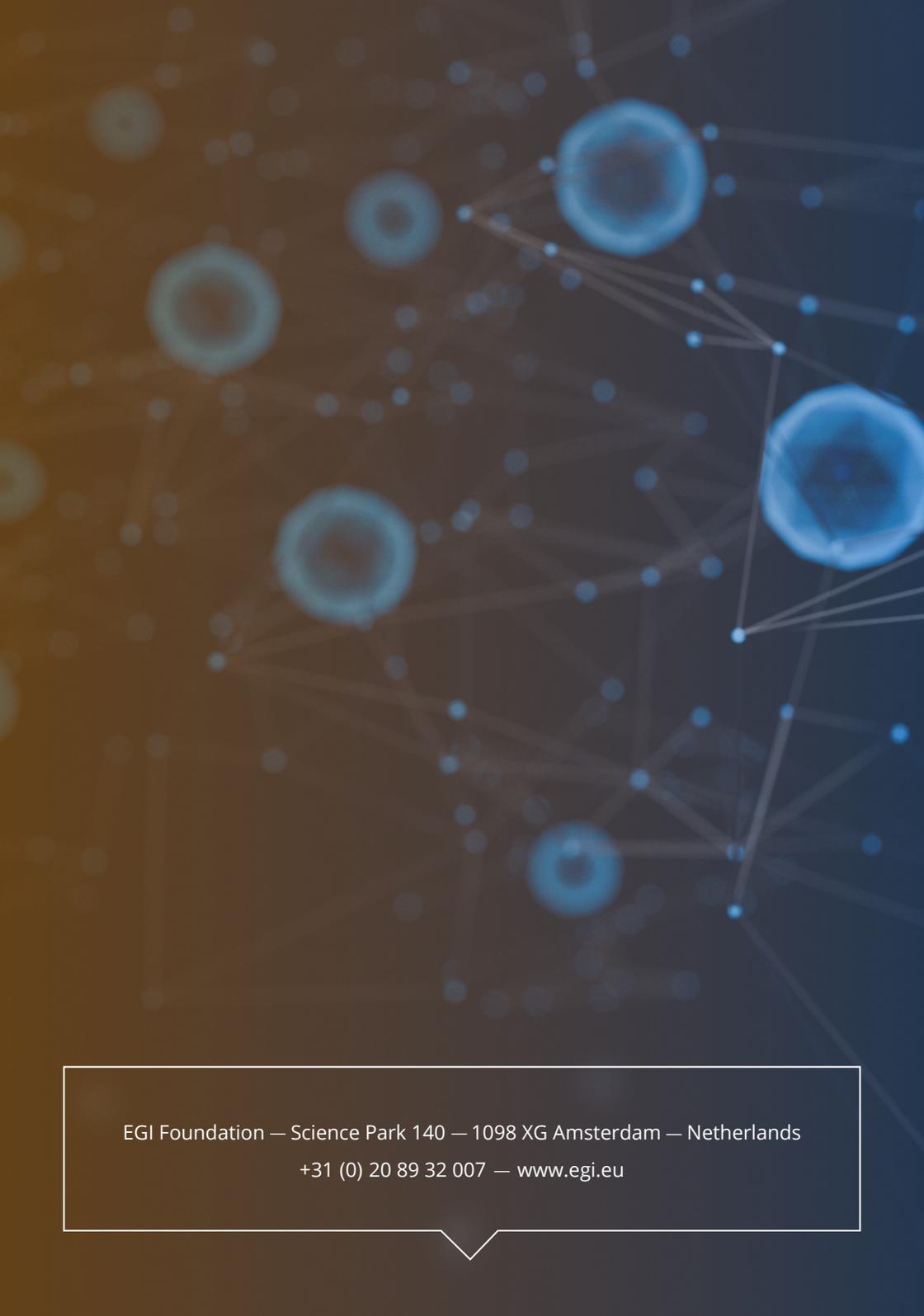
This publication was prepared by the EGI Foundation team.

Design:  
Studio Bureau  
[www.studio-bureau.com](http://www.studio-bureau.com)

The content of this publication is correct as of June 2021.

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



The background features a gradient from dark blue at the top to a lighter, brownish-orange at the bottom. Overlaid on this are several glowing blue circles of varying sizes, some of which are interconnected by a network of thin, light-colored lines, creating a complex, web-like structure.

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