



How funding for infrastructures enable Open Science

The EGI Federation Experience

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EOSC Festival
The National Tripartite Event Poland

- **Brief overview on EGI Federation**
 - The role of Poland in the EGI Federation
- **Funding Streams**
- **Access modes and examples**
 - Sponsored based access
 - Pay for Use
 - Membership-based access
- **Final remarks**



A worldwide open scientific computing infrastructure for research

Vision

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

Mission of the EGI Federation

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

Mission of the EGI Foundation

Enable the EGI Federation to serve international research and innovation together

Why a federation?

- Support science at international scale
- Build an hyperscale compute facility for research
- Invest nationally, access globally
- Bring computing to the data



PL-Grid active data centres (2022)

- NCBJ-CIS
- CYFRONET
- PSNC
- WUT



EGI Council Participants

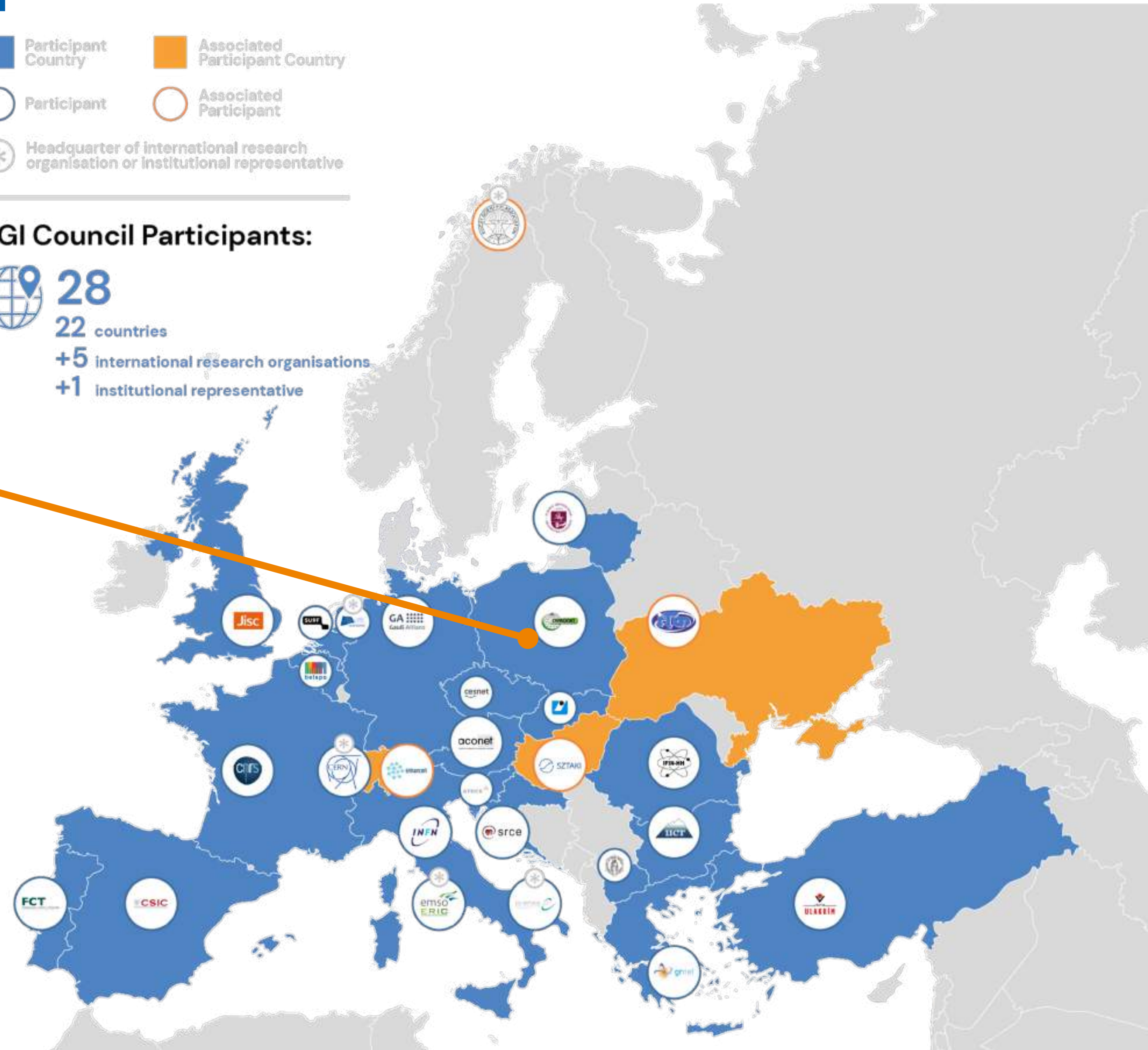


2021/2022 – 6 new members

- Participant Country
- Associated Participant Country
- Participant
- Associated Participant
- * Headquarter of international research organisation or institutional representative

EGI Council Participants:

28
 22 countries
 +5 international research organisations
 +1 institutional representative





EGI Infrastructure impact (2021 data)



> 1.2 Million CPUs
1.3 Exabyte Data

200+
Resource Data
Centers

82.000+
Scientists of
which 1458 in PL

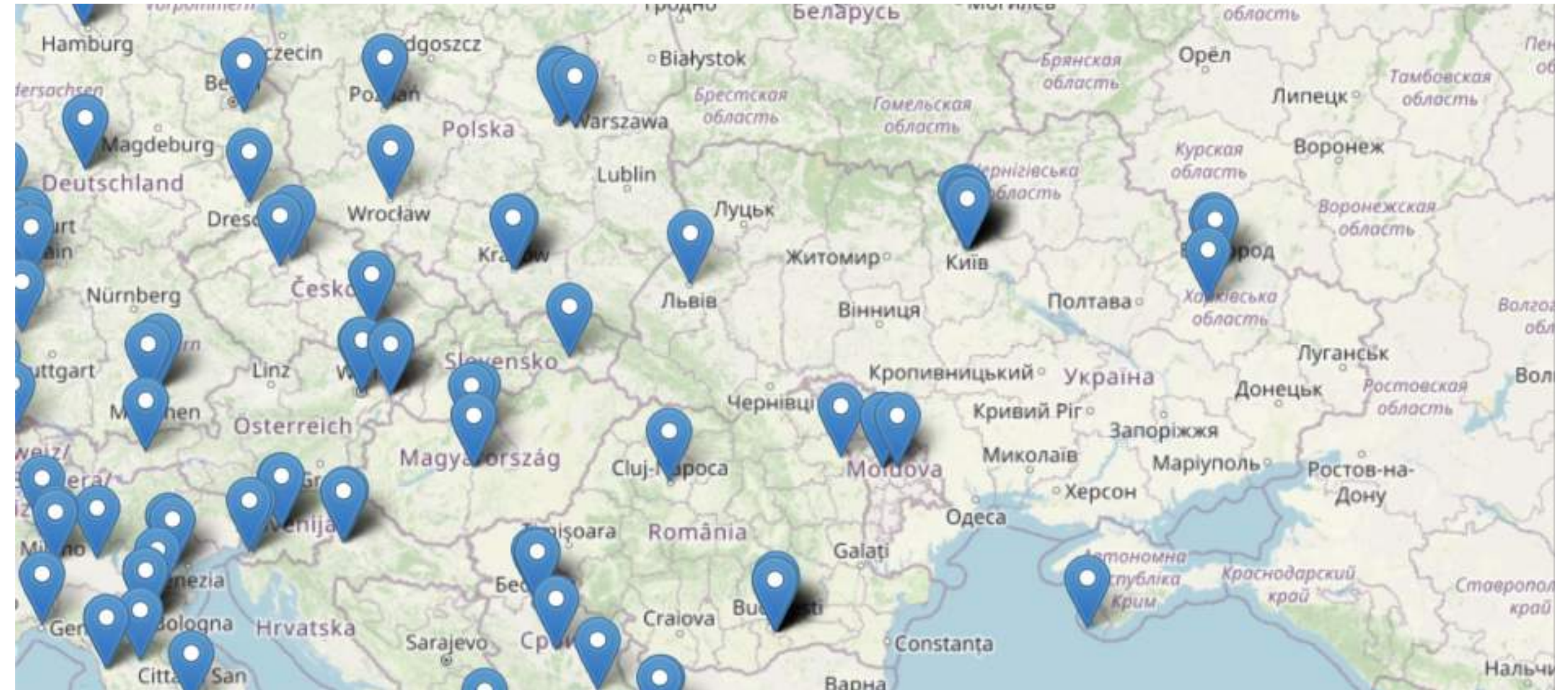


13 Scientific
Collaborations

with Polish participation: AUGER, CLARIN, CTA,
DUNE, ELI-NP, HESS, ILC, KM3NET, LHC, LSST,
SeaDataNet, VIRGO, Structural Biology

~700
Peer reviewed
publications with
Polish authors

Opening infrastructures to support scientists during times of war





ESGI funding and access policies

- **Sponsored Access**

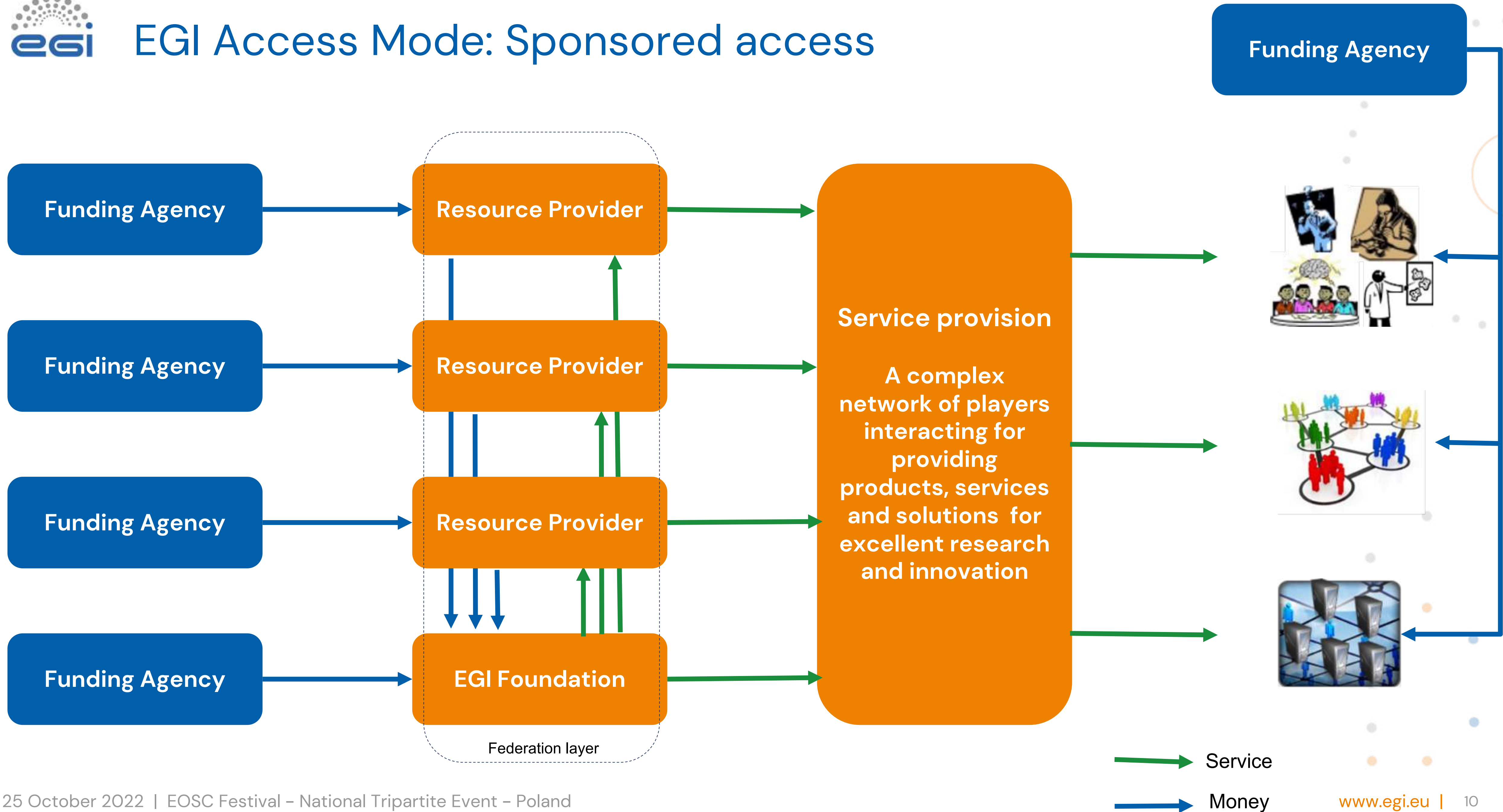
- Virtual Access: EU-funded sponsored access to digital services
 - Policy-based Access: free access based on meeting national/institutional policies
-

- **Pay for Use**

- Direct charge to user (or home institution) based on use
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- **Long-term Partnership in the EGI Federation**

- Annual fee to be part of the EGI Federation
- Services for federation included
- Services for research subject to negotiation



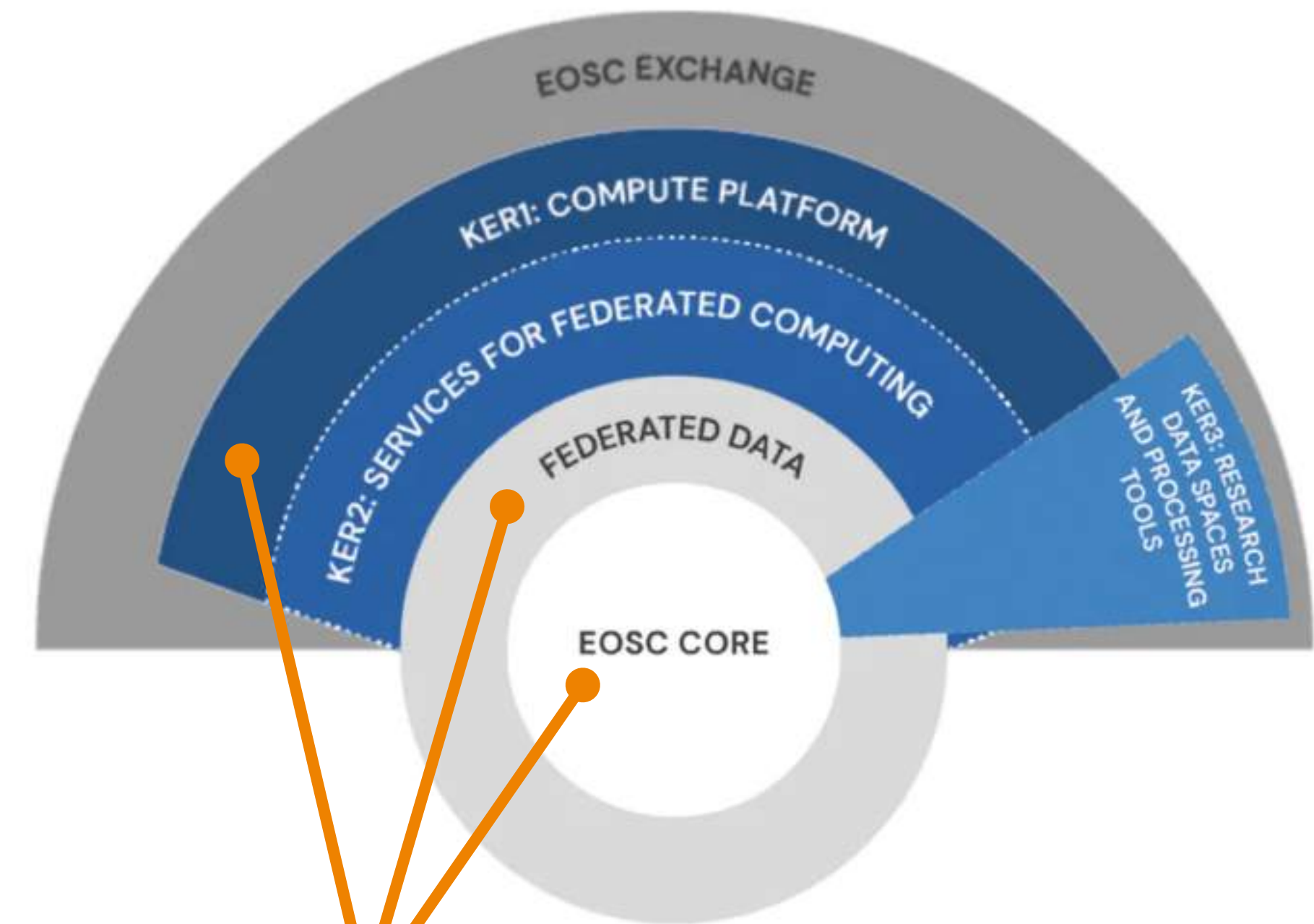


Funding and access policies in EGI: Sponsored Access

Virtual Access in EGI-ACE

EOSC Compute Platform

The EOSC Compute Platform is a distributed computing environment integrated with EOSC Exchange. The Platform is built on a hybrid infrastructure composed of cloud computing resources, High-throughput computing (HTC) sites and High-Performance Computing (HPC) centres. The Platform and associated funding provides **free at the point of use computing and storage resources** along with **user support and training** for researchers and scientific projects. The Platform supports **diverse, distributed data processing and analysis use cases**.



Distributed compute and storage facilities deliver CPU, GPU and Storage

27 Cloud providers: **15** funded with Virtual Access, 23 support EGI-ACE use cases

200+ HTC providers: **1** funded with Virtual Access, 58 support EGI-ACE use cases

4 pilot level HPC centres (BG, TR, PT, ES)



Cloud Compute



High-Throughput Compute



HPC



HPC Integration handbook:
<https://zenodo.org/record/6396471>

Single users, small groups (Long tail)
Experimental users

International projects
Multi-national communities
Research Infrastructures

EOSC USERS

Business-to-User

Business-to-Business

EOSC Portal

- Ready-to-use resources/services
- Self-service configuration
- Short term engagement

<https://marketplace.eosc-portal.eu/>

EGI-ACE Open Call

- High capacity demand
- Custom configurations
- Long term engagement

<https://www.egi.eu/egi-ace-open-call/>

Continuously open, Cut-off dates every 2 months

Serving with the use of...

Local funds
(institutional/national investments)

Customer 'pay-for-use'

EC Virtual Access funds

35 services
80 million CPUh
250,000 GPUh
20 PB storage



Funding and access policies in EGI: Sponsored Access

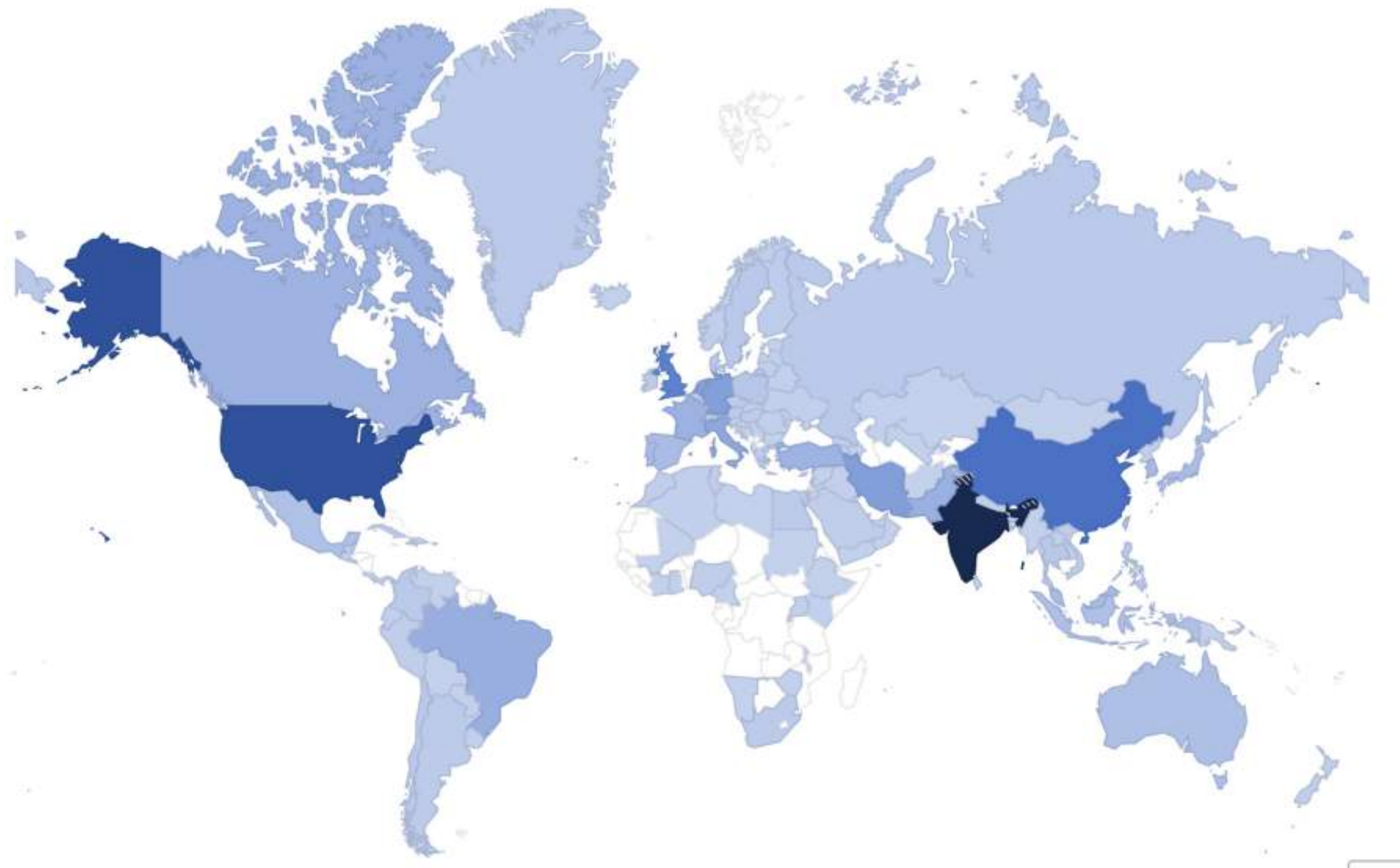
Policy-based access and WeNMR

Open tools for simulation addressing the COVID-19 pandemic

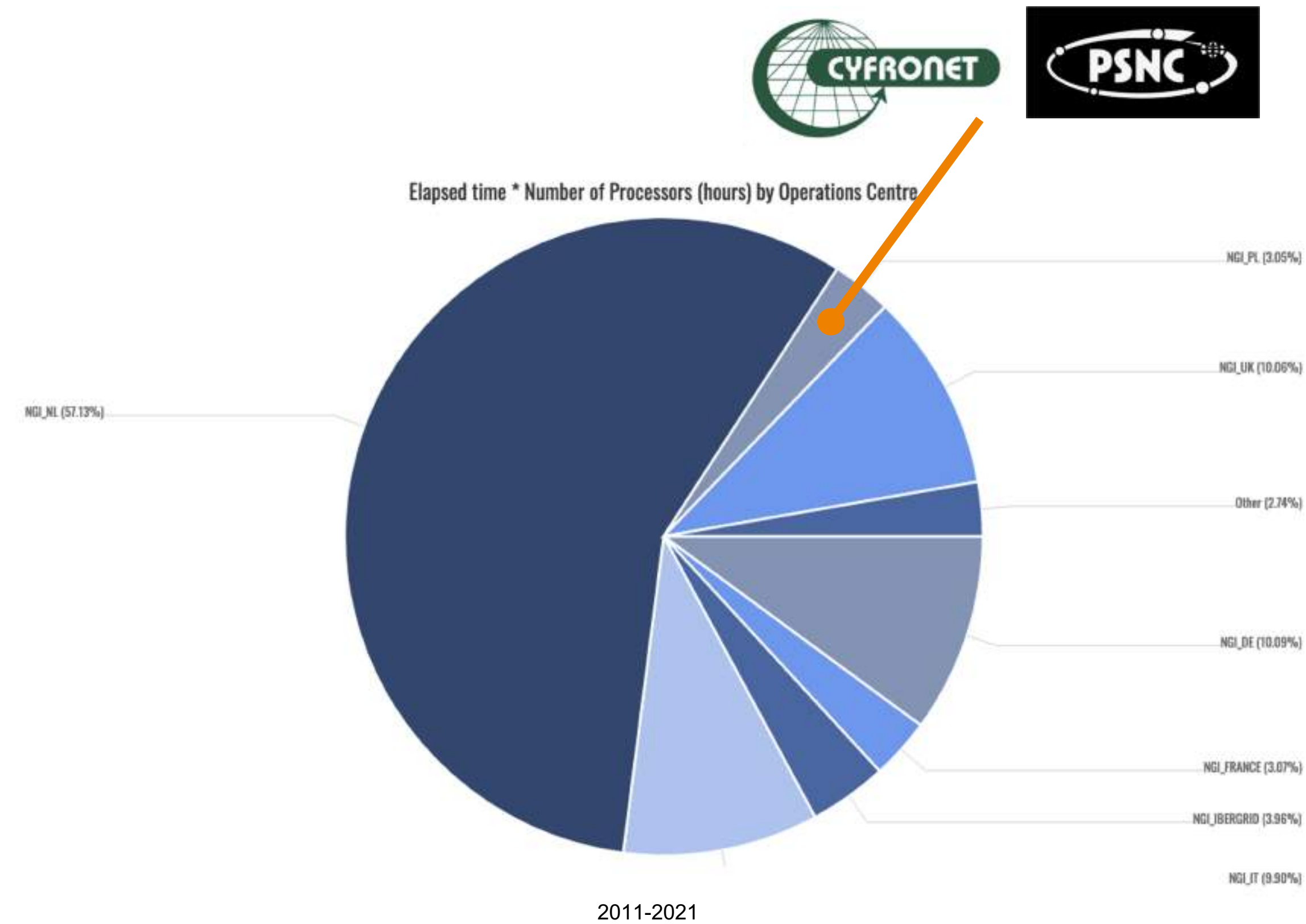
A joint effort of WeNMR, EGI Federation (Europe),
 Open Science Grid (USA) and CBPF (Brazil);
 +100% total capacity increment during 2020-2022

Worldwide User Map

The HADDOCK web portal is being used by **31748 users** across **136 countries!**



Elapsed time * Number of Processors (hours) by Operations Centre





Funding and access policies in EGI: Pay for use

Paid access: The PolicyCloud project

- **Intelligent policies for the food value chain**
 - Implementing environmental policies to boost the growth and development of the agri-food industry

- **Open Data Policies for Citizens**
 - Predicting unemployment and associated risks to guide social services policy planning

- **Urban policy making through analysis of crowdsourced data**
 - Facilitating urban policy making and monitoring through the analysis of crowdsourced data

- **Policies against radicalisation**
 - Collecting and analysing data from social media and message boards in order to offer policy makers the data and tools required to address radicalisation effectively





Funding and access policies in EGI: Long-term partnership

EGI membership: the EMSO ERIC success story

<https://www.egi.eu/case-study/emso-eric/>

- **EMSO ERIC consists of a system of regional facilities placed at key sites around Europe, from North East to the Atlantic, through the Mediterranean, to the Black Sea. Observatories are platforms equipped with multiple sensors, placed along the water column and on the seafloor.**
- **EGI Federation**
 - It supports the EMSO ERIC Data Portal software stack, including back-end processes and data services exposed to users
 - Development and testing: It provides an environment for software evolution and testing, including configuration management, continuous integration and functional testing.

Services from EGI



EGI Cloud Compute

Run virtual machines on-demand with complete control over computing resources

[Read more](#)



EGI Online Storage

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

[Read more](#)



EGI Check-in

Login with your own credentials

[Read more](#)



EGI Training and consultancy

Dedicated computing and storage for training and education and consultancy activities

[Read more](#)



Learn more about how EGI supports research infrastructures
<https://www.egi.eu/publication/egi-for-research-infrastructures/>

- **Opening access to data, software and infrastructures cross-border and cross-organization has a cost**
 - EGI-ACE demonstrated the successful integration of EU and national funding to increase cross-border access
 - EOSC needs to provide rewarding mechanisms to promote sharing and recuperate the marginal costs generated by open access
- **Qualified experienced research support and consultancy is essential for the adoption of innovative services and to make more effective use of research assets**
 - Funding models should consider also the support of federated European network of distributed expert teams
- **The combined funding and access of data, software and a distributed computing infrastructure are together necessary enablers of open science**



Thank you

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