Computing in the European Open Science Cloud Challenges and opportunities

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2021-2023

EGI-ACE

2018-2021

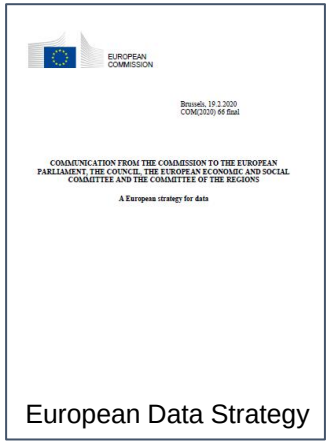
EOSC-hub

- EOSC Portal and Marketplace
- Services Management System
- Rules of Participation
- Services in the Hub portfolio
- Services in the EOSC Portfolio
- Digital Innovation Hub
- Business models
- Interoperability Guidelines
- Training courses

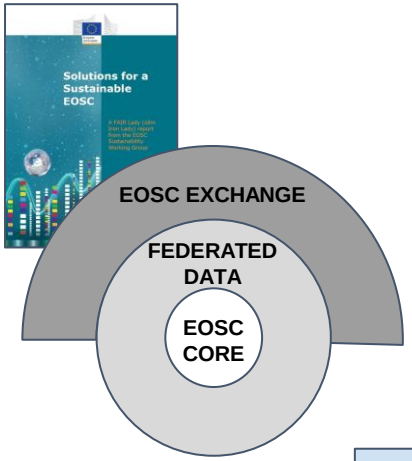
2017-2019

EOSCpilot
The European Open Science Cloud for Research Pilot Project

- Science Demonstrators
- Service Pilots
- Interoperability Architecture
- Governance Framework



European Data Strategy



INFRAEOSC-07:

VIRTUAL ACCESS

Lockdown

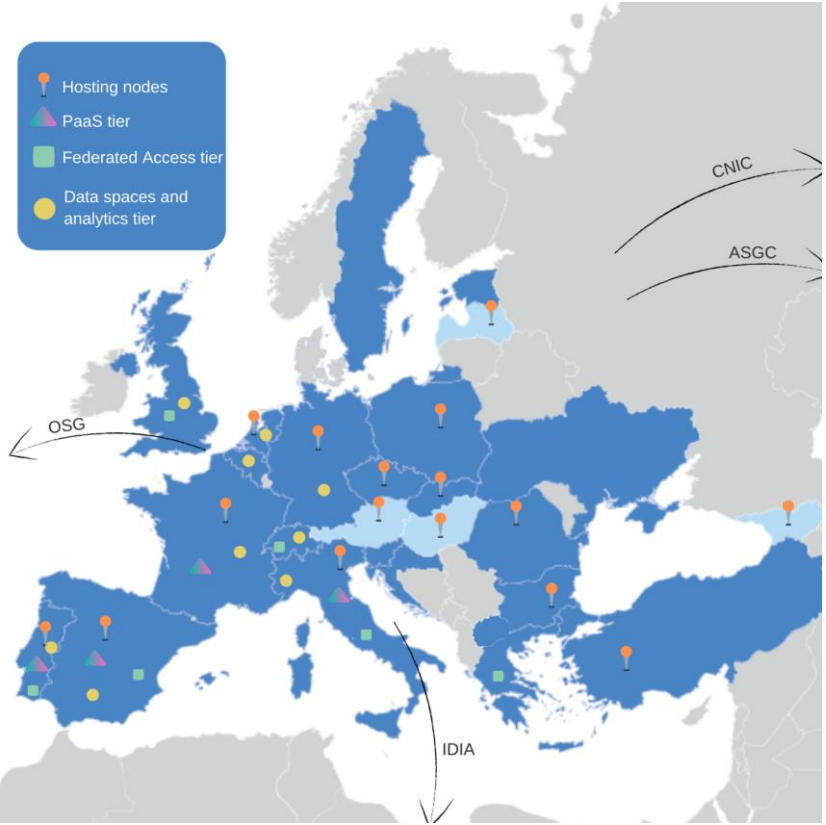
ALL: Shaping services for the EOSC (Wed 2pm)

C-SCALE: Unlocking the Potential of Copernicus Data (Wed, 11am)

EGI-ACE mission

Implement the **Compute Platform of the EOSC** and contribute to the **EOSC Data Commons** by delivering integrated computing, platforms, data spaces and tools as an integrated solution that is **aligned with** major European cloud federation projects and HPC initiatives.

An EGI flagship project



Consortium:

- 33 Partners, 24 third parties
- EGI council members + Research Infrastructures

Budget:

- 8 M EC + 4 M in-kind

Scope:

1. Service delivery
   (Virtual Access to 38 installations)
2. Co-development of ‘thematic services’
3. Broadening

1. Service delivery

Portfolio of user facing services in EOSC

Data Spaces and Analytics
Data and thematic data analytics and processing tools

Platforms
generic added-value platform level services

Federated Access
Federation-wide management of data and computing

Federated Resources
Compute and storage facilities

Service Management = Tools + Processes + Policies

Thematic application services

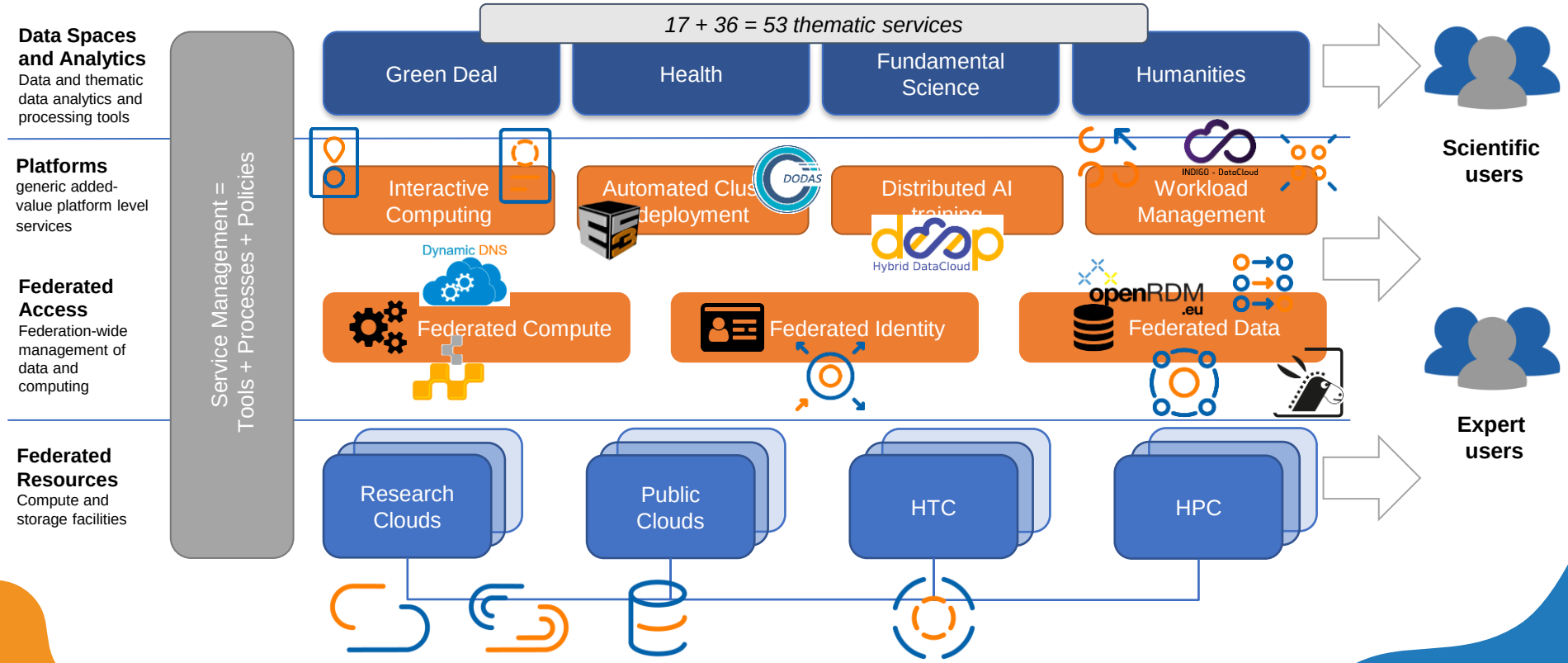
Platform services

Infrastructure services

Scientific users

Expert users

Portfolio of user facing services in EOSC



Delivery channels

EOSC USERS

Business-to-User

194 Orders + Open access

EOSC Portal

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

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

Business-to-Business

42 applications

EGI-ACE Open Call

- High capacity demand
- Custom configurations
- Long term engagement

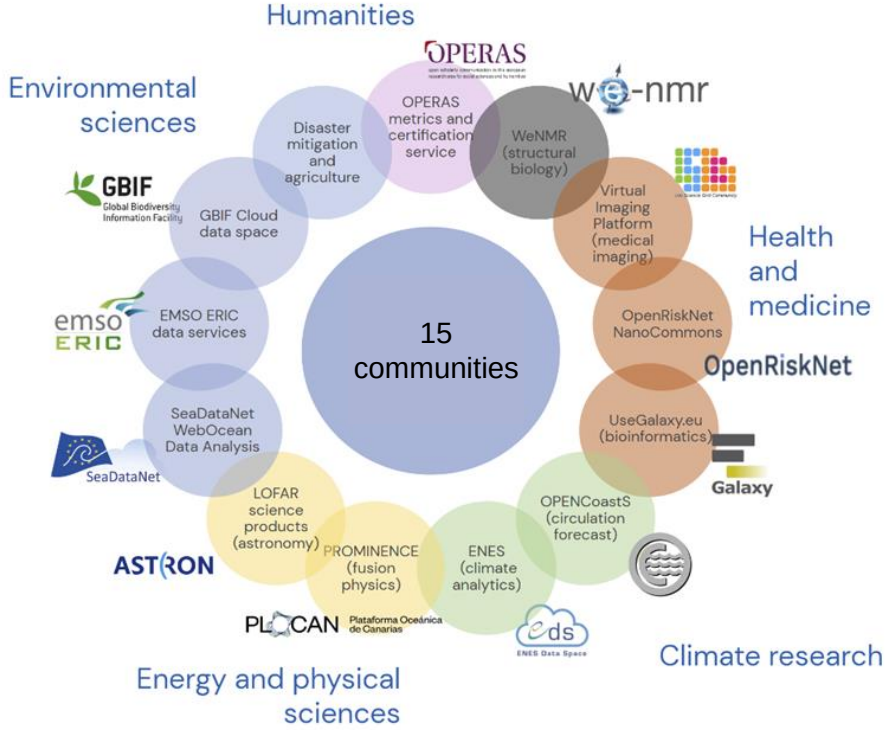
https://www.egi.eu/egi-ace-open-call/

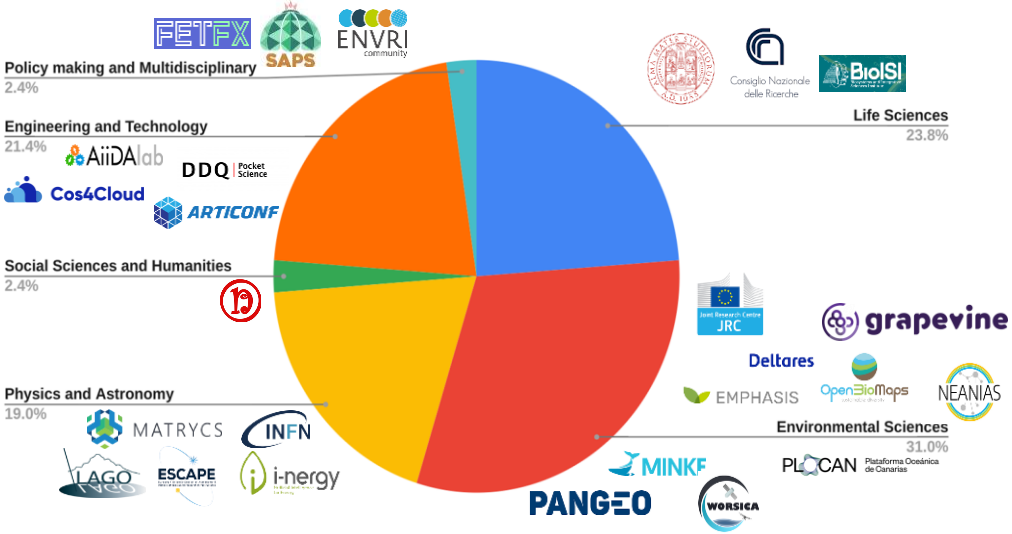
Continuously open, Cut-off dates every 2 months

Served nearly 80,000 users

2. Co-development

Enabling a thematic service* ecosystem





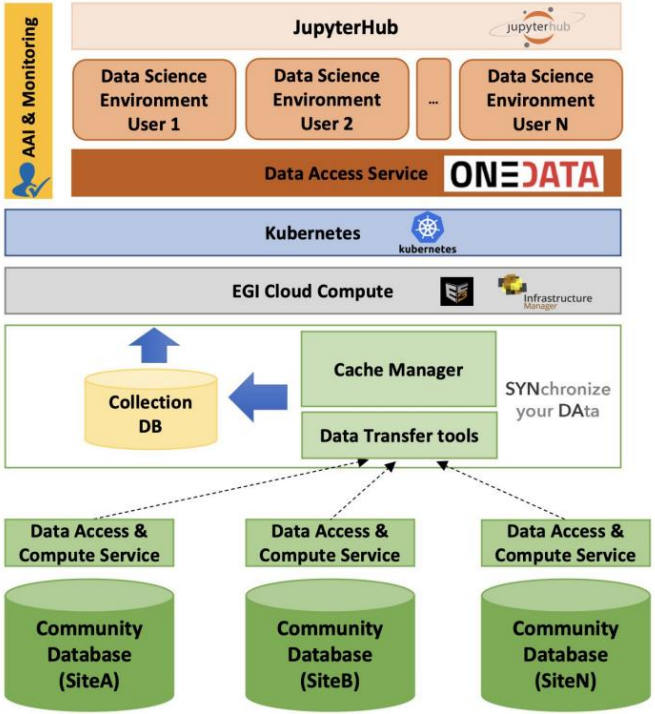
***17* from the consortium**

***36* from external communities**

* Thematic services are a subset of our users/providers. Thematic services are online services setup and operated on top of EGI-ACE infrastructure and platform services for disciplinary groups.

European Network for Earth System Modelling

Open, scalable and cloud-enabled **data space** for **climate data analysis**



Applications

Application scaling

Data serving

Data

EGI provides:

- Check-in
- Notebook
- Cloud Compute
- HPC (pilot)
- DataHub
- Online Storage

is-enes

ESGF

See the demo tonight!

3. Broadening

Resource infrastructure expansion

Distributed compute and storage facilities deliver CPUs, GPUs and Storage

- **29 Cloud** providers: 15 funded with VA, 23 supporting EGI-ACE SLAs
- **200+ HTC** providers: 1 funded with VA, 58 supporting EGI-ACE SLAs
- **4 pilot HPC** centres, all supporting EGI-ACE

Cloud Compute

Cloud Container Compute

High-Throughput Compute

Online Storage

HPC (Pilot)

EGI Cloud uptake during EGI-ACE (CPU-hours)

102 Million CPU-hours delivered for EGI-ACE users

- Virtual Access: 72 Mill CPUh
- Local funds: 25 Mill CPUh
- Pay-for-use: 5 Mill CPUh

} **+40% on top of VA**

Collaborations

with non-European e-Infrastructures

IDIA

中国科学院 计算机网络信息中心
Computer Network Information Center, Chinese Academy of Sciences

OSG

Red CLARA
Cooperación Latino Americana de Redes Avanzadas

with ESFRIs

METROFOOD
INFRASTRUCTURE FOR PROMOTING METROLOGY IN FOOD AND NUTRITION

E-RIHS.it
EUROPEAN RESEARCH INFRASTRUCTURE FOR HERITAGE SCIENCE

instruct ERIC

SoBigData++

EBRAINS

slices RI

eu openscreen

with industry
(EGI Digital Innovation Hub)

DigiFarm

agilia

cloudSME

net7 create develop amplify

CITE

BIOINVEST-AGRO INNOVATION COMPANY

OiPub

ΚΑΙΜΑΜΗΧΑΝΙΚΗ 1984 ΟΑΙΣΤΙΚΗ ΕΝΕΡΓΕΙΑΚΗ ΔΙΑΧΕΙΡΙΣΗ

BEAMIDE

deepblue

Builtrix Connected-Building Solution

RENVIS RESEARCHING VISIONS

Bike square bikesquare.eu powered by e·on

Unleashing the Power of Computing in EOSC: Overcoming Challenges with Effective Solutions

- Computing in EOSC - Challenges and opportunities
  11:00 – 11:30
- Reaching the Users: Efficient strategies for EOSC engagement
  11:30 – 11:50
- A Compute - Data Continuum for Open Science
  11:50 – 12:10
- What does it take to deliver 24/7 services?
  12:10 – 12:30

We did it! The innovation impact of EGI-ACE

- Session introduction
  13:30 – 13:35

User

- A European big data analytics platform in geosciences with Pangeo
  13:35 – 13:45
- Scalable online analysis and visualisation of environmental data with webODV in the cloud
  13:45 – 13:55

Service

- Container execution and management at a European scale
  13:55 – 14:05
- Reproducible open science with EGI-ACE Notebooks and Binder
  14:05 – 14:15

Operation

- Use or misuse? Security solutions for trust
  14:15 – 14:25
- Federated High Performance Computing in EOSC
  14:25 – 14:35

- Panel Discussion
  14:40 – 15:30

The way forward. Computing in EOSC: evolving the role of the EGI Federation

- Future Perspectives and EGI-ACE Recommendations
  16:00 – 16:20
- Panel discussion
  16:20 – 17:05
- Closing Remarks and Key Takeaways
  17:05 – 17:15

Demonstrations, posters with 1’ pitches (17:30-21:00)

Thank you!

Contact: **egi-ace-po@mailman.egi.eu**
Website: **www.egi.eu/projects/egi-ace**

EGI Foundation

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