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@EGI_eInfra

ELKH Cloud in a global landscape

*Inauguration ceremony, enhanced ELKH Cloud infrastructure
Tiziana Ferrari, Director, EGI Foundation*



The work of the EGI Foundation
*is partly funded by the European Commission
under H2020 Framework Programme*



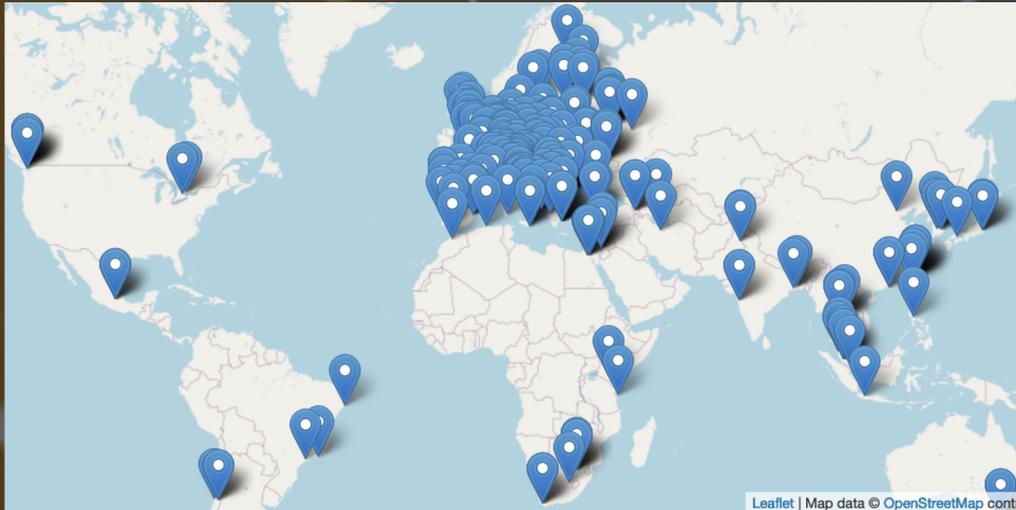
EGI Federation

European flagship digital
infrastructure for data-intensive
scientific computing



Why a federation?

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



>1.2 Million CPUs
>1.3 Exabyte of data
>170 scientific projects



EGI and ELKH Cloud

With EGI, ELKH Cloud is part of this global international infrastructure to support European scientific collaborations

SZTAKI is associated to EGI since 2021 and participates in the EGI-ACE project

Architecture

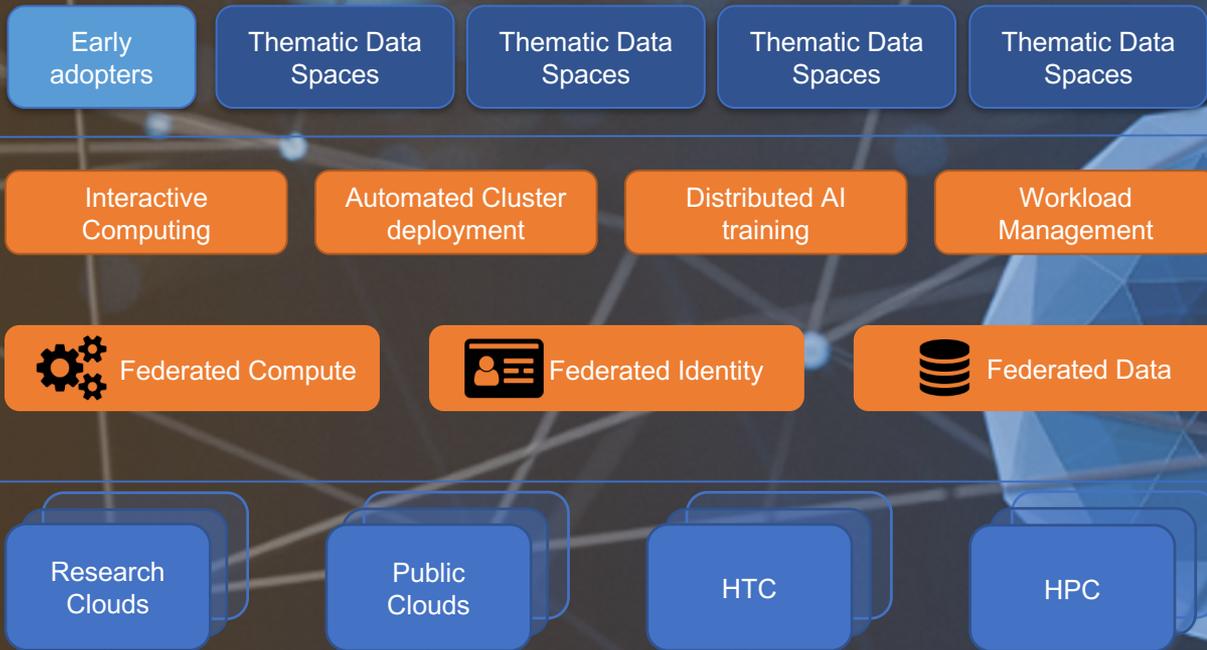
Data Spaces and Analytics
Data and thematic data analytics and processing tools

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



- ⇒ Foundation of the EOSC Compute Platform - <http://go.egi.eu/egi-ace>
- ⇒ Governance, Architectures and Business Models for Data and Cloud Federations: the EOSC and GAIA-X Case Studies - <https://zenodo.org/record/5081865>

77,000
researchers
worldwide

The Nobel Prize in Physics 2013

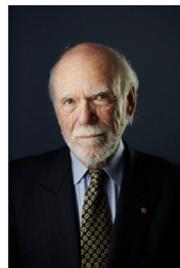


© Nobel Media AB. Photo: A. Mahmoud
François Englert
Prize share: 1/2

© Nobel Media AB. Photo: A. Mahmoud
Peter W. Higgs
Prize share: 1/2

The Nobel Prize in Physics 2013 was awarded jointly to François Englert and Peter W. Higgs "for the theoretical discovery of a mechanism that contributes to our understanding of the origin of mass of subatomic particles, and which recently was confirmed through the discovery of the predicted fundamental particle, by the ATLAS and CMS experiments at CERN's Large Hadron Collider."

The Nobel Prize in Physics 2017

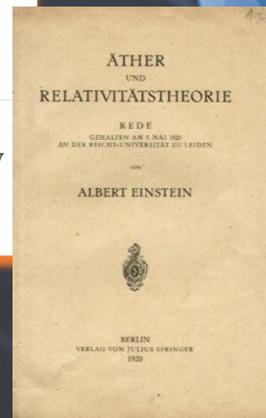
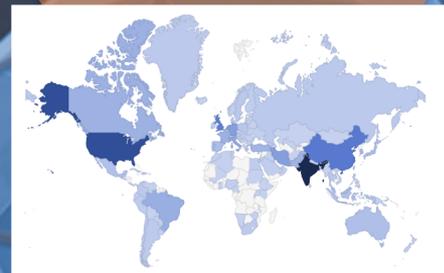


© Nobel Media AB. Photo: A. Mahmoud
Rainer Weiss
Prize share: 1/2

© Nobel Media AB. Photo: A. Mahmoud
Barry C. Barish
Prize share: 1/4

© Nobel Media AB. Photo: A. Mahmoud
Kip S. Thorne
Prize share: 1/4

The Nobel Prize in Physics 2017 was divided, one half awarded to Rainer Weiss, the other half jointly to Barry C. Barish and Kip S. Thorne "for decisive contributions to the LIGO detector and the observation of gravitational waves."





European Open Science Cloud

“EOSC: A multi-disciplinary environment where researchers can publish, find and re-use data, tools and services, enabling them to better conduct their work”

builds on existing infrastructures and services supported by the EC, Member States and research communities. It brings these together in a federated ‘system of systems’

EGI delivers the EOSC Compute Platform
with the EGI-ACE project

27 cloud providers



New global
providers in 2022

Cloud integration programme



Check-in – single sign on across services and providers



DataHub – replication of scientific data to national clouds



AppDB – distribution of applications & services to national clouds



Serving international communities



International research infrastructures and projects



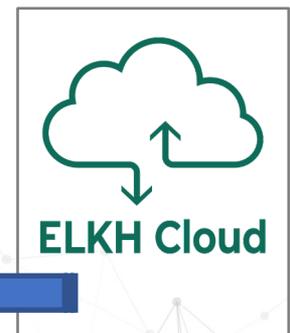
Resource brokering and access management process



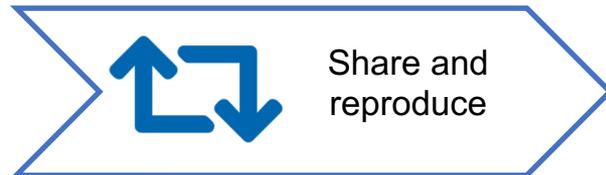
Technical Federation
Single Sign On + Data replication + Application distribution



National compute infrastructures



Notebooks & Binder: reproducible open science



DataHub integration for transparent access to distributed data

Create documents with code, visualisation and text that run on cloud providers

The screenshot shows a JupyterLab environment. On the left, a file browser displays a list of files and folders, including 'datablab' which is highlighted. The main area contains a code editor with a Python script that defines a map layer and adds it to a map. Below the code, a map of Europe and the Middle East is displayed with several blue location pins. The bottom status bar indicates the environment is 'Python 3' and the mode is 'Command'.

Share notebooks with just a link, reproduce with binder

Access EGI Federation and national infrastructure from your web browser



**EGI and ELKH Cloud
will partner projects to innovate
scientific computing**



EGI Conference 2022

See you in Prague, 20-22 September!

<https://www.egi.eu/events/save-the-date-egi2022/>