Introduction to EGI

Vision and mission

Solutions

Governance

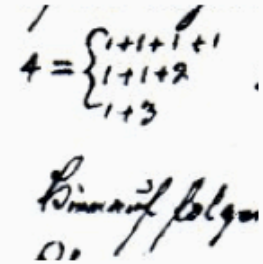
International collaborations

www.egi.eu

EGI-Engage is co-funded by the Horizon 2020 Framework Programme
of the European Union under grant number 654142

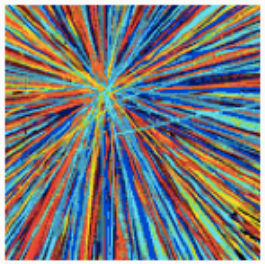
EGI

- A globally distributed ICT infrastructure that federates the digital capabilities, resources and expertise of national and international research communities in Europe and worldwide.
- Mission: empower researchers from all disciplines to collaborate and to carry out data- and compute-intensive science and innovation.



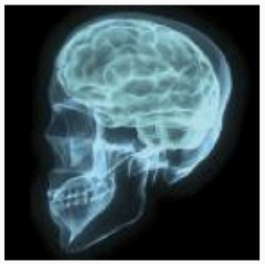
[Natural Sciences](#)

Life Sciences, Earth Sciences, Mathematics, etc



[Physical Sciences](#)

Physics, Astronomy, Chemistry etc



[Medical and Health Sciences](#)

Medicine, Clinical sciences, etc

[Engineering & technology](#)

Material science, civil and mechanical engineering, etc

[Agricultural sciences](#)

Veterinary sciences, food technology, etc

http://www.egi.eu/case-studies/

The Open Science Commons Vision

Researchers from all disciplines have easy, integrated and open access to the advanced digital services, scientific instruments, data, knowledge and expertise they need to collaborate and achieve excellence in science, research and innovation.

→ *They feel engaged in governing, managing and preserving these resources for everyone's benefit, with the support of all stakeholders.*

OpenScience Commons

*With this paper, EGI proposes the **Open Science Commons** as a new approach to digital research, tackling policy challenges and embracing open science as a new paradigm for knowledge creation and collaboration.*

EGI invites organisations from the research landscape to join it in this journey to develop these concepts, and through them to advance the implementation of the European Research Area.

European policy context

The European Research Area (ERA) was endorsed by the European Council in 2000 [1] as a way to build *"a unified research area open to the world based on the Internal Market, in which researchers, scientific knowledge and technology circulate freely and through which the Union and its Member States strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges"* [2].

Several actions for the ERA implementation have been undertaken by many actors with the aim of increasing the performance of European research through mobility and cross-border cooperation. Examples are the establishment of the European Strategy Forum on Research Infrastructures (ESFRI) and the e-infrastructure development for connectivity, high performance, grid and cloud computing and data. These initiatives sought to unite major user communities to ensure their expansion to Research Infrastructures.

The 2013 White Paper [3] released by the European e-Infrastructure Reflection Group (e-IRG) stated that *"...Europe needs a single 'e-Infrastructure Commons' for knowledge, innovation and science, as a living ecosystem, which is open and accessible and continuously adapts to the changing requirements of research"*, to support the ERA and the emerging ESFRI communities.

Since then, the rapid growth of scientific data has highlighted the need for an open approach as a core aspect of the ERA. In its Horizon 2020 consultation report on Open Infrastructures for Open Science, the European Commission concluded that *"open data e-Infrastructures increase scope, depth and economies of scale of the scientific enterprise. They are catalysts of new and unexpected solutions to emerge by global and multidisciplinary research. They bridge the gap between scientists and the citizen and are enablers of trust in the scientific process"* [4].

This vision implies a European dimension beyond national and regional approaches, and an increase in capacities and capabilities.

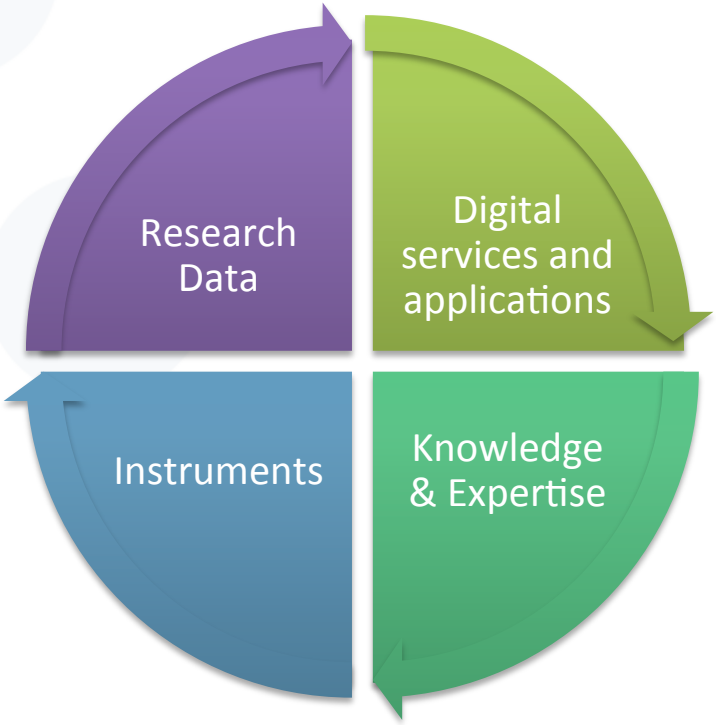
The European Grid Infrastructure (EGI) – http://www.egi.eu
Open Science Commons – http://www.opensciencecommons.org

https://www.opensciencecommons.org/
http://go.egi.eu/osc

European Council conclusions, May 2015,
http://www.consilium.europa.eu/en/meetings/compet/2015/05/28-29/

Open Science Commons: Definition

- A set of interrelated resource systems governed as commons that support the open creation and dissemination of scholarly knowledge

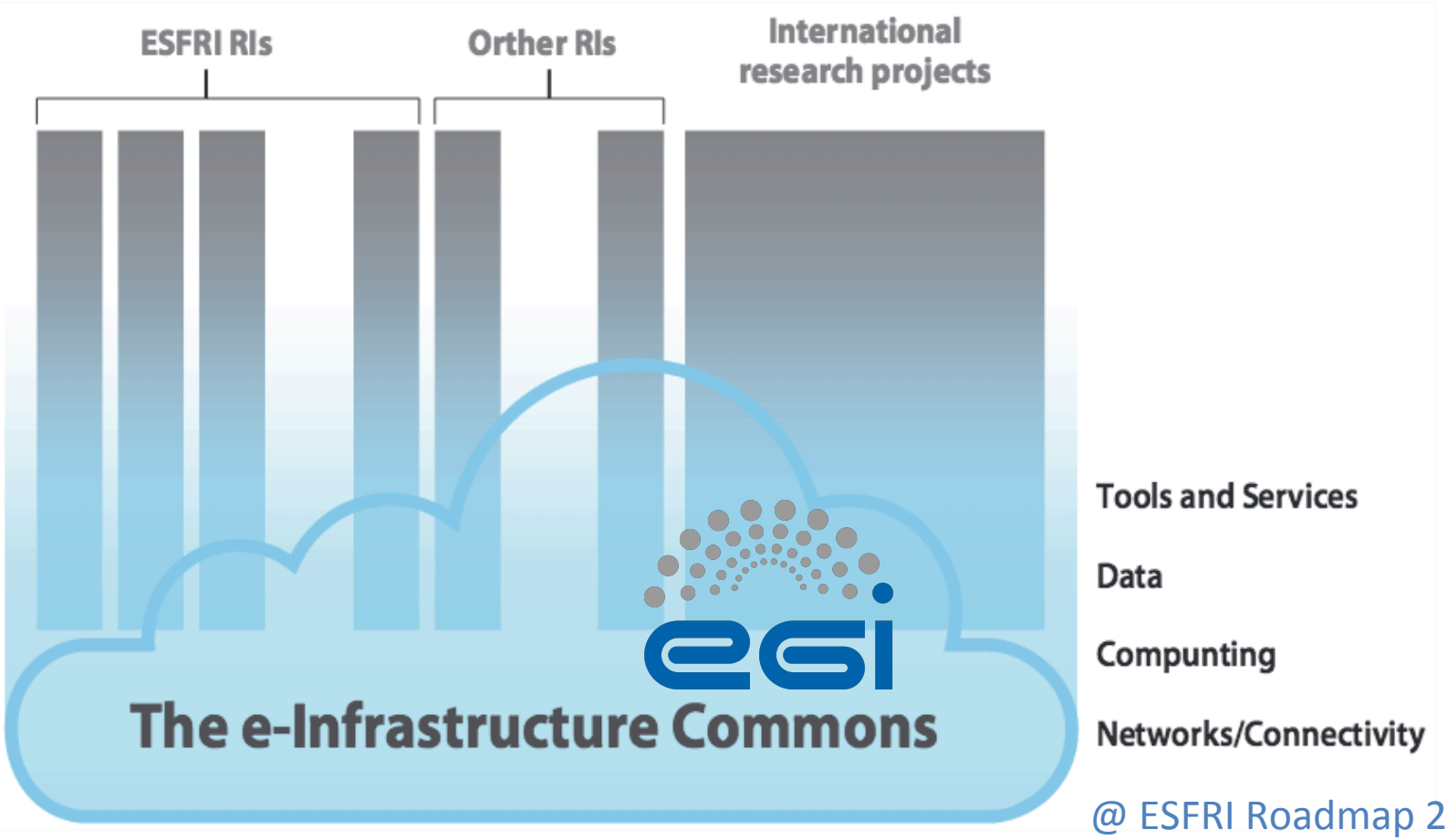


Applying the Commons to Open Science

- Shared resources
  - Integrated, easy and fair access ➔ EGI: Compute, Storage, Software and Tools
- Engaged communities
  - Participating in the process ➔ EGI: hybrid, federating community infrastructures
  - Culture of sharing ➔ EGI: enable opportunistic use
  - Collaborating in the management and stewardship ➔ EGI: thematic services with SLAs (B2B), and UAs in EGI-Engage
- Governance
  - Rules to access and participation ➔ EGI: for users and providers
  - Rules to resolve conflicts ➔ EGI: boards for User Community, Technology and Operations Management coordination
  - Rules to balance quality vs. openness ➔ EGI: OLAs
- Financial support
  - For long-term availability ➔ EGI: national funding for capacity building, fees for operating the federation fabric

Horizontal and thematic infrastructures

EGI contributes to the “e-Infrastructure Commons” with generic solutions for shared needs and requirements

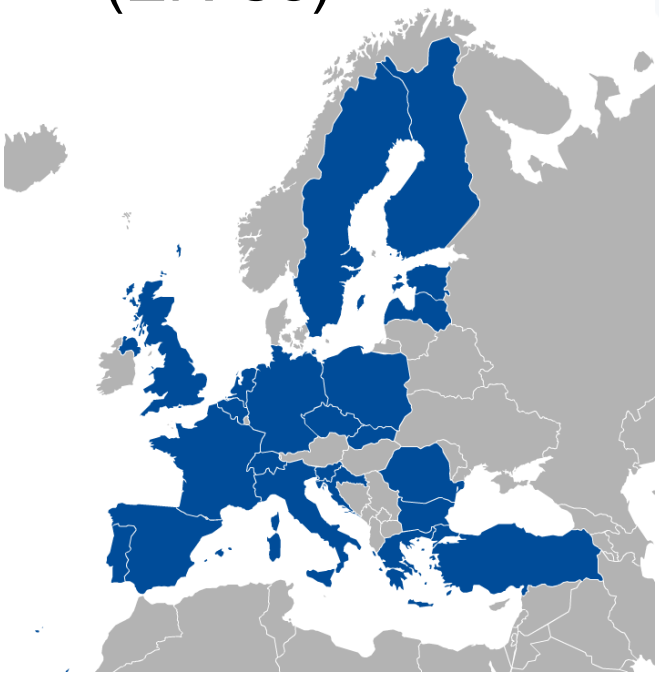


@ ESFRI Roadmap 2016

EGI Membership

http://www.egi.eu/about/EGI.eu/

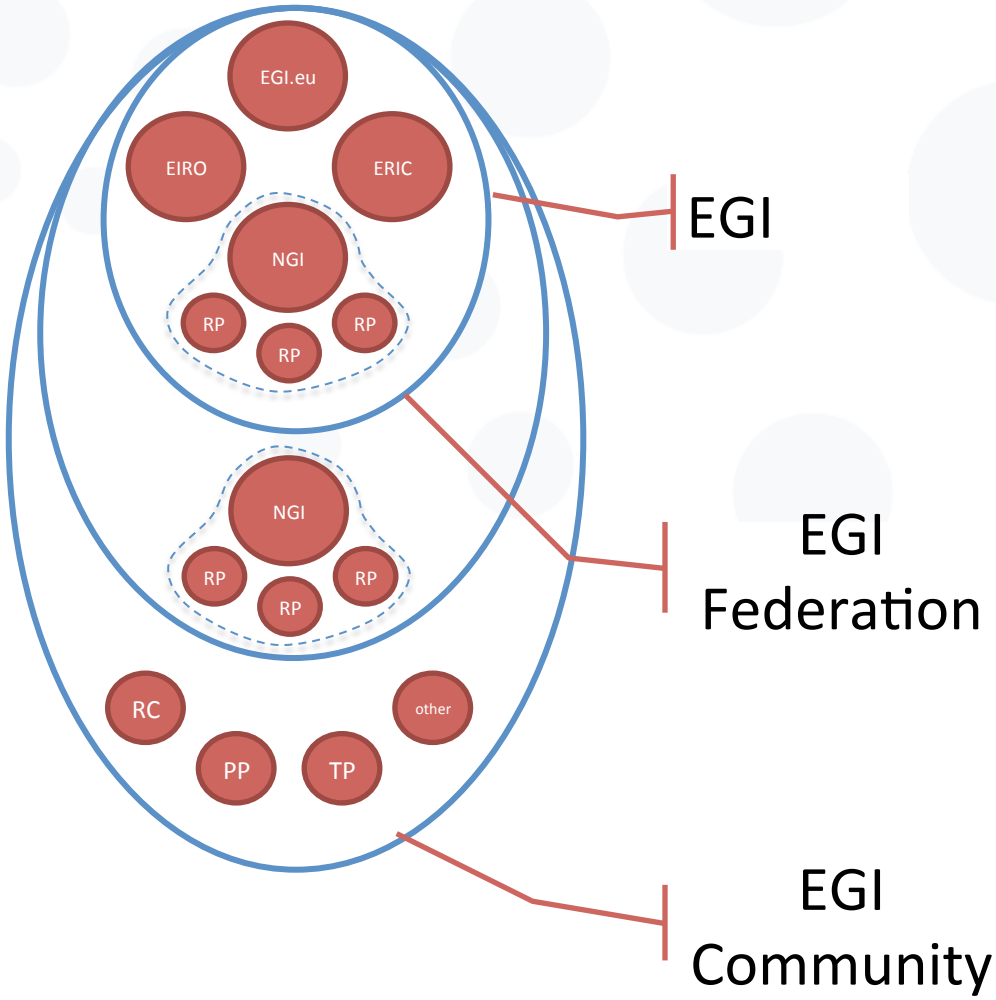
- Major national e-Infrastructures: 22 NGIs
- EIROs: CERN and EMBL-EBI
- EGI Foundation
- (ERICs)



EGI and EGI Participants

- EGI
  - deliver services through its participants and collaborating e-Infrastructures
  - harmonizes service delivery and policies
- EGI Participants
  - develop local capacity with own funding
  - build on national strengths and priorities

EGI ➔ EGI Federation ➔ EGI Community



Term	Definition
EGI	EGI.eu, the EGI.eu Participants and Associated Participants, their related organisations represented within EGI.eu that contribute to the objective of the foundation
EGI Federation	EGI Partnership plus all resource providers (RP) and representing organisations that established an MoU with EGI.eu
EGI Community	EGI Federation plus the served research communities (RC), the the technology providers (TP), partners in projects (PP) and all other organisations having agreements with EGI.eu

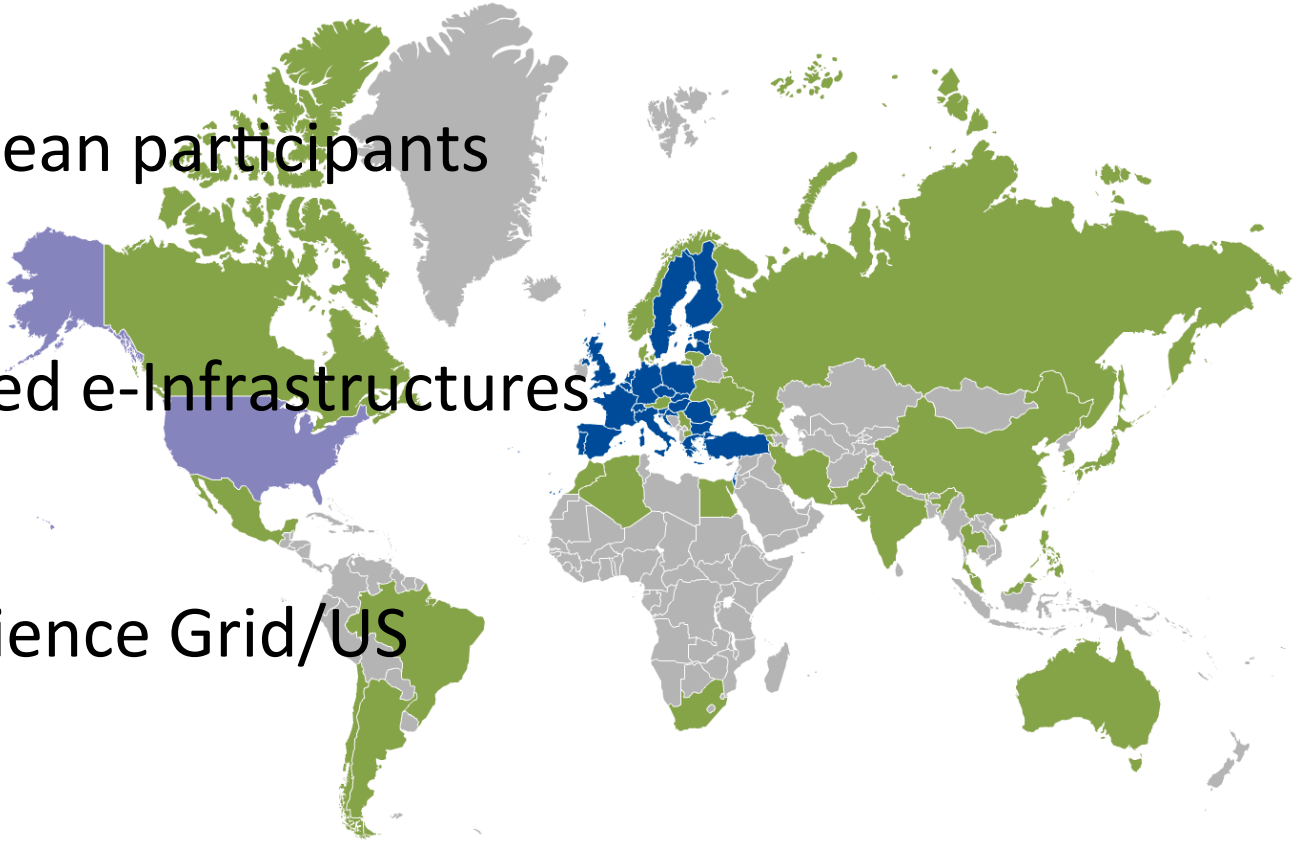
A system of open e-Infrastructures

http://www.egi.eu/infrastructure/

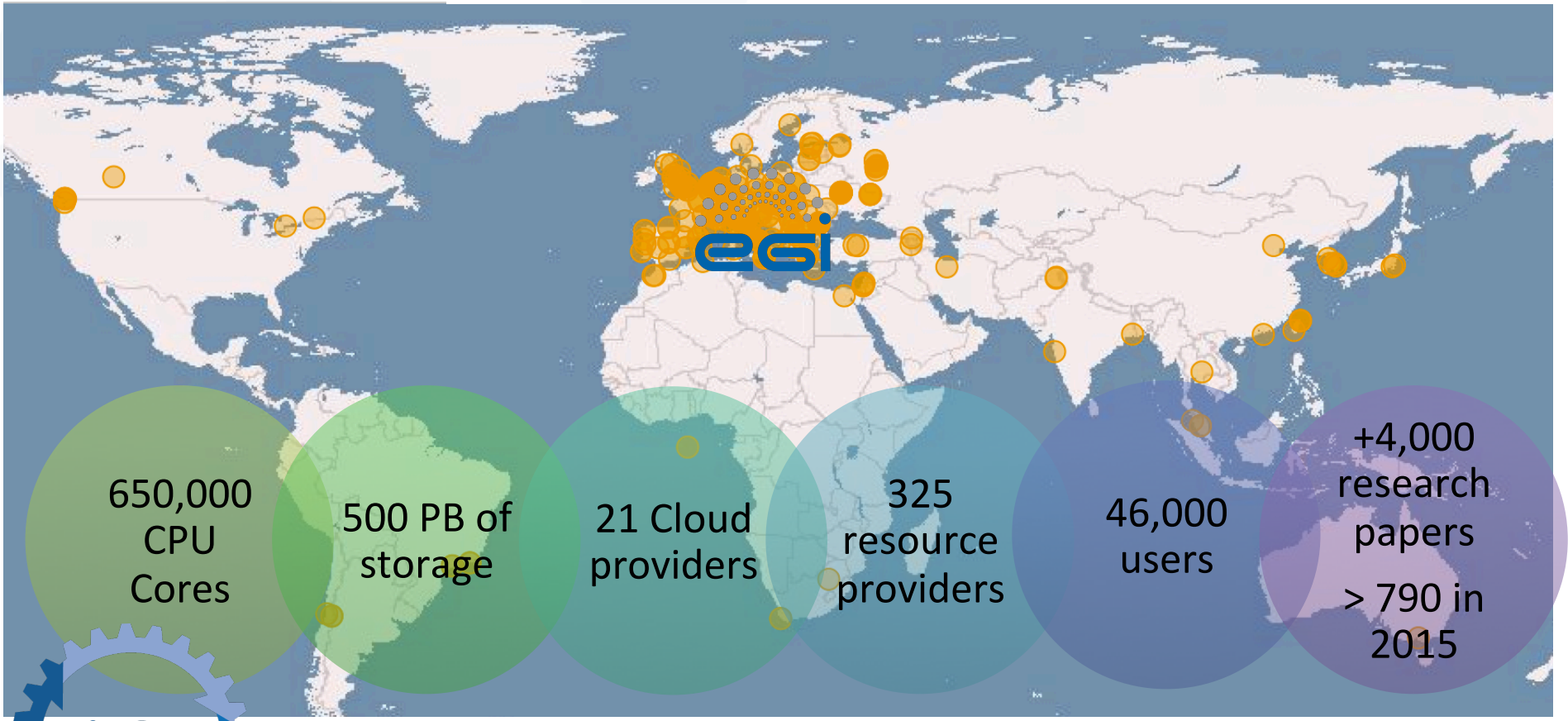
EGI 24 European participants

6 Integrated e-Infrastructures

1 peer Open Science Grid/US



EGI Federation, 2016 QR1



EGI Federated Cloud

https://wiki.egi.eu/wiki/EGI_Federated_Cloud

21 providers

- Publicly funded, one commercial
- Offer of virtual access to GPU
- + 2 sites ready to enter production (JINR, BITP)

28 projects over the last 12 months

- Activity starting from CCs: Elixir, MoBrain, LifeWatch

Training infrastructure

- 5 sites, +10 events run on the infrastructure

Funding

Local infrastructure capacity building and operations

- National funding
- ESIF
- Research funds

EGI Participants

Federation services and processes

- EGI council fees
- EGI participants' in kind contributions
- H2020

EGI.eu

Research and Innovation Human networks

- National funding
- H2020

EGI Community

Service Portfolio

Components

Technical Architecture

Access policies

User groups

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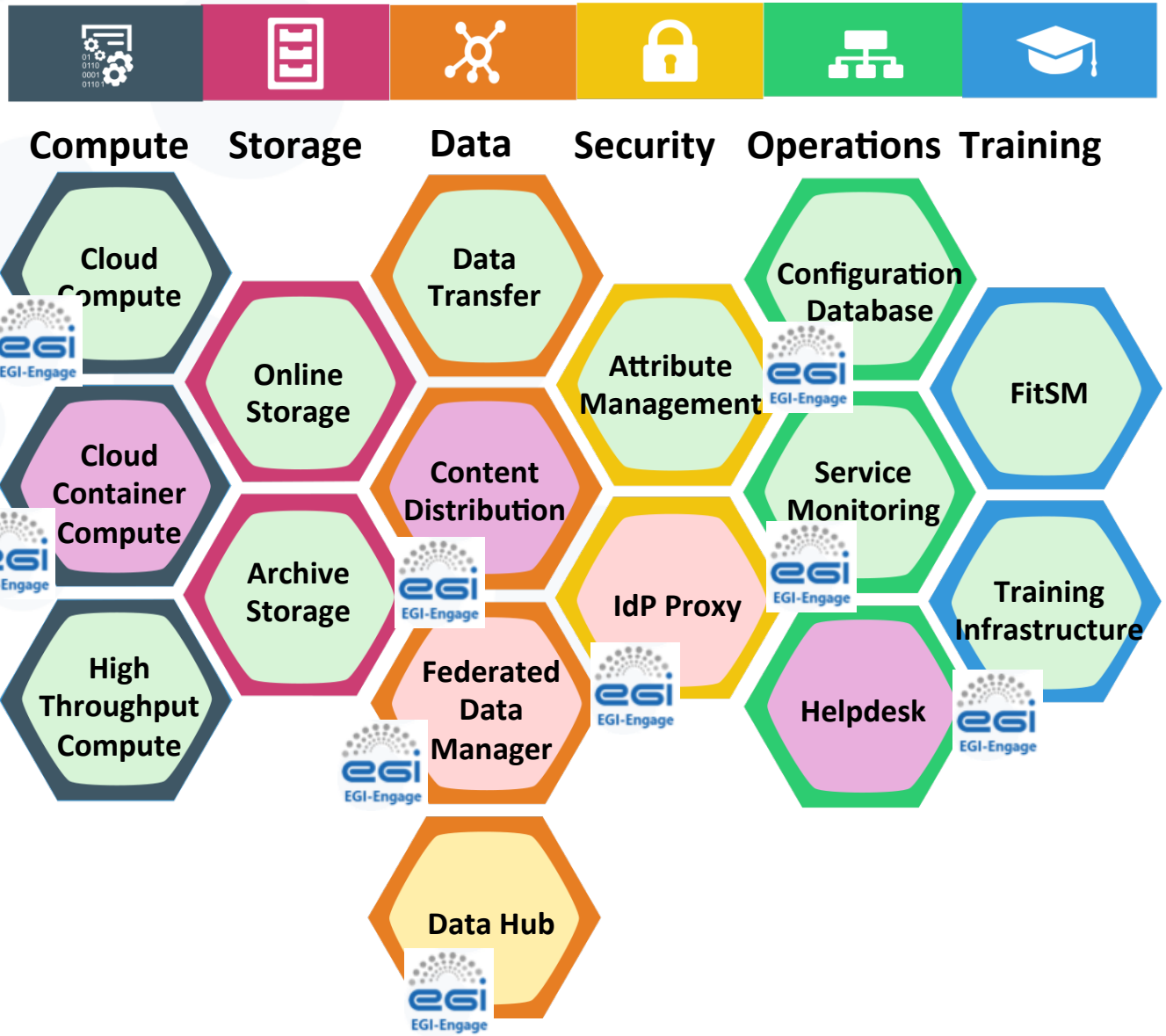
06
TRAINING
LEARN WITH EGI INFRASTRUCTURE
01
COMPUTE
RUN, EXECUTE, ANALYZE
02
STORAGE
EASY AND SECURE ACCESS TO YOUR FILES
03
DATA
MANAGE, ACCESS, TRANSFER AND DELIVER DATA
04
SECURITY
MANAGE COMMUNITY, EXPOSE TRUSTED INFORMATION
05
OPERATIONS
CONFIGURATION, MONITORING AND TOOLS FOR YOUR INFRASTRUCTURE
EGI Service Portfolio

EGI-Engage



Design Phases

- Discovery
- Alpha
- Beta
- Production
- Retired

EGI access policies

http://www.egi.eu/services/access_policy/

- Policy-based
  - users are granted access based on policies defined by the EGI resource providers or by EGI.eu; such policies usually apply to resources being offered “free at point of use” to meet some national or EU level objective
- Wide access
  - users can freely access scientific data and digital services provided by EGI resource providers
- Market-driven
  - users can negotiate a fee to access services either directly with EGI resource providers or indirectly with EGI.eu
- EGI aligned with the charter for access to RIs

Users and disciplines

46,000 users

- Natural sciences, 66%
- Medical and Health sciences, 6.5%
- Engineering and Technology, 6.3%

SLAs

- MoBrain/INSTRUCT and Structural Biology
- BILS/Bioinformatics
- DRIHM/Hydro-meteorology

9 RIs using the EGI federation

7 RIs preparatory stage

Thank you for your attention.

Questions?

Acknowledgements
This presentation used icons made by Freepik from www.flaticon.com