Supporting European e-Infrastructure service providers to join the European Open Science Cloud

European Open Science Cloud
Governance & Funding Workshop

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Why Europe is not yet fully tapping into the potential of data?

- *Data coming from publicly funded research is not always **open** due to lack of clear incentives*
- *Lack of general framework for the **reuse** of data*
- *Lack of data **interoperability***
- ***Fragmentation** of data infrastructures (geographic, thematic, technological, governance)*
- *Offer does not match demand in world-class High Performance Computing (**HPC**) infrastructures*

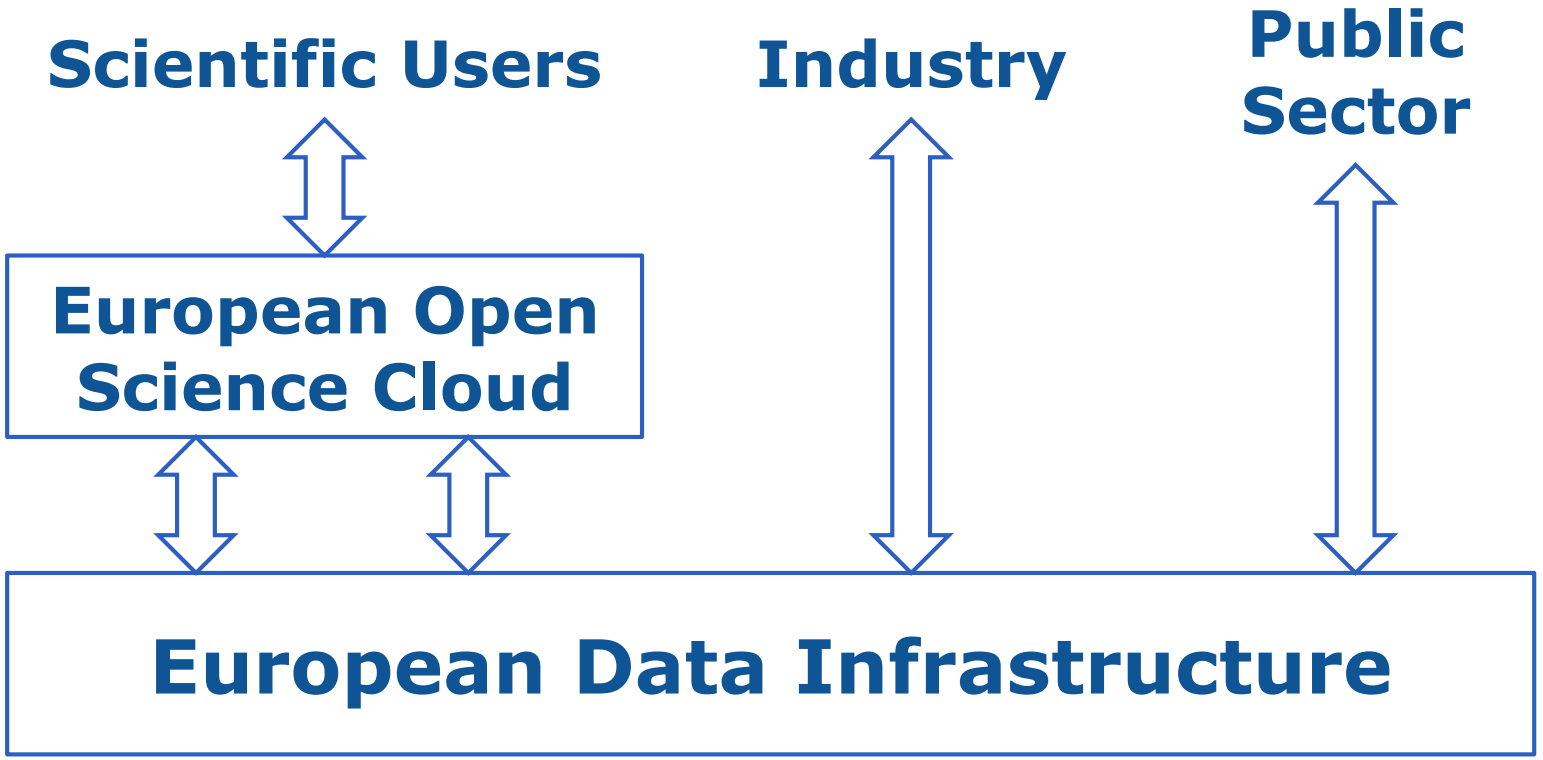
The solutions proposed in the European Cloud Initiative communication

- *European Open Science Cloud (EOSC)*
  - **Integration and consolidation of e-infrastructures**
  - **Federation of existing research infrastructures and scientific clouds**
  - **Development of cloud-based services for Open Science**
  - **Connection of ESFRIs to the EOSC**

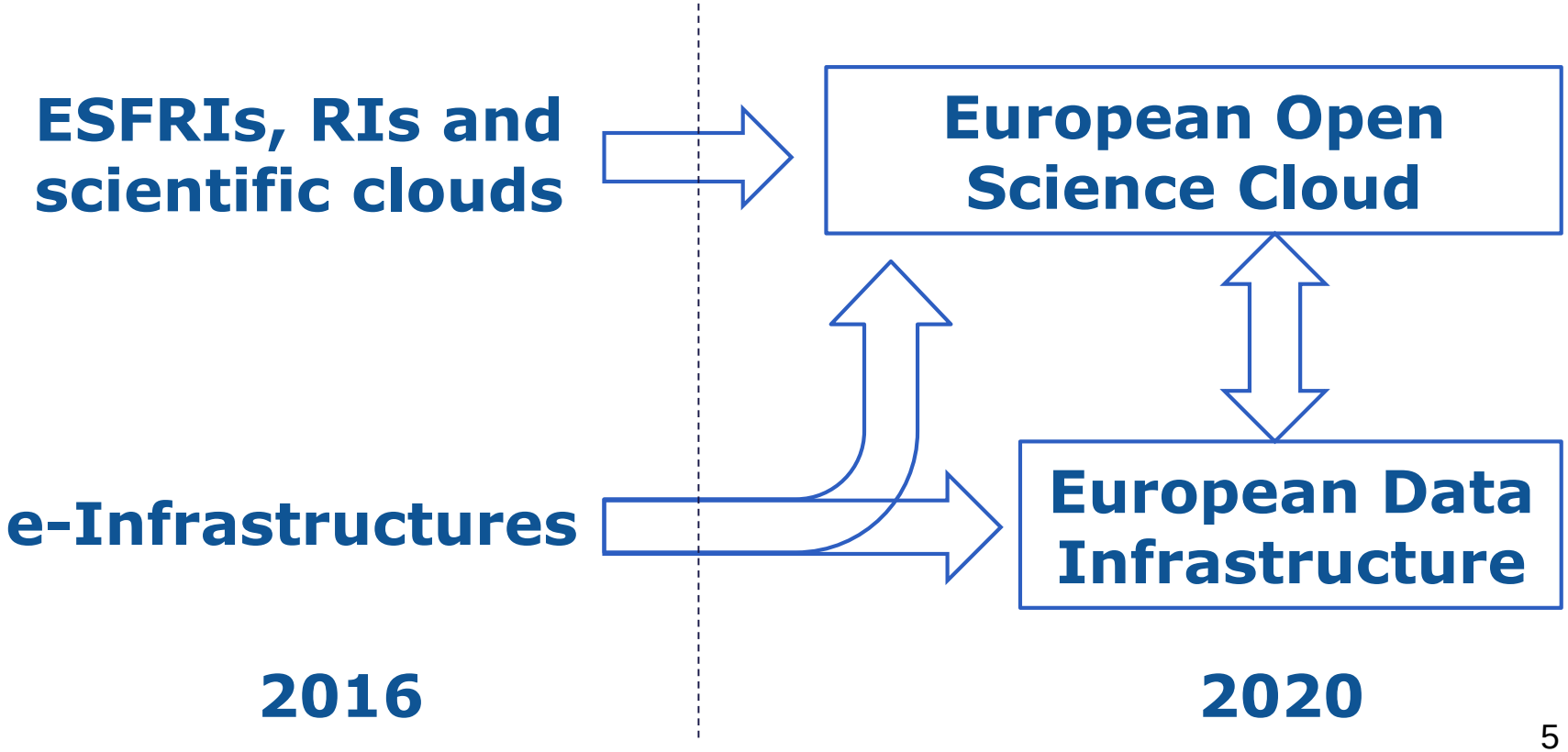
- *European Data Infrastructure*
  - **Development and deployment of large-scale European HPC, data and network infrastructure**

- *Widening access*
  - **SMEs, Industry at large, Government**

Static View on Year 2020 (over-simplification)



Dynamic View from 2016 to 2020 (over-simplification)



In short …

The European Open Science Cloud will encompass data, computing and networking **services** for the benefit of whole scientific community

… and Horizon 2020 is accelerating the implementation of the European Open Science Cloud

By supporting European e-Infrastructure platforms and projects to become European Open Science Cloud ***service*** *providers*

Contribution of e-Infrastructure (H2020 Excellence in Science)

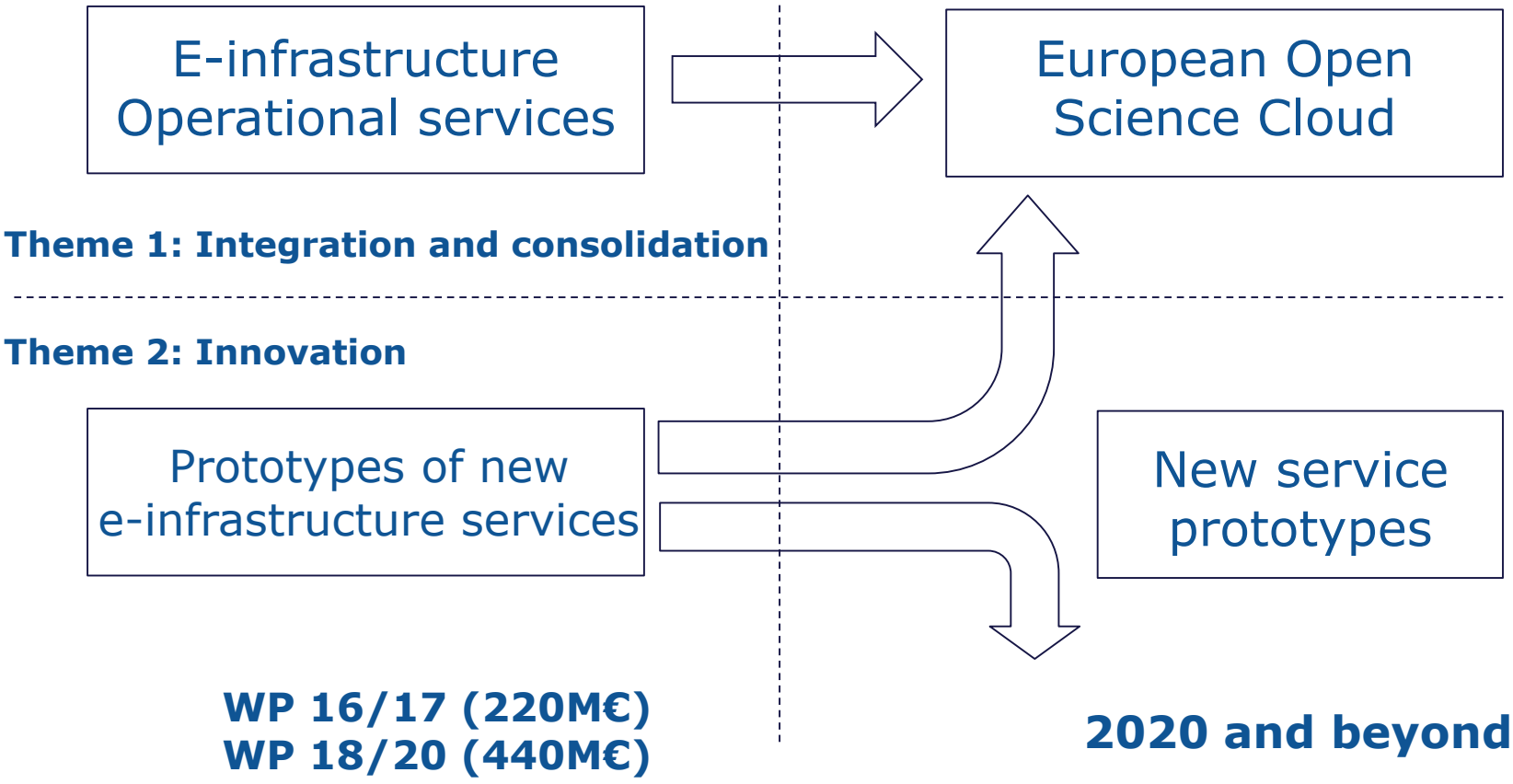
Theme 1:

Integration and consolidation of e-infrastructures services

Theme 2:

Prototyping of innovative e-infrastructure services

Interplay between Theme 1 and Theme 2: a dynamic view



e-infrastructures are the foundation of the European Open Science Cloud

https://ec.europa.eu/futurium/en/content/e-infrastructures-making-europe-best-place-research-and-innovation

European Commission

AARC: Authentication and Authorisation for Research and Collaboration

BlueBRIDGE: Building Research environments fostering Innovation, Decision making, Governance and Education to support blue growth

EarthServer2: Big Earth Data at your fingertips

EDISON: Building the data science profession

www.aarc-project.eu

www.bluebridge-vres.eu

www. earthserver.eu

www. edison-project.eu

EGI-Engage: Engaging the Research Community towards an Open Science Commons

go.egi.euengage

e-IRG: Paving the way towards a general purpose European e-Infrastructure

www. e-irg.eu

EUDAT: European Data Infrastructure

www.eudat.eu

EVER-EST: A Virtual Research Environment for the Earth Sciences

www.everest-eu.eu

GÉANT Project (GN4-1): Accelerating research, driving innovation and enriching education

INDIGO-DataCloud: INtegrating Distributed data Infrastructures for Global ExplOitation

LEARN: LEaders Activating Research Networks

MuG: Multi-scale complex Genomics

European Commission

OpenAIRE: Science set free

www.openaire.eu

OpenDreamKit: Open Digital Research Environment Toolkit for the Advancement of Mathematics

www.opendreamkit.org

OpenMinTed- Open Mining Infrastructure for Text and Data

www.openminted.eu

PhenoMeNal: Phenome and Metabolome aNalysis

www.phenomenal-h2020.eu

PRACE: Partnership for Advanced Computing in Europe

www.prace-ri.eu

RDA: Research Data Alliance

www.rd-alliance.org

READ: Recognition and Enrichment of Archival Documents

read.transkribus.eu

SESAME Net: Supercomputing Expertise for Small And Medium Enterprises

www.sesamenetwork.eu

THOR: Technical and Human infrastructure for Open Research

VI-SEEM: Virtual Research Environment (VRE) for regional Interdisciplinary communities in Southeast Europe and the Eastern Mediterranean

VRE4EIC: A Europe-wide Interoperable Virtual Research Environment to Empower Multidisciplinary Research Communities and Accelerate Innovation and Collaboration

West-Life: World-wide E-infrastructure for structural biology

Successful governance and funding mechanisms are already in place …

European Commission

Pan-European e-infrastructures with specific governance and funding models

GÉANT
Networks · Services · People

EGI-Engage: Engaging the Research Community towards an Open Science Commons

PRACE: Partnership for Advanced Computing in Europe

OpenAIRE

RDA: Research Data Alliance

EUDAT: European Data Infrastructure

European Commission

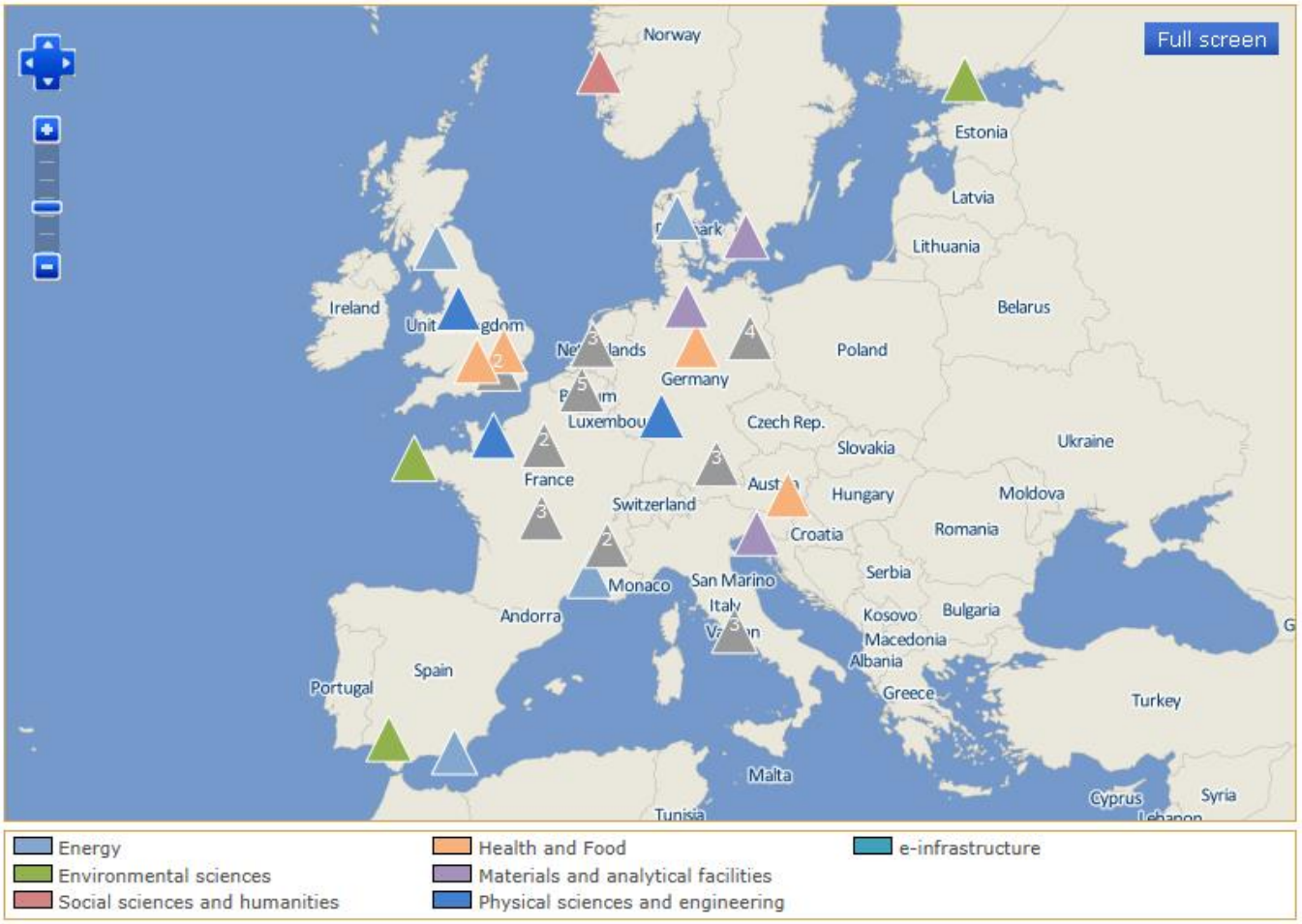
Europe's Leading Public-Private Partnership for Cloud

The Helix Nebula Initiative is a partnership between industry, space and science to establish a dynamic ecosystem, benefiting from open cloud services for the seamless integration of science into a business environment. Today, the partnership counts over 40 public and private partners.

HELIX NEBULA THESCIENCECLOUD

European Commission

Pan-European Research Infrastructures



And to complete the picture consider also international, national, regional, local, institutional, commercial and other research infrastructures and e-infrastructures

So, with all that in mind, how should the current governance and funding mechanisms be adapted to support the:

- Integration and consolidation of e-infrastructures
- Federation of existing research infrastructures and scientific clouds
- Development of cloud-based services for Open Science
- Connection of ESFRIs to the European Open Science Cloud

Digital Single Market Technologies and Public Service Modernisation Package

- *Digitising European Industry*
  - **SWD on Advancing the Internet of Things**
- *European Cloud Initiative*
  - **SWD on High-Performance Computing**
  - **SWD on Quantum Technologies**
- *Priorities for ICT Standardisation*
- *E-Government Action Plan*

Adopted on 19 April 2016

The European Cloud Initiative is about maximising the benefit of …

- *the use of **big data** in science, industry and public services,*
- ***access** for researchers, SMEs, industries, and public administrations in the EU **to world-class supercomputing**,*
- ***secure data storage and analysis**,*
- *and **reliable and high speed connectivity***

Concrete steps

- *EINFRA-22-2016 – User-driven e-infrastructure innovation (21 M€, closed on 30/3/2016)*
  - **Service development for**
    - Societal challenges
    - Innovative actors (SMEs)
    - Pan-European ID Federation
    - Support services for Open Science

- *EINFRASUPP-03-2016 – Support to policies and international cooperation for e-infrastructures (7,5 M€, closed on 30/3/2016)*
  - **SKA**
  - **Catalogue of services**
  - **Foresight roadmaps**

Concrete steps (continued)

- *INFRADEV-04-2016 – European Open Science Cloud (10 M€, closed 22 June 2016)*
  - **Research data generated by RI, such as ESFRI projects**
  - **Head and long-tail of science**
  - **Governance**

- *EINFRA-12-2017 – Data and distributed computing e-infrastructures for Open Science (€40 M€, closes 29/3/2017)*
  - **Integration and consolidation of e-infrastructure services**

- *EINFRA-21-2017 – Platform-driven e-infrastructure innovation (€20 M€, closes 29/3/2017)*
  - **Service development**

Concrete steps (continued)

- *INFRASUPP-02-2017 – Policy and international cooperation measures for research infrastructures*
  - **Support to the Research Data Alliance (RDA) until at least 2020**

ICT Proposers' Days – Bratislava 26-27 September 2016

- *2 hours session on e-Infra calls*
  - **Brief presentation of call topics**
  - **Presentation by potential participants**

- *Opportunity for e-Infras, ESFRIs and RIs to meet and discuss potential co-design opportunities in the context of EINFRA-21-2017 as well as integration and consolidation opportunities in the context of EINFRA-12-2017*
- *Questions? ec-eosc@ec.europa.eu*

The Digital4Science platform

www.ec.europa.eu/d4science

#D4Science

@ICTscienceEU
@FET_EU
@FETflagships
@eInfraEU