# Introduction to the European Open Science Cloud

Juan Bicarregui
Co-ordinator EOSCpilot

EOSCpilot
The European Open Science Cloud for Research Pilot Project
www.eoscpilot.eu

#EOSC
#EOSCForum

**@eoscpilot**

# Introduction

- Motivation for EOSC
  - A Decade of Policy
  - The Innovation Lifecycle
  - How to get there from here
- High level overview of EOSCpilot
  - Project Aims and Objectives
  - Project Challenges
  - Workpackages
  - How to get there from here


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# A Decade of Policy 2006-2016

**2006, OECD**
Recommendation on Access to Research *Data* from *Public* Funding.
**2007, EC**
Recommendation on access to and preservation of scientific information
**2007, EC,**
Communication and Conclusions on scientific information in the digital age
**2010, HLEG on Scientific Data**
Riding the wave: How Europe can gain from the rising tide of scientific data
**2011, G8+5**
Global Research Infrastructure Group on Data
**2012, EC**
Recommendation on access to and preservation of scientific information
**2013, G8 Ministerial Communiqué**
*"… [publically funded] scientific research data should be open…"*
**2015, G7 Ministerial Communiqué, October**
*"…accomplish an effective open-data science environment..."*
**2016, EC**
Communication on European Cloud Initiatives


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# G7 Ministerial Communiqué
## *Berlin Oct 2015*

- Neglected tropical diseases
- Future of the Seas and Oceans
- **Global Research Infrastructures (GRIs)**
  - "…[4 items about Global (physical) Research Infrastructures]…
  - *Further progress on sharing and managing scientific data and information should be achieved, especially by **continuing engagement with** community based activities such as the **Research Data Alliance** RDA.*
  - *We encourage the GSO to continue their work on convergence and **alignment of inter-operable data management** that could accomplish an **effective open-data science environmen**t at the G7 level and beyond."*
- Clean Energy


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# ECI Communication (2016)

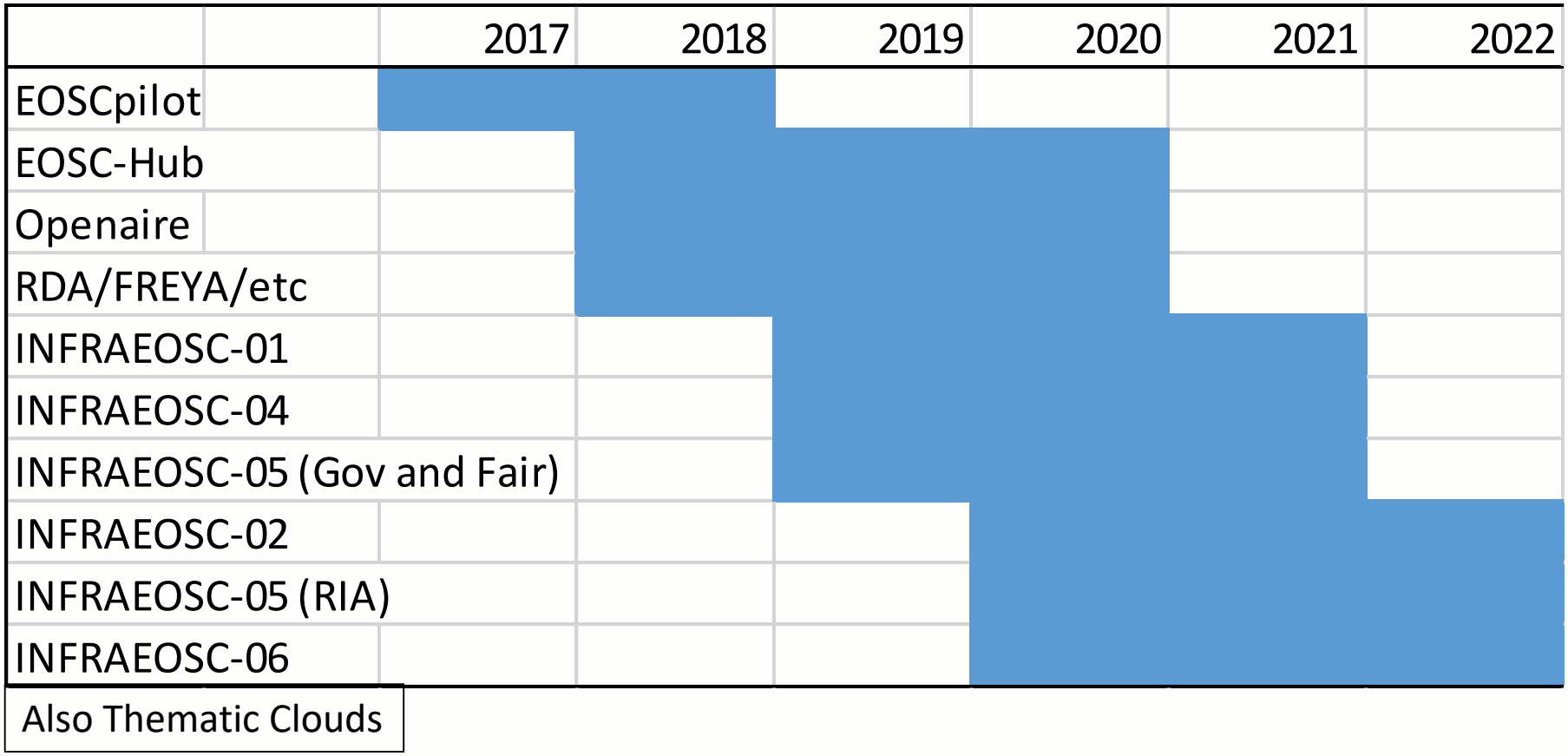
*To develop EOSC it will be necessary to:*

- Make all scientific data produced by the Horizon 2020 programme open by default.
- Raise awareness and **change incentive structures** for academics industry and public services to share their data.
- Develop **specification for interoperability** and data sharing across disciplines and infrastructures
- Create a fit-for-purpose **pan-European governance structure** to federate scientific data infrastructures and overcome fragmentation.
- **Develop cloud based se**rvices for Open science **supported by** the necessary **data infrastructure**
- **Enlarge the scientific user base** to researchers and innovators from all disciplines.



The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

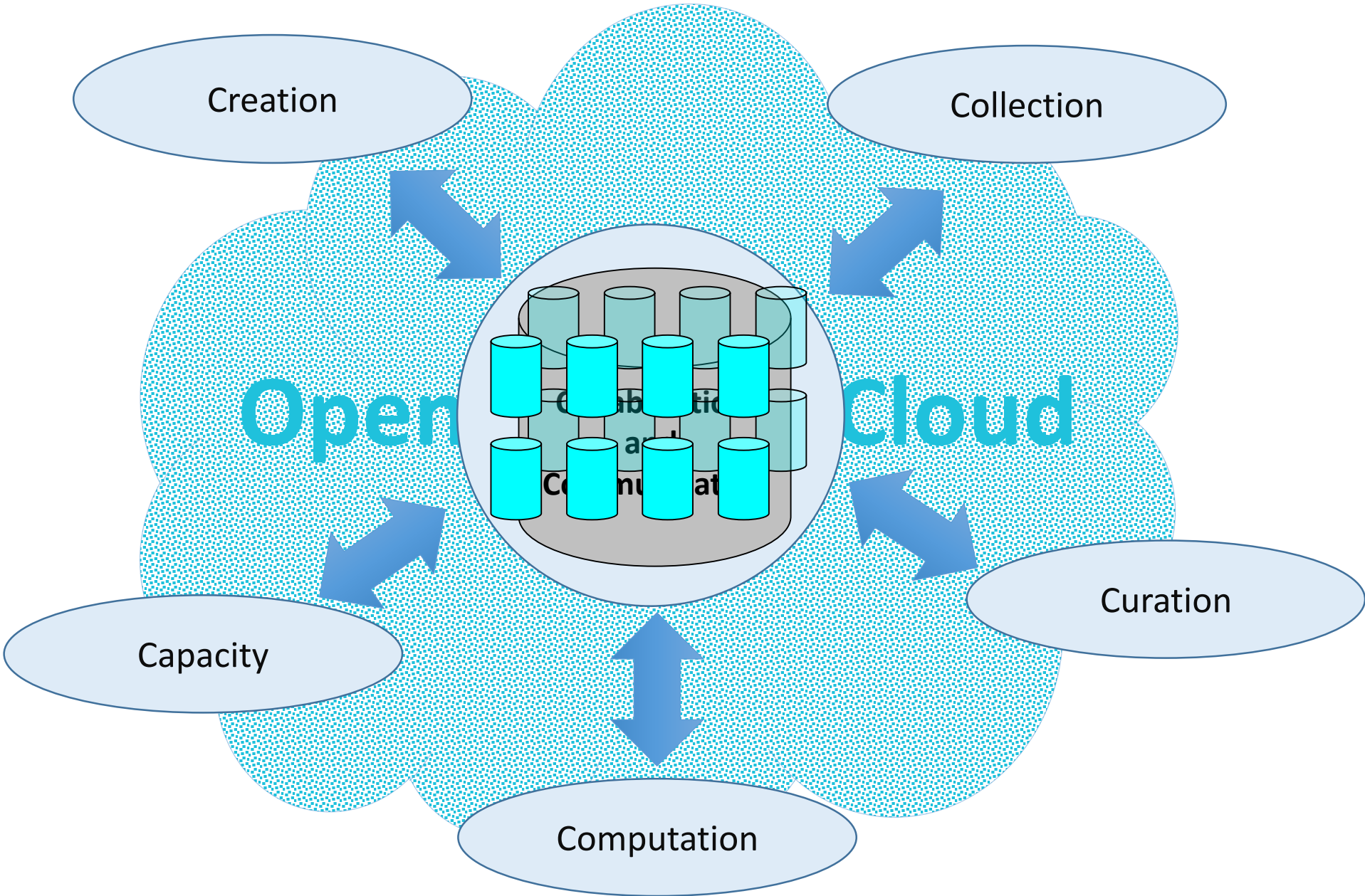
# The INFRAEOSC Programme



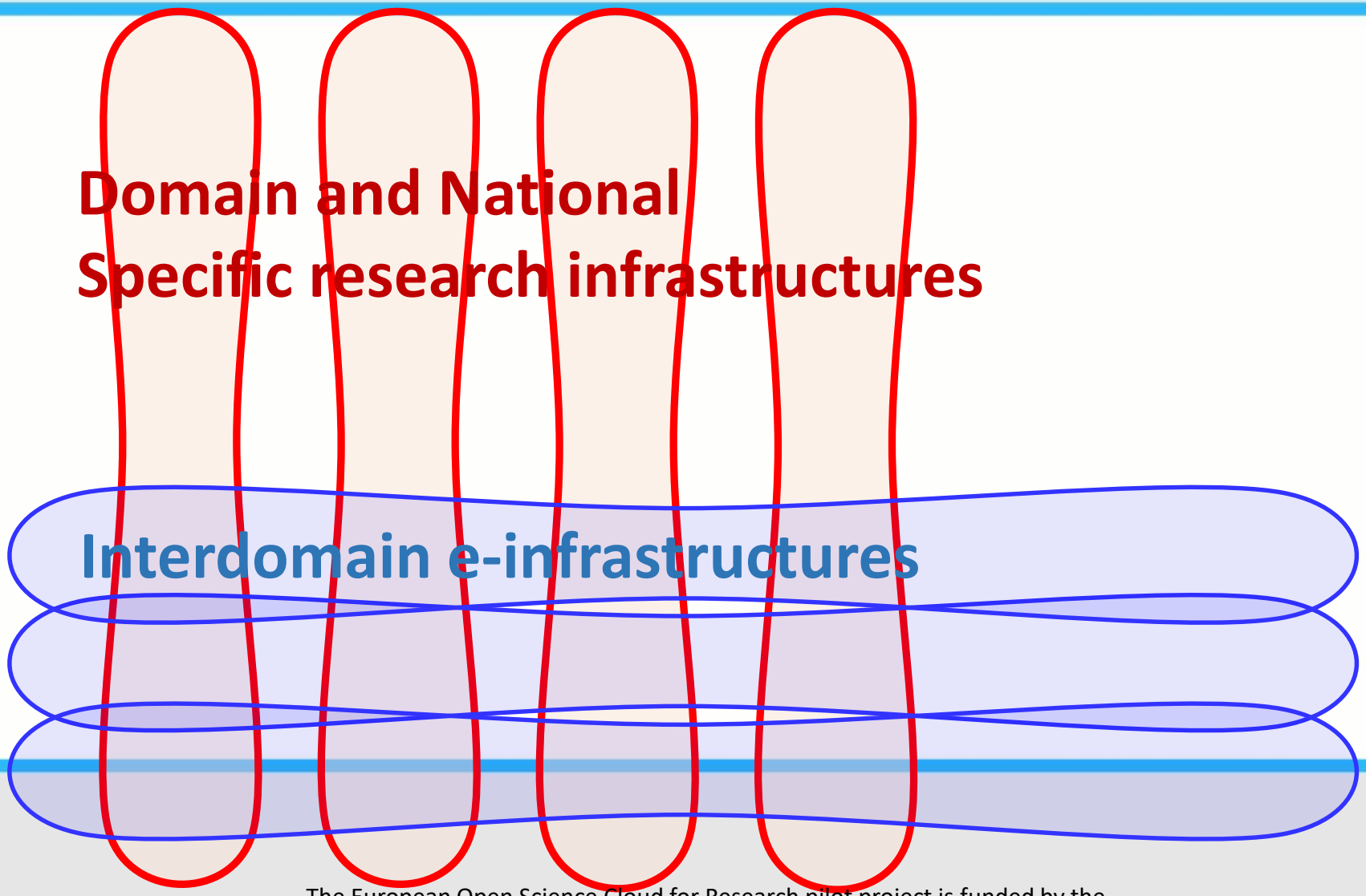



The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# *The Innovation Lifecycle*



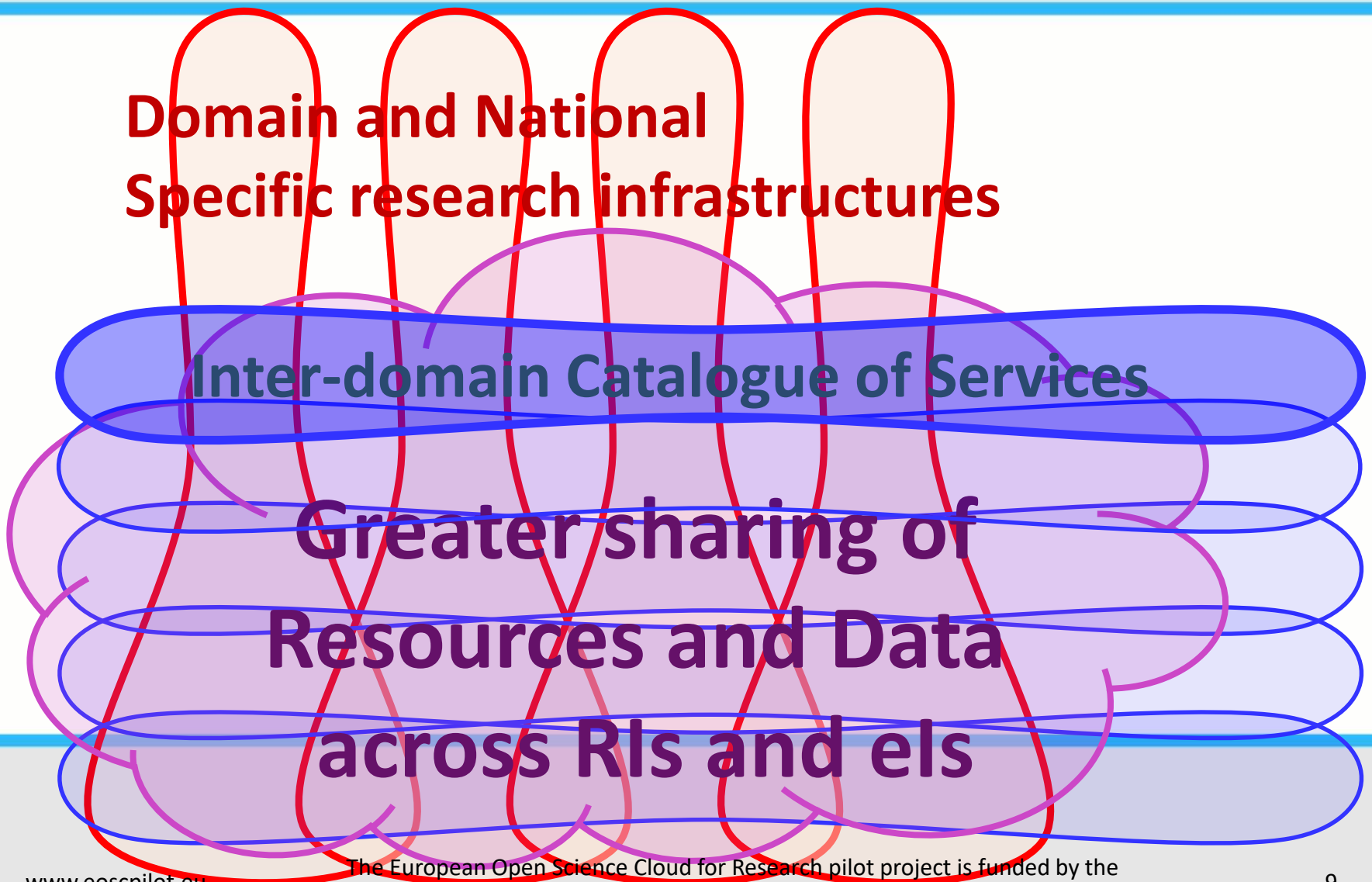
# Existing Horizontal and Vertical infrastructures






The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# *Integrated Horizontal and Vertical provision*





The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Introduction

- Motivation for EOSC
  - A Decade of Policy
  - The Innovation Lifecycle
  - How to get there from here
- High level overview of EOSCpilot
  - Project Aims and Objectives
  - Project Challenges
  - Work breakdown: Workpackages etc.
  - How to get there from here


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# *EOSCpilot*: High Level Aims

The *EOSCpilot* project will support the first phase of development of EOSC:

- **Engage with a broad range of stakeholders**, crossing borders and communities, to build the trust and skills required for adoption of an open approach to scientific research
- **Develop a number of demonstrators** functioning as high-profile pilots that integrate services and infrastructures to show interoperability and its benefits in a number of scientific domains
- **Establish the governance framework** for the EOSC and contribute to the development of European open science policy and best practice


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Aims

Objectives

- It will establish the governance framework for the EOSC and contribute to the development of European open science policy and best practice;
- It will develop a number of pilots that integrate services and infrastructures to demonstrate interoperability in a number of scientific domains; and
- It will engage with a broad range of stakeholders, crossing borders and communities, to build the trust and skills required for adoption of an open approach to scientific research

Impact

- Reduce fragmentation between data infrastructures by working across scientific and economic domains, countries and governance models; and
- Improve interoperability between data infrastructures by demonstrating how data and resources can be shared even when they are large and complex and in varied formats


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# EOSCpilot Challenges

Three types of challenges:

Scientific Challenges are really *Opportunities*

- **Scientific Challenges:** deploying the EOSC to deliver Open Science

Technical Challenges are *Barriers to overcome*

- **Technical Challenges:** developing technical solutions that meet the scientific needs

Cultural Challenges are also *Barriers*

- **Cultural Challenges:** adopting new, more open ways of working



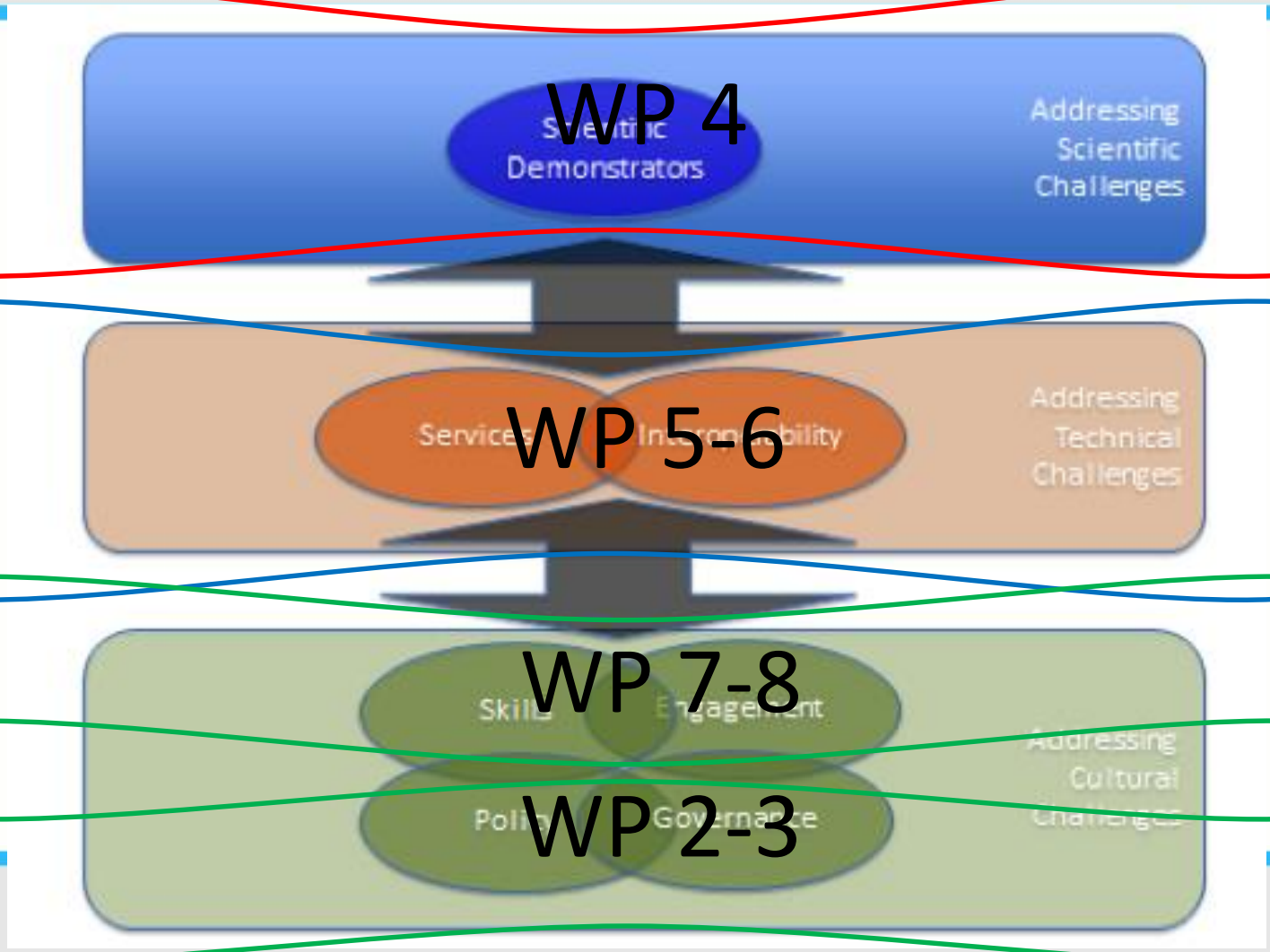
The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Motivation and HL introduction

- **Scientific Challenges – Needs and provision**
  - *What do research communities need from an "Open Data Science Environment"?*
- **Technical Challenges - Services and integration**
  - *How can EOSC deliver integrated services that are relevant to community needs?*
- **Cultural Challenges 1 – Skills and engagement**
  - *What changes are needed in capability and practices?*
- **Cultural Challenges 2 - Governance and policy**
  - *How should provision be overseen to maximize benefit?*


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Workpackage Challenges






The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Workpackage Level Objectives

**Science Demonstrators Objective**

- To develop a number of Science Demonstrators … to drive the development of the EOSC.

WP 4

**Services Objective**

- To create a number of EOSC pilot services that federate data, infrastructure and services …

**Interoperability Objective**

- To define and implement specifications, interfaces, standards and processes that …underpin interoperability and sharing …

WP 5-6

**Governance Objective**

- To design and trial a stakeholder-driven governance framework …

**Policy Objective.**

- To establish the policy environment required for the effective operation…

WP 2-3

**Skills Objective.**

- To develop common standards and assessment frameworks to ensure …

**Community Engagement Objective**.

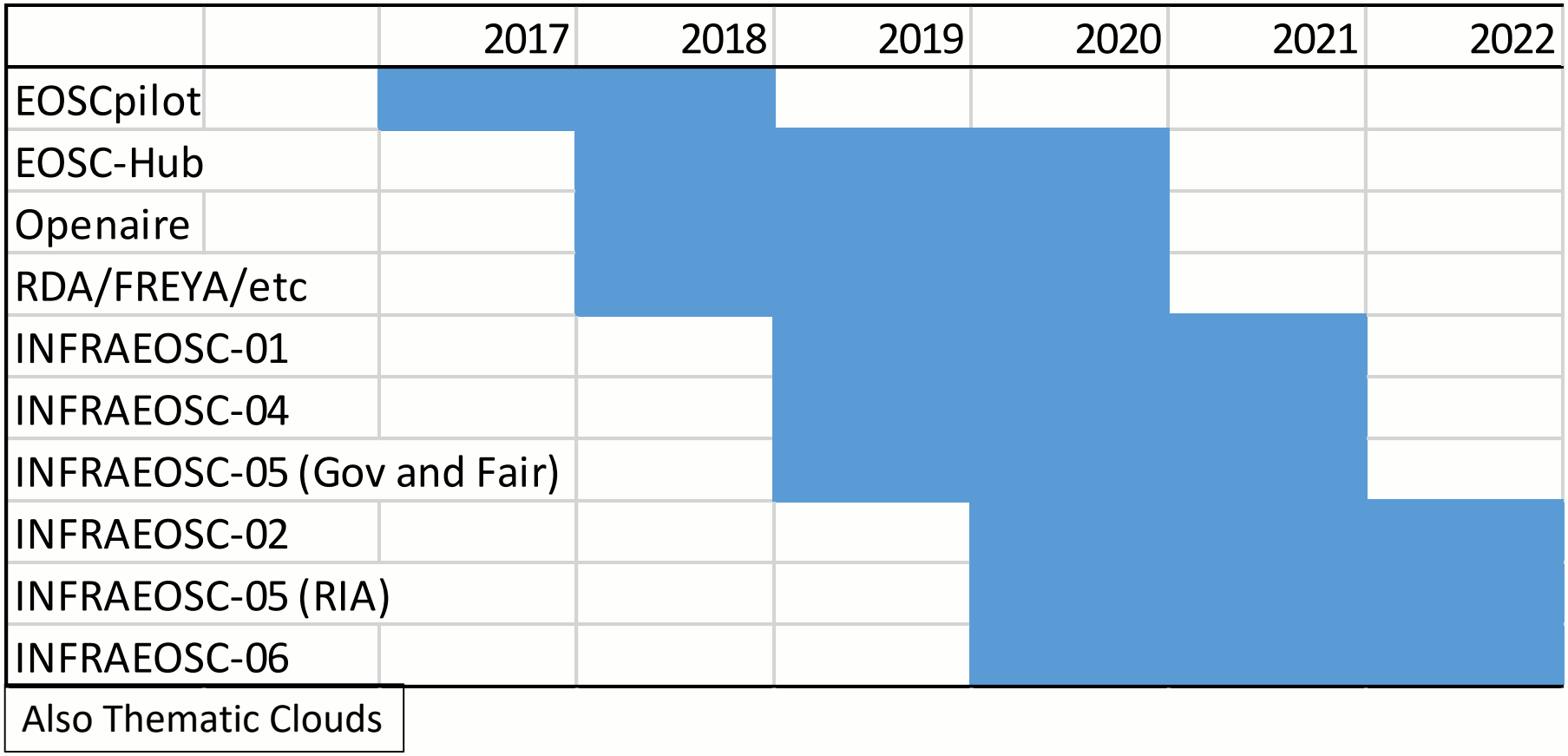
- To identify and bring together … the major groups of stakeholders …

WP 7-8



The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# The INFRAEOSC Programme






The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Introduction

- Motivation for EOSC
  - A Decade of Policy
  - The Innovation Lifecycle
  - How to get there from here
- High level overview of EOSCpilot
  - Project Aims and Objectives
  - Project Challenges
  - Workpackages
  - How to get there from here


The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563

# Questions



The European Open Science Cloud for Research pilot project is funded by the European Commission, DG Research & Innovation under contract no. 739563