

Progress towards the EOSC

Rapid overview of 6
Current Projects:

EOSCpilot	Juan Bicarregui
eInfraCentral	Alasdair Reid
OpenAire	Natalia Manola
EOSC Hub	Tiziana Ferrari
FREYA	Simon Lambert
RDA Europe	Sara Garavelli

The *EOSC*pilot 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
- **Propose a governance framework** for the EOSC and contribute to the development of European open science policy and best practice

January 2017-December 2018



- 👤 33 Beneficiaries and 15 Third Parties + 13 new partners for Demonstrators 6-15.
- 👤 1022 Person Months, 2 Years, >100 people
- 👤 50 Deliverables (Governance, Policy, Demonstrators, Services, Interoperability, Skills, Communications)
- 👤 4 “plenary” meetings: kickoff (120p), Stakeholders(300p), All Hands(100p), Stakeholders 2 (Nov 2018)

Identification 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

Made first steps to removing barriers:
[Communication 2016]

- 🔗 **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 e-Infrastructure Service Gateway (eInfra Central)



- eInfraCentral helps **users** find, compare, select and ultimately **access** e-infrastructure services
- Since January 2017, the project has developed and piloted a **common service description template** in partnership with five main einfrastructures **service providers**
- **A beta version of the eInfraCentral catalogue** was launched end 2017 with 70 services => core element of future EOSC Portal
- **Ongoing work** on expanding service coverage, improving UX, developing APIs (continuous up-to-dating of information) and dashboards for service providers and funders (KPIs).
- **Public launch** scheduled April 2019



WHO ARE eInfraCentral?



9 partners focused on supporting **service providers** to improve **quality of their offering** and increase **take-up by users** !



More information: <http://www.einfracentral.eu/#newsletter>



Your Gateway for European E-Infrastructures

SEARCH OUR SERVICE CATALOGUE...

SEARCH

Explore services



AUTHENTICATION AND
AUTHORIZATION
INFRASTRUCTURE



COMPUTE



CONNECTIVITY



CONSULTING



OPERATIONS



CONTENT DELIVERY



DATA DISCOVERY



DATA MOVEMENT



DATA REGISTRATION



DATA STORAGE

OpenAIRE in a nutshell

1

Implement and **align Open Science policies** across Europe and the world

2

Deploy **services** to embed Open Science into researcher workflows

3

Train for Open Science, for FAIR Science

4

Develop **global open standards** for linking all research

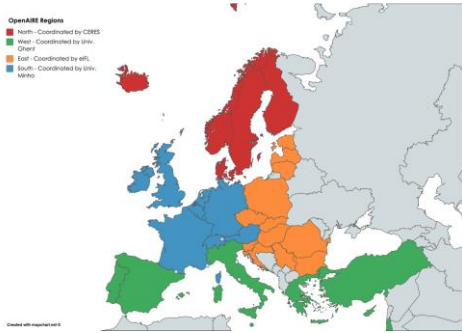
5

Open research to foster **innovation** and engage **society**

Our consortium

34 National Open Access Desks

Organizations experts in OA



Data Communities

EPOS-IT

Elixir-GR

DARIAH-DE

+ 5 more targeted research communities

Citizen Science

EllinoGermaniki (GR)

Open Innovation

Athena RC (GR)

e-Infrastructure / e-Science Service Providers

CNR-ISTI (IT)

Athena RC (GR)

ICM (PL)

CERN (CH)

Univ. of Bielefeld (DE)

Univ. of Bonn (DE)

Legal Experts

Univ. of Glasgow / Licenses - UK

Athena RC / GRPR – GR

Open Science Experts

Univ. of Gottingen (DE)

Univ. of Minho (PT)

Univ. of Gent (BE)

Unit (NO)

eIFL (NL)

DANS (NL)

DCC (UK)



OpenAIRE: A pillar in EOSC

Governance

National OS coordination

Embed OS at national level

17 NOADs lead and **14 participate** in national OS task forces

Data

OS Helpdesk

Support-Training-Consulting

2016–today

36 workshops in 20 countries with 3,400 participants
81 webinars for 4,500 trainees

Rules Architecture

Interoperability

Make **already running, funded localized services** the cornerstones of EOSC architecture

1,150 content providers via the OpenAIRE guidelines

Services Data

RDM

Zenodo - a universal repository

Amnesia - data anonymization

DMP Service - integral linking to EU & national infrastructures

Data Services Access & Interfaces

Connectivity

ScholExplorer

31 mi literature-data links
500 mi requests

Research Community Dashboard

Connecting services & research outcomes for communities

Data Rules Access & Interfaces

Social engagement

Citizen Science: OS Journal for Schools + seismological data from schools to infras

Open Innovation: Innovative services on open data





EOSC-hub

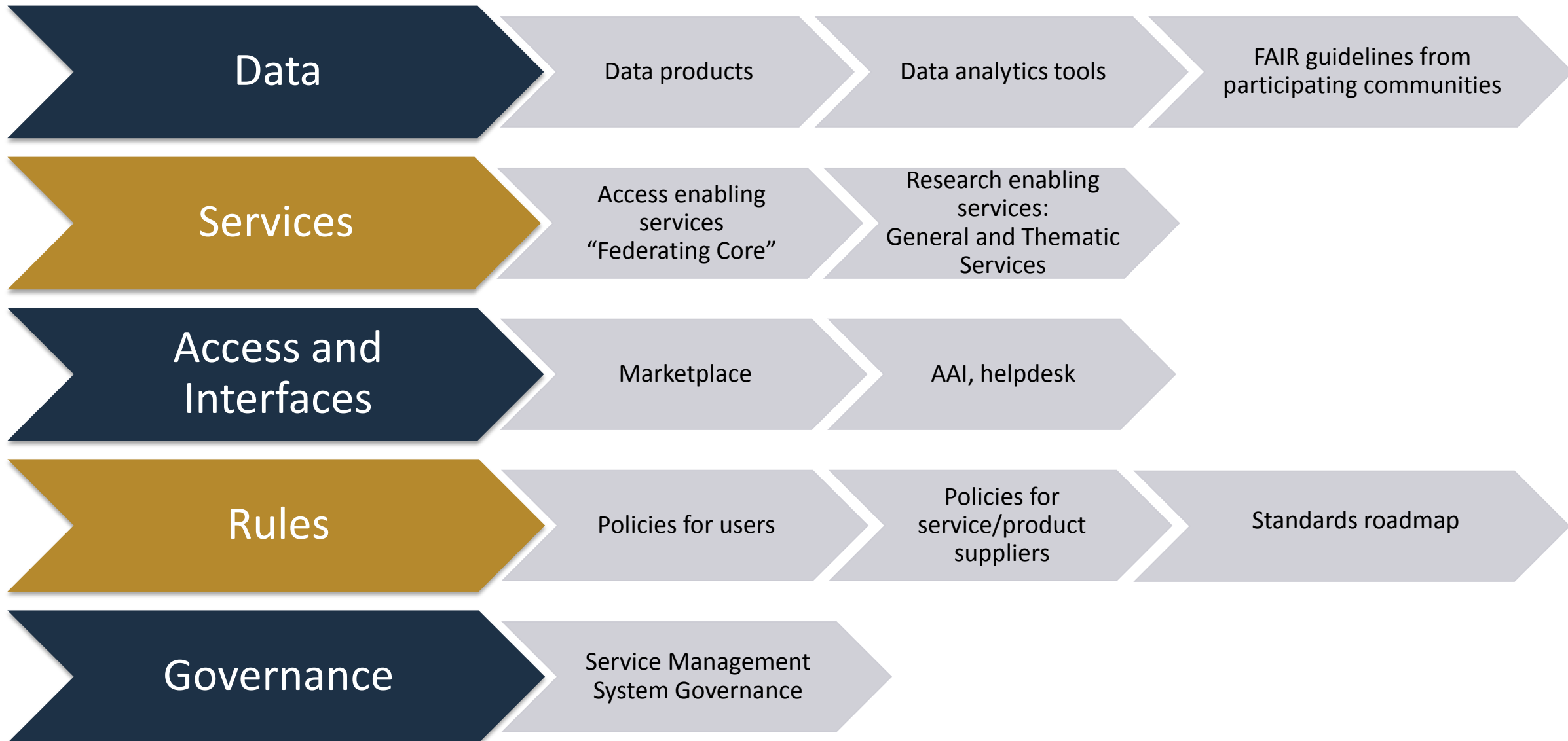
20 digital research infrastructures,
EGI, EUDAT CDI and INDIGO-DataCloud
jointly offering services, software and data
for advanced, data-driven research & innovation

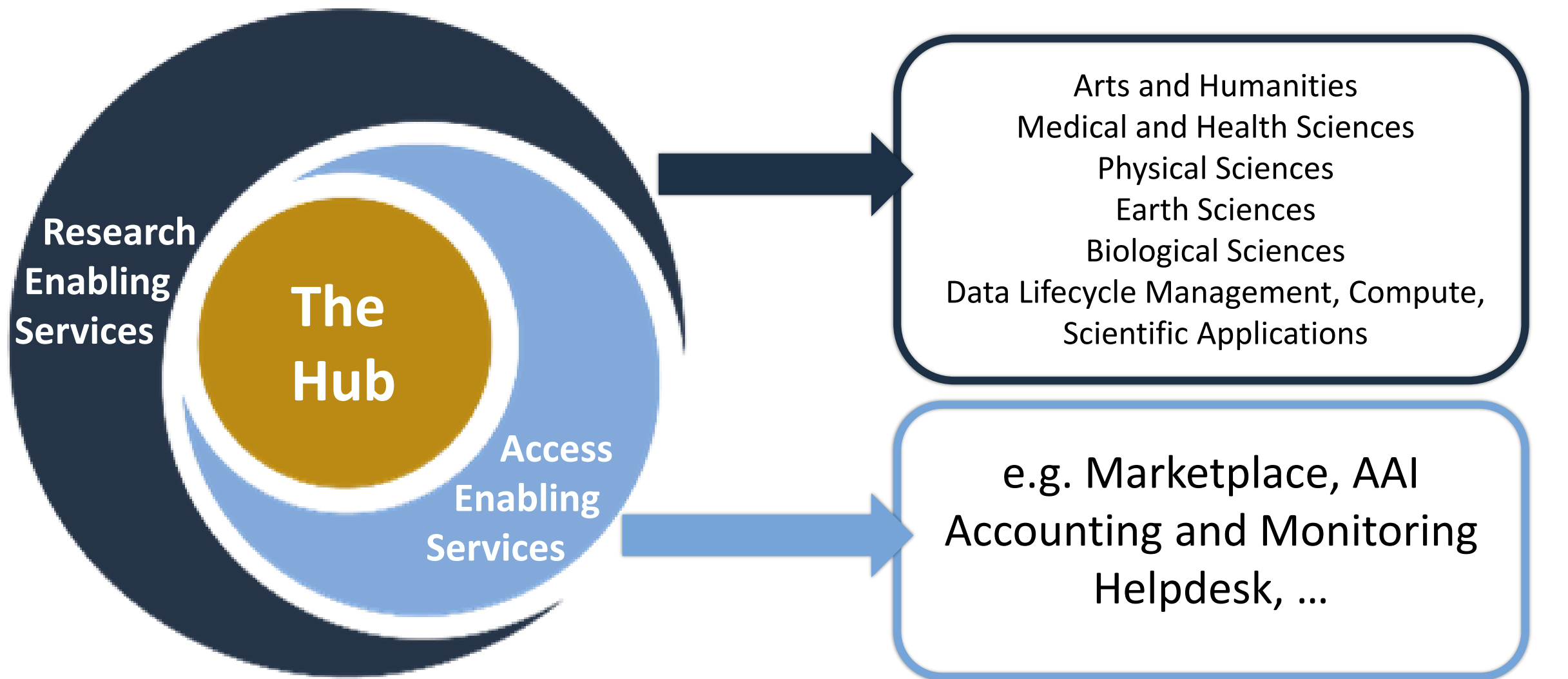
The Hub:
a European contact point
to discover, access, use and reuse
resources for advanced data-driven research
→ contact@mailman.eosc-hub.eu

100
partners

36
months

33
million
Euro





<https://www.eosc-hub.eu/catalogue/>



FREYA

Objectives:

- ❖ *Iteratively extend a robust environment for Persistent Identifiers (PIDs) into a core component of European and global research e-infrastructures.*
- ❖ *Cover a wide range of resources and enhance the links between them in the “PID Graph”*
 - ❖ *Validate and demonstrate in pilot applications in diverse domains*
- ❖ *Establish an open, sustainable, and trusted framework for collaborative self-governance of PIDs and services built on them*

Duration: 36 months from 1 December 2018

Participants



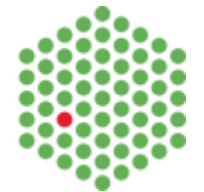
Coordinator



PANGAEA



EMBL-EBI





FREYA: How it fits into EOSC implementation plan

- PIDs as essential building block of the EOSC
 - Uniform exchange layer between data and services
 - A trusted, mature and sustainable layer of core PID-related services that enables everyone—from the research community to innovators and industry to laymen—to access and benefit from research outputs
- Integration into community practices
- PID Graph – PID Forum – PID Commons
- International dimension including strong engagement with RDA
- Some key milestones in each year:
 - Year 1: Initial PID Forum established
 - Year 2: Mature service demonstrators; PID Commons functional
 - Year 3: PID service registry; new PID types

THE RESEARCH DATA ALLIANCE

www.rd-alliance.org

*building the social and technical bridges
that enable open sharing of data*

18 FLAGSHIP OUTPUTS

of which 4 ICT
Technical
Specifications

75 ADOPTION CASES

across multiple
disciplines,
organisations &
countries

91 GROUPS WORKING ON GLOBAL DATA INTEROPERABILITY CHALLENGES

*of which 33 WORKING GROUPS
& 58 INTEREST GROUPS*

6,952 INDIVIDUAL MEMBERS FROM 137 COUNTRIES

67% Academia & Research
15% Public Administration
11% Enterprise & Industry

43 ORGANISATIONAL MEMBERS & 8 AFFILIATE MEMBERS



RESEARCH DATA ALLIANCE

*Sara Garavelli, Trust-IT Services, RDA Europe 4
Coordinator*

Vision

Researcher
across tech
to address

Mission

RDA builds
enable open

RDA Europe 4.0

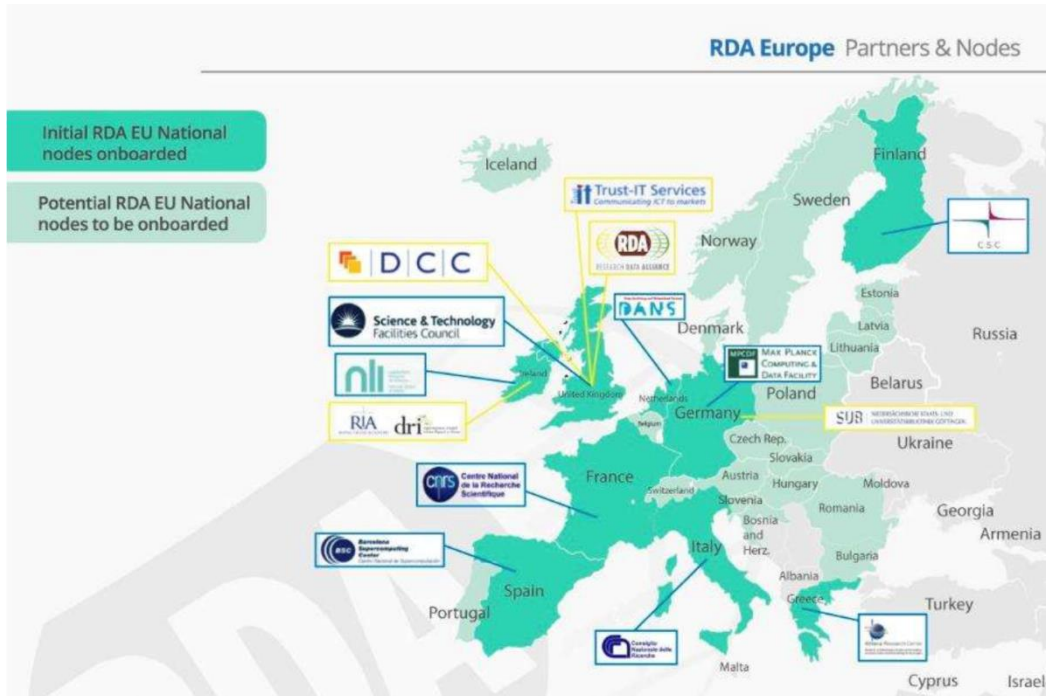
Objectives

- Becoming a core element in the EU Open Science Strategy;
- Providing the skilled, voluntary resources from the EU investment to address Digital Single Market (DSM) issues;
- Facilitating cross-disciplinary & multi-disciplinary research;
- Building, strengthening, and consolidating an RDA global community;
- Contributing to global interoperable data infrastructure;
- Democratising access to funding opportunities in data infrastructures & interoperability through a cascading grant mechanism
- Driving the process of RDA ICT Technical Specifications in Europe;
- Developing a sustainable path for the RDA in Europe;

Duration: 27 months from 1 March 2018

Participants

- RDA Europe 4.0



- RDA Europe 3,2,1

RDA in Europe is much more

- Professional groups
 - WG-s IG-s chairs and members from Europe
- RDA Global Foundation European leaders
 - Council members
 - TAB Co chair and members
 - OAB members
 - Secretary general
- Over 6,900 RDA individual members

RDA members also embedded in a set of initiatives

- All EOSC related EU projects
 - EOSC Pilot, EOSC-hub, OpenAIRE, FREYA, eIC, GO FAIR, etc.
 - E-Infra and Research Infra related projects
- EC policy groups
 - Open Science HLGR
 - Open Science Policy Platform (OSPP)
 - FAIR expert group
 - ALLEA
- Different Stakeholder associations

Progress towards the EOSC on Data

- With its over 6900 members (50% from Europe) and 25+ domain research groups, RDA is the **strategic partner to represent the data community in EOSC** and to achieve **progress in thematic areas** that need to have a global approach
- RDA is the context where existing EOSC initiatives (EOSC-hub, OpenAIRE, EOSCpilot, FREYA, CODATA, GO FAIR, ITU, etc.) can **collaborate on best practices** among themselves and international partners, and **EOSC approaches can be promoted**
- The vision of the future **EOSC WGs has already a concrete implementation in the RDA WGs & IGs** which can be adopted by EOSC to address specific data challenges
- Via the consolidated process of the RDA ICT Specs (8 ready for publications) RDA can facilitate **bringing the EOSC ICT recommendations** to the market
- The technical work ongoing (standards, repositories, components, etc.) in RDA with its agile bottom-up approach can build the foundation for the definition of the **EOSC reference architecture**
- The continuous development of standards/best practices will provide to EOSC **actionable ways of turning FAIR principles into practice**
- The RDA national nodes (9 so far) are **pioneering the Member States engagement** to contribute to the RDA and overall EOSC sustainability

EOSC Implementation Roadmap - the 6 lines of action

Architecture	Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.
Data	FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.
Services	Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.
Access & Interface	Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.
Rules	Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.
Governance	Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.



Governance



INFRAEOSC-05a

INFRAEOSC-05c

Support to the EOSC Governance

INFRAEOSC-05b

Implementation



INFRAEOSC-01

Access to commercial services

INFRAEOSC-03

Integration and Consolidation...



INFRAEOSC-04

Connecting ESFRI infrastructures through Cluster projects

Community



INFRAEOSC-02

Prototyping new innovative services

INFRAEOSC-06

Enhancing the EOSC portal and connecting thematic clouds