

# EOSC for Data & Service Providers

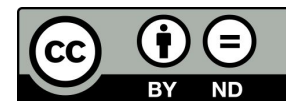
26 April 2022



with



The EOSC Future, C-SCALE, DICE, EGI-ACE, OpenAIRE-Nexus, Reliance and ARCHIVER projects are funded by the European Union Horizon Programme calls INFRAEOSC-03-2020 and INFRAEOSC-07-2020 and H2020-ICT-2018-20





# Outline

- **The EOSC Platform in a nutshell**  
John Shepherdson, CESSDA
- **EOSC providers: who they are and what they can provide**  
Diego Scardaci, EGI Foundation
- **Why become a provider?**  
Paolo Manghi, OpenAIRE
- **Q&As**

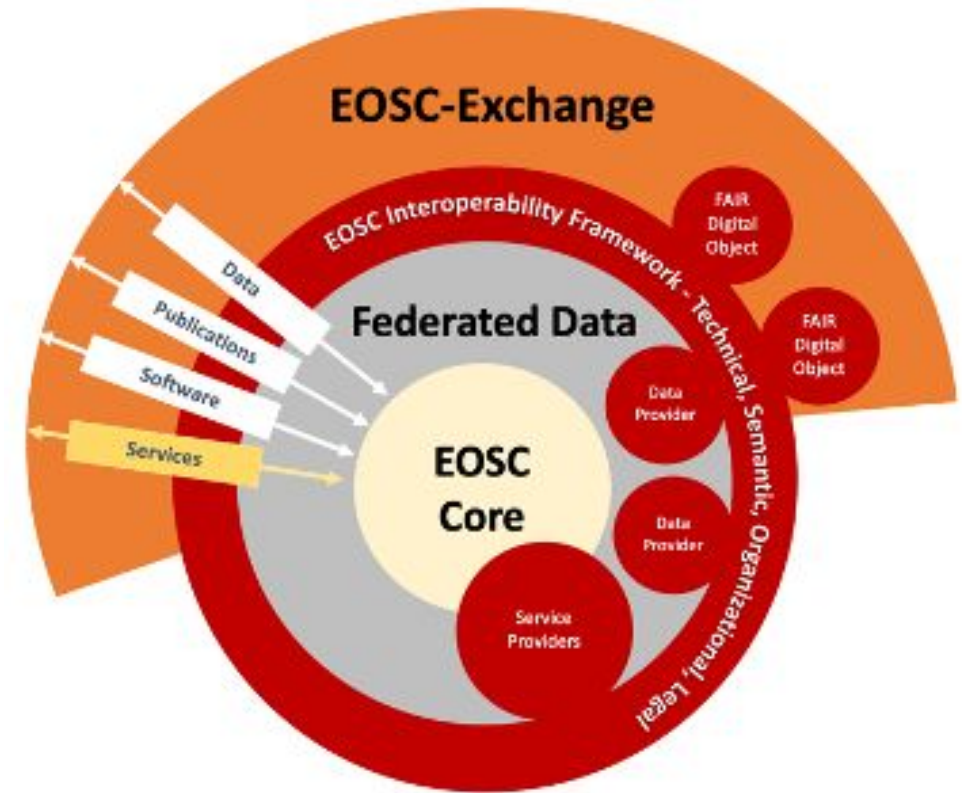
# EOSC Platform in a nutshell

John Shepherdson, CESSDA



# The EOSC Vision

- A web of FAIR data and services
- Federation of eInfra and Research Infrastructures (RIs)
- Environment in which data can be brought together with services
  - perform analyses
  - address societal challenges

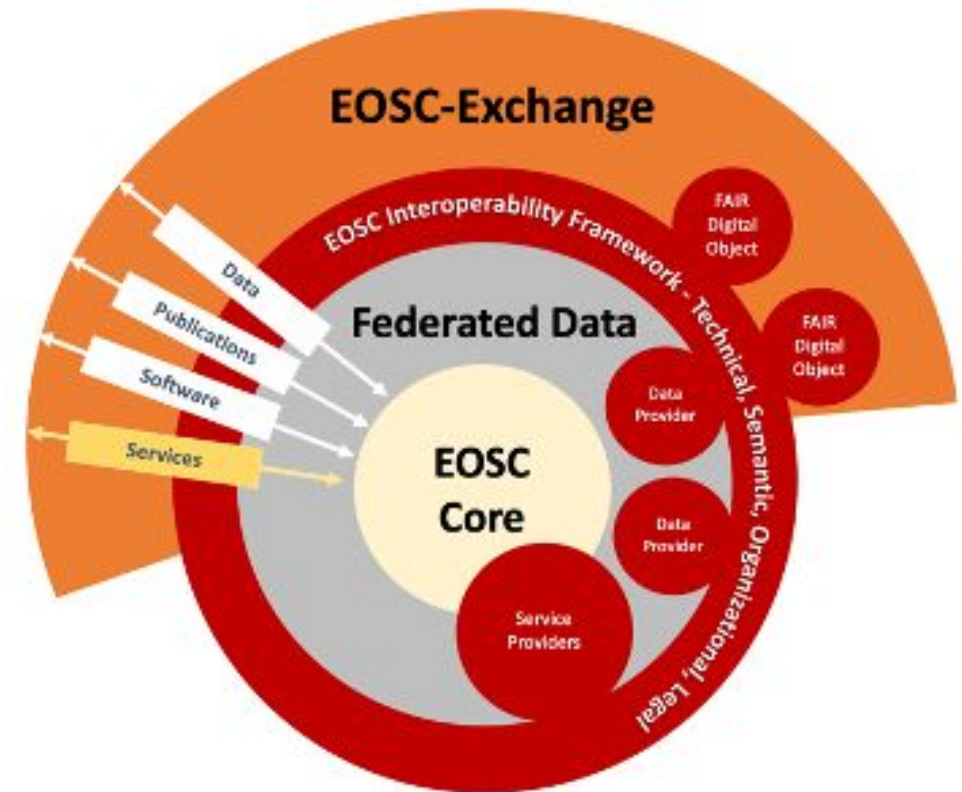




# The EOSC Future Mission

To deliver an operational **EOSC Platform**

- Minimum Viable EOSC
  - Core Services
  - EOSC Portal & Market Place
  - Interoperability Framework
  - Support Service





# EOSC Platform in a nutshell - EOSC Core

- The 'bread and butter' elements of the EOSC Platform
  - Acting as enablers, supporting routine activities
- Used by many other elements
  - Building blocks for more advanced EOSC services
- Often behind the scenes
  - Users don't interact directly with most of them

Service monitoring, alerting  
and reporting

Accounting for use of shared  
computing facilities

Controlling access to resources

Support and help for Users

Managing orders for resources



# EOSC Platform in a nutshell - EOSC Portal

- The public face of the EOSC Platform
- For resource Providers
  - e-Infrastructures, private sector, tool providers, research infrastructures
- For resource Consumers
  - researchers, research communities/projects, public sector, citizen scientists...
- For resource Facilitators
  - Funders, policy makers, institutions, research administrators

Providers can:

Add resources

Modify resource  
descriptions

See usage and rating  
information

Consumers can:

Find, order and use  
resources

Personalise their  
experience, get  
recommendations

Facilitators can:

Use Open Science monitor  
to see FAIRness and Open  
Science indicators



# EOSC Platform in a nutshell - Interoperability and Support

- EOSC Interoperability Framework
  - overarching standards and guidelines for interoperability and composability of resources in EOSC-Core and EOSC Portal & Marketplace
- EOSC Support Services
  - human-centric activities (including monitoring, training, and engagement)
  - support the operation of the platform and make EOSC attractive and easy to use





# EOSC Platform in a nutshell - Benefits

- Open Science practices and skills are rewarded and taught, becoming the 'new normal'
- Standards, tools and services allow researchers to find, access, reuse and combine results
- Open sharing of scientific results
- Co-creation - Users as 'experts' of their own experience; Industry engagement and technical pilots via Digital Innovation Hub
- Enhanced Open Science Monitor
- Knowledge Hub - learning platform, training catalogue
- Improved Provider portal (details/benefits to follow)

# EOSC Providers: Who they are, what they can provide

Diego Scardaci, EGI Foundation



# EOSC PROVIDERS: Who they are & what they provide



## e-Infrastructures

Ex: EUDAT, EGI, national e-Infrastructures (e.g. national research clouds), OpenAIRE, PRACE, FENIX, D4Science

- ✓ Software & other research products
- ✓ Storage
- ✓ Computing
- ✓ Services
- ✓ Training



## Research Infrastructures

Ex: ERICs, ESFRIs, EMODnet, Copernicus, DIAS (Data and Information Access Services), clusters

- ✓ Software & other research products
- ✓ Storage
- ✓ Datasets
- ✓ Computing
- ✓ Services
- ✓ Training



## Higher Education Institutes (HEIs)

- ✓ Software & other research products
- ✓ Publications
- ✓ Services
- ✓ Storage
- ✓ Datasets



## Research Institutes

Ex: Research performing organisations, universities, research centres

- ✓ Software & other research products
- ✓ Datasets
- ✓ Publications



## Archives & Repositories

Ex: Institutional thematic and national repositories, archives and aggregators

- ✓ Software & other research products
- ✓ Datasets
- ✓ Publications



## Computing & Data Centers

Ex: BCS, CSC, PSNC, CERN

- ✓ Software & other research products
- ✓ Storage
- ✓ Computing
- ✓ Services
- ✓ Training



## Publishers & Journals

- ✓ Publications



## Libraries

Ex: University libraries, institutional libraries, national libraries, LIBER

- ✓ Publications
- ✓ Datasets
- ✓ Training



## Commercial Providers

- ✓ Software & other research products
- ✓ Storage
- ✓ Datasets
- ✓ Computing
- ✓ Services
- ✓ Training
- ✓ Publications

# EOSC Resources

## Services

Combine human activities (operations, support etc) with Research products (software, data, documentation etc)

*Operational, active, delivered, managed*

Data processing

Storage & archiving

Thematic environment

...

Content source

Data source

Software repo

Publisher repo

....

## Research Products

Digital objects. Contain value which is realised through their examination, processing, combination or other use.

*Object, storeable, FAIR*

Data sets

Software

Publications

FDOs

...





# What providers can offer to EOSC

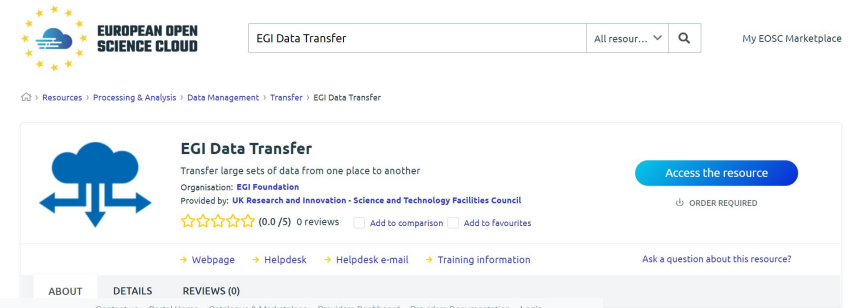
- Services

- Compute Resources
- Orchestrators
- Data management services
- Virtual Research Environments
- Data Analysis tools
- ...

- Research products

(coming soon - Sept 2022)

- Datasets
- Software
- Publications
- ...

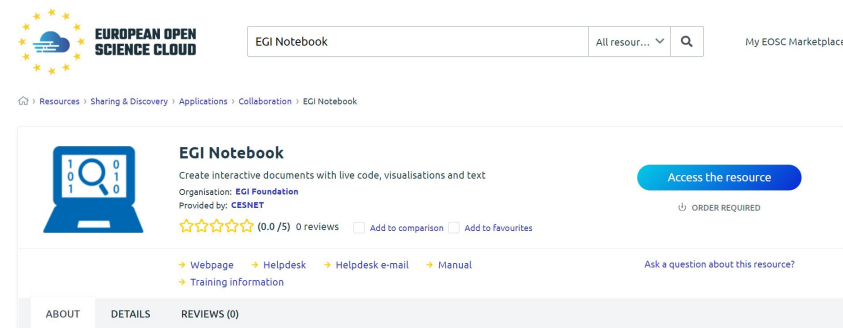


Research Data , Dataset , Other dataset type , 2020  
Submarine Permafrost Map (SuPerMAP), modeled with CryoGrid 2, Circum-Arctic, supplement to: Overduin, Pier Paul; Schneider von Deimling, Thomas; Miesner, Frederieke; Grigoriev, Mikhail N; Ruppel, Carolyn D; Vasiliev, Alexander A; Lantuit, Hugues; Juhls, Bennet; Westermann, Sebastian (2019): Submarine Permafrost Map in the Arctic Modeled Using 1-D Transient Heat Flux (SuPerMAP). Journal of Geophysical Research: Oceans, 124(6), 3490-3507

① Overduin, Pier Paul; ② Schneider von Deimling, Thomas; ③ Miesner, Frederieke; ④ Grigoriev, Mikhail N; ⑤ Ruppel, Carolyn D; ⑥ Vasiliev, Alexander; ⑦ Lantuit, Hugues; ⑧ Juhls, Bennet; ⑨ Westermann, Sebastian; ⑩ Labor, Sebastian;

OPEN ACCESS ENGLISH

Contact us Portal Home Catalogue & Marketplace Providers Dashboard Providers Documentation Login



Notebooks is a browser-based tool for interactive analysis of data using EGI storage and compute services. Notebooks are based on JupyterHub technology. This service can combine text, mathematics, computations and their rich media output using Jupyter technology, and can scale to multiple servers and users with the Cloud Compute service. Notebooks for Researchers: After a lightweight approval, users login, write and play notebooks using storage and compute capacity. Notebooks for Communities EGI offers consultancy and technology to set up a community-specific JupyterHub on top of a community VO. Comes together with EGI-enabled compute and storage resources and with community-specific storage. For individual users: Reproducible research with notebooks (notebooks can be re-played by the same user, shared and re-played by different users), easy to hook into other big-data environments (e.g. Spark, Hadoop) or services (e.g. Cloud Compute) provided by or hosted by EGI. For groups: establish a JupyterHub for your community on top of EGI and community-specific compute and storage resources. \*For individual users:

SCIENTIFIC CATEGORISATION



• Generic  
- Generic

# Providers and Services and data sources

The screenshot displays the European Open Science Cloud (EOSC) interface. At the top, the EOSC logo is visible. Below it, a search bar contains the text "EGI Cloud Compute". To the right of the search bar, there is a dropdown menu labeled "All resour..." and a magnifying glass icon. Further right, the text "My EOSC Marketplace" is displayed.

The main content area shows the search results for "Zenodo". The search bar now contains the text "Zenodo". The results list includes the Zenodo repository, which is a catch-all repository for research results. The repository is listed with a rating of 0.0/5 and 0 reviews. It is categorized as "Open Access".

The Zenodo repository entry includes a description: "A catch-all repository" and "Organisation: OpenAIRE". It also features a button labeled "Access the resource" and a link to "OPEN ACCESS". Below the description, there are links to "Webpage", "Helpdesk", "Helpdesk e-mail", "Manual", and "Training information".

The interface also shows a sidebar with the "geohazards" logo and a description of the Geohazards Exploitation Platform (GEP). The GEP is described as a platform that provides access to optical data such as Landsat 8 missions. The GEP also provides advanced services including advanced InSAR chains based on Persistent Scatterer Interferometry (PSI).

At the bottom of the screenshot, there are three logos: TerraDUE, EGI, and OpenAIRE. Arrows point from the TerraDUE and EGI logos to the Zenodo repository entry, indicating their association with the resource.

## SCIENTIFIC CATEGORISATION



Generic

# Research Products (from Sept 2022)

**Publication . Part of book or chapter of book . 2013**  
**Analyzing Twitter Data**  
Shamanth Kumar; Fred Morstatter; Huan Liu;  
Published: 14 Oct 2013  
Publisher: Cambridge University Press

**SUMMARY**  
Abstract  
So far we have discussed the collection and management of a large set of Tweets. It is time to put these Tweets to work to gain information about the data we have collected. This chapter focuses on two key aspects of Twitter data for data analysis: networks and text.

**Persistent Identifiers**  
DOI: [10.1017/cbo9781316182635.003](https://doi.org/10.1017/cbo9781316182635.003), [10.1007/978-1-4614-9372-3\\_4](https://doi.org/10.1007/978-1-4614-9372-3_4)

**Subjects**  
ACM Computing Classification System: InformationSystems\_MISCELLANEOUS  
free text keywords: Data quality, Sentiment analysis, Visual analytics, World Wide Web, Computer science, Tokenization (data security), Social media, Microblogging, Data enrichment, Geotagging, Disaster monitoring, Latent Dirichlet allocation, symbols.namesake, symbols, Information retrieval, Work (electrical), Key (cryptographic), Network construction, Large set (combinatorics), Topic model, Eigenvector centrality

**Download from** [View all 2 versions](#)  
[https://doi.org/10.1007/978-1-4614-9372-3\\_4](https://doi.org/10.1007/978-1-4614-9372-3_4)  
Part Of Book Or Chapter Of Book . 2013

**Research Data . Dataset . 2021**  
**Twitter-based population mobility and COVID-19 forecasting in South Carolina R-script and data**  
Zeng, Mengbo;  
Published: 08 Mar 2021  
Mendeley

**SUMMARY**  
Abstract  
The data and R script are provided to allow for reproducibility of results for all of the information provided within the article ("Spatial-temporal relationship between population #mobility and COVID-19 outbreaks in South Carolina: A time series forecasting analysis").

**Persistent Identifiers**  
DOI: [10.17632/68chg6cch](https://doi.org/10.17632/68chg6cch), [10.17632/68chg6cch.1](https://doi.org/10.17632/68chg6cch.1)

**Communities**  
Communities with gateway  
[COVID-19](#)

**Download from** [View all 4 versions](#)  
<https://doi.org/10.17632/68chg6cch>  
Dataset . 2021  
Providers: Datacite  
[Mendeley Data](#)

**Software**  
**twitterscraper software on GitHub**  
OPEN SOURCE

**SUMMARY**  
Abstract  
Scrape Twitter for Tweets

**RELATED RESEARCH**  
5

**Download from** [View all 2 versions](#)  
[Software](#)  
[GitHub](#)

Powered by [OpenAIRE Research Graph](#) . Last update of records in OpenAIRE: Mar 12, 2022

**EUROPEAN OPEN SCIENCE CLOUD**  
Zenodo  
Resources > Aggregators & Integrators > Aggregators & Integrators > Data > Zenodo

**Zenodo**  
A catch-all repository  
Organisation: [OpenAIRE](#)  
☆☆☆☆☆ (0.0 / 5) 0 reviews ☐ Add to comparison ☐ Add to favourites  
[Webpage](#) [Helpdesk](#) [Helpdesk e-mail](#) [Manual](#) [Ask a question about this resource?](#)

**ABOUT** **DETAILS** **REVIEWS (0)**

Zenodo is a general purpose repository that enables researchers, scientists, projects and institutions to share, preserve and showcase multidisciplinary research results (data, software and publications) that are not part of the existing institutional or subject-based repositories of the research communities. It is founded in the trustworthy CERN data centre. Enables everyone to participate in Open Science. Used by more than 50K researchers and 3K communities all over the world.

**SCIENTIFIC CATEGORISATION**  
Generic

# Rules Of Participation (ROP)

Provider profile		Resource profile		
Basic information	Marketing information	Basic information	Marketing information	Maturity information
Classification information	Location information	Classification information	Geographical and language information	Dependencies information
Maturity information	Other information	Resource location information	Contact information	Attribution information
		Management information	Access and order information	Financial information

## Criteria 1: Acceptable onboarding groups

- Representative of Provider fulfilling necessary information in the Provider Profile
- **Legal entities**

## Criteria 2: Acceptable onboarding people

- Deliverer of resource
- In the case of a federated resource, onboarder should be lead provider

## Criteria 3: Acceptable resource

- Specific service offered 'live' to customers. Not a research product (sw/document)
- Sufficient maturity ( $\geq$ TRL8)
- Targeted to EOSC/EOSC communities OR build on/leverage EOSC capability  
(note: other resources - data set, publication etc. will be eligible later)

## Criteria 4: Completed profile meeting following requirements

- Provider/resource profile with (at least) all required fields, in English
- Basic information of resource, policies etc. in English
- Helpdesk/support function capable of answering queries in English
- Resource available in Europe (and in a European language)

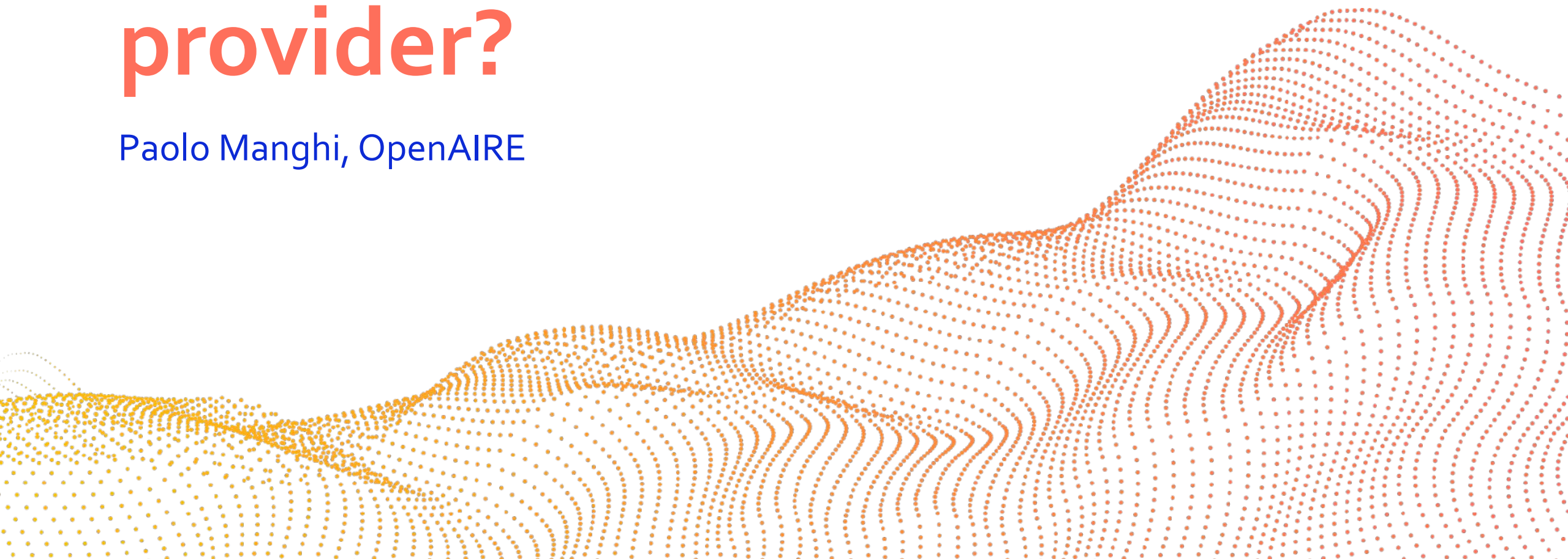
## Criteria 5: Maintain up-to-date information

- Agreement to keep EOSC Profile information (and resource) updated

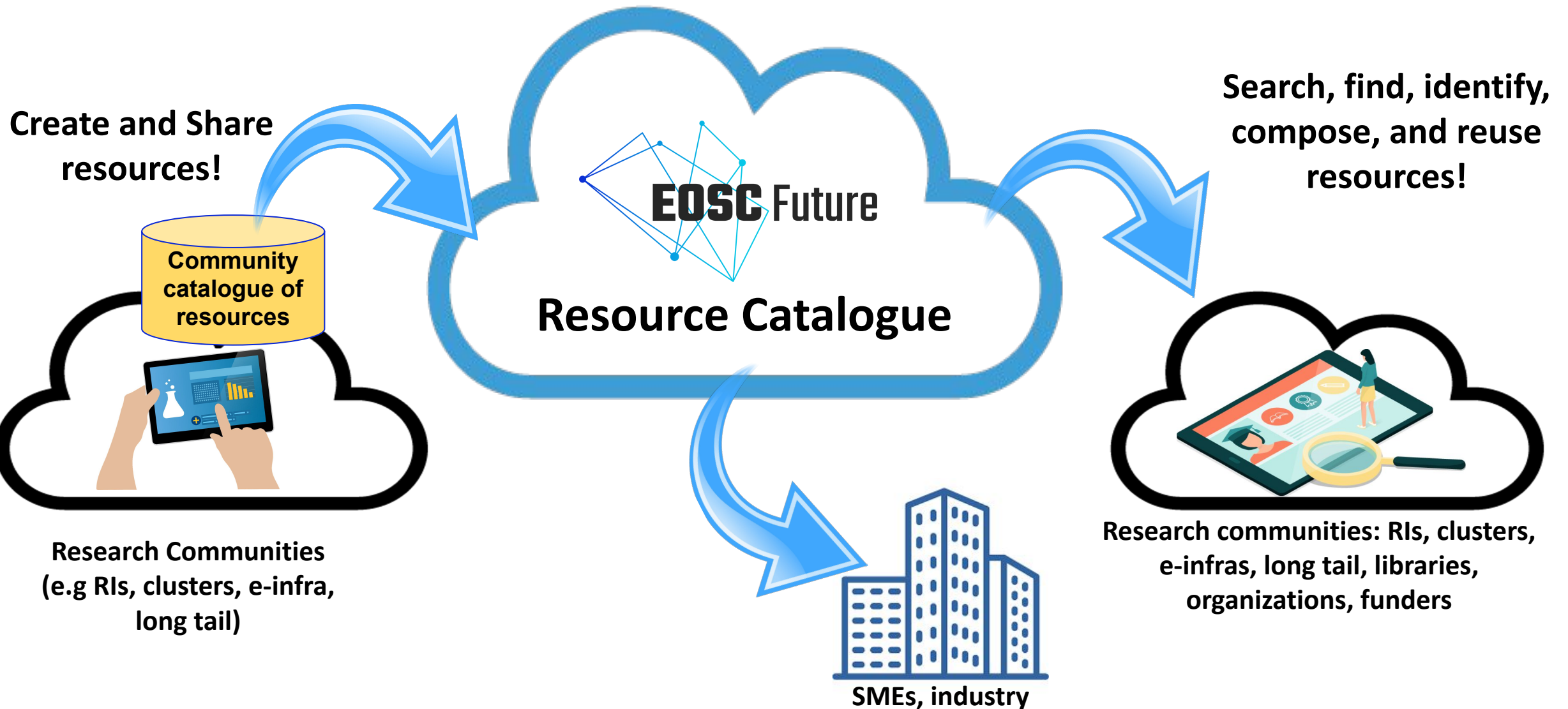


# Why become an EOSC provider?

Paolo Manghi, OpenAIRE

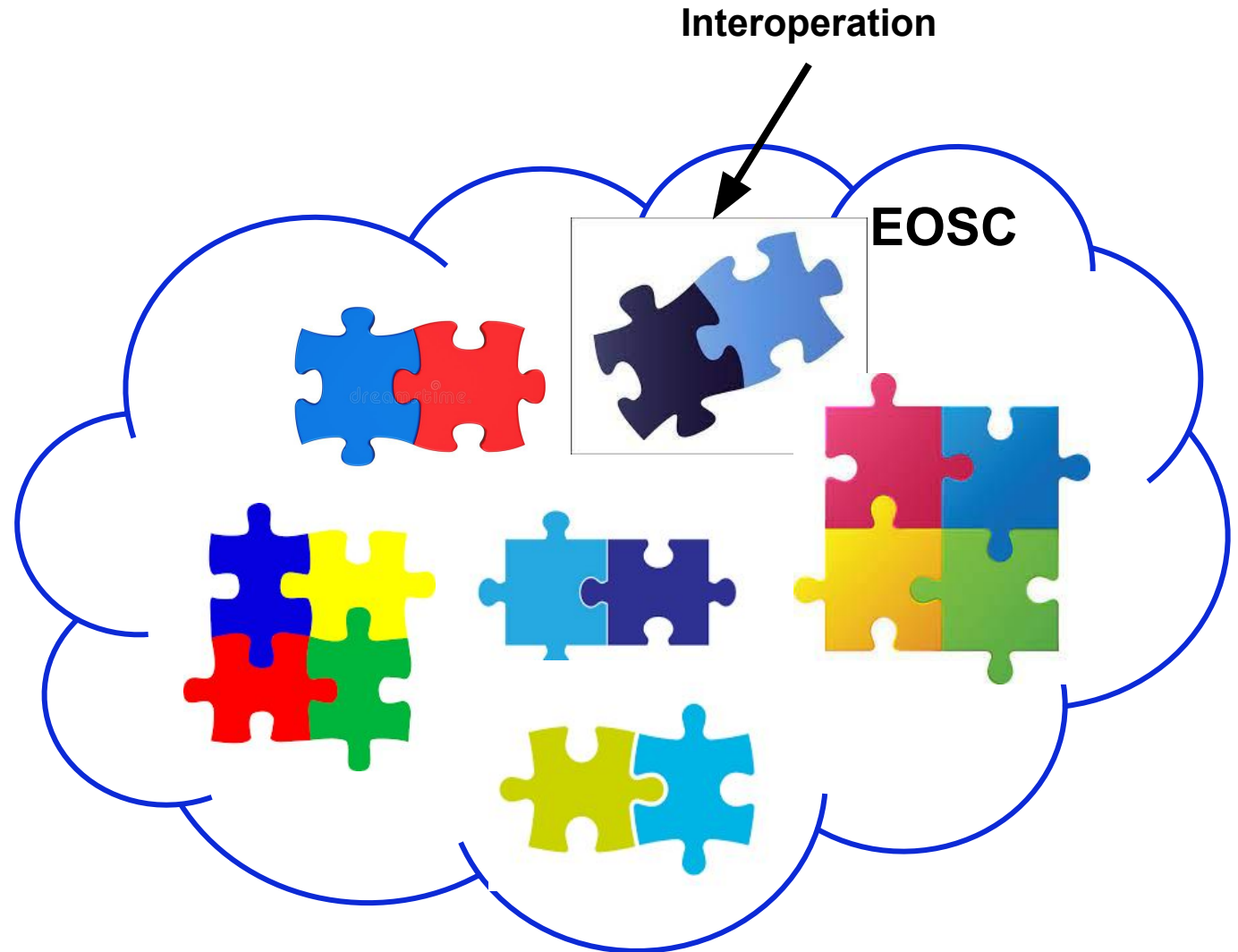


# Sharing resources beyond community boundaries



# EOSC interoperability framework to facilitate resource integration and composability

- EOSC resources provide descriptions of their interoperability capabilities (formats, protocols, guidelines)
- Providers can discover and combine resources based on their common interoperability capabilities



# Reporting scientific production to funders, Commission, and scholarly communication services

Create and Share resources!

Community catalogue of resources

EOSC Future  
Resource Catalogue

Research Communities  
(e.g RIs, clusters, e-infra,  
long tail)

EUROPEAN OPEN SCIENCE CLOUD

Welcome to EOSC research discovery

Project Lifecycle Report

HOBRIZON 2020

Accept the suggested publications from OpenAIRE and add

your project publications

No.	Type	Title	Author	Title of the Journal/Book	Publication date of the publication	DOI	Project/ publication link
1	Book-It	Open Science Training Handbook	Sergio Bayle, April 2016		04-04-2016	10.54455/consortio.2016.04	
2	Other	Project HOBRIZON Plan	Brinkmann, Helene		01-04-2017	10.54455/consortio.2017.04	

Project publications (1 publications)

No.	Type	Title	Author	Title of the Journal/Book	Publication date of the publication	DOI	Project/ publication link
1	Publication	Project HOBRIZON Plan	Brinkmann, Helene				

ORCID

Scopus



SciVal  
ELSEVIER



# EOSC Core functionality

