

Практика открытой науки с OpenAIRE

2nd NI4OS-Europe National Dissemination Event
in Moldova
May 5, 2022, online

Iryna Kuchma, EIFL, OpenAIRE
Giulia Malaguarnera, OpenAIRE



Attribution 4.0 International

UNESCO Recommendation on Open Science

In a world first, UNESCO sets international standards for open science

[Discover →](#)

The banner features a world map, an open book at the bottom, and various scientific icons like a microscope, DNA helix, atom, and beaker. A central circular graphic contains the text 'OPEN SCIENCE'.

Global call for best practices in open science

[Contribute →](#)

The banner shows a stylized illustration of a person sitting at a desk with a computer monitor, with a red envelope icon on the screen.

Call for papers

Open science policies as an accelerator for achieving the Sustainable Development Goals

[More →](#)

The banner features a photograph of hands working on documents with sticky notes.

<https://www.unesco.org/en/natural-sciences/open-science>

Open science increases scientific collaborations and sharing of information for the benefits of science and society



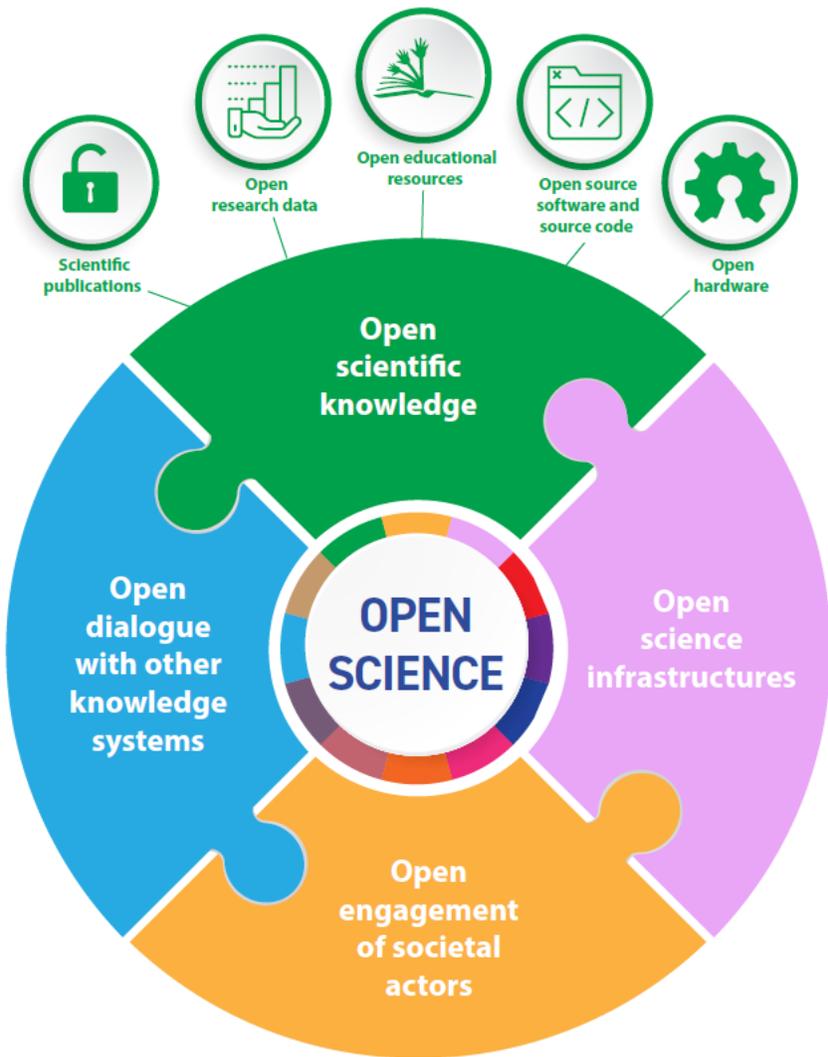
OPEN SCIENCE



makes multilingual scientific knowledge openly available, accessible and reusable for everyone



opens the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.



VALUES

Quality and integrity

Collective benefit

Equity and fairness

Diversity and inclusiveness

**OPEN
SCIENCE**

PRINCIPLES

Transparency, scrutiny, critique and reproducibility

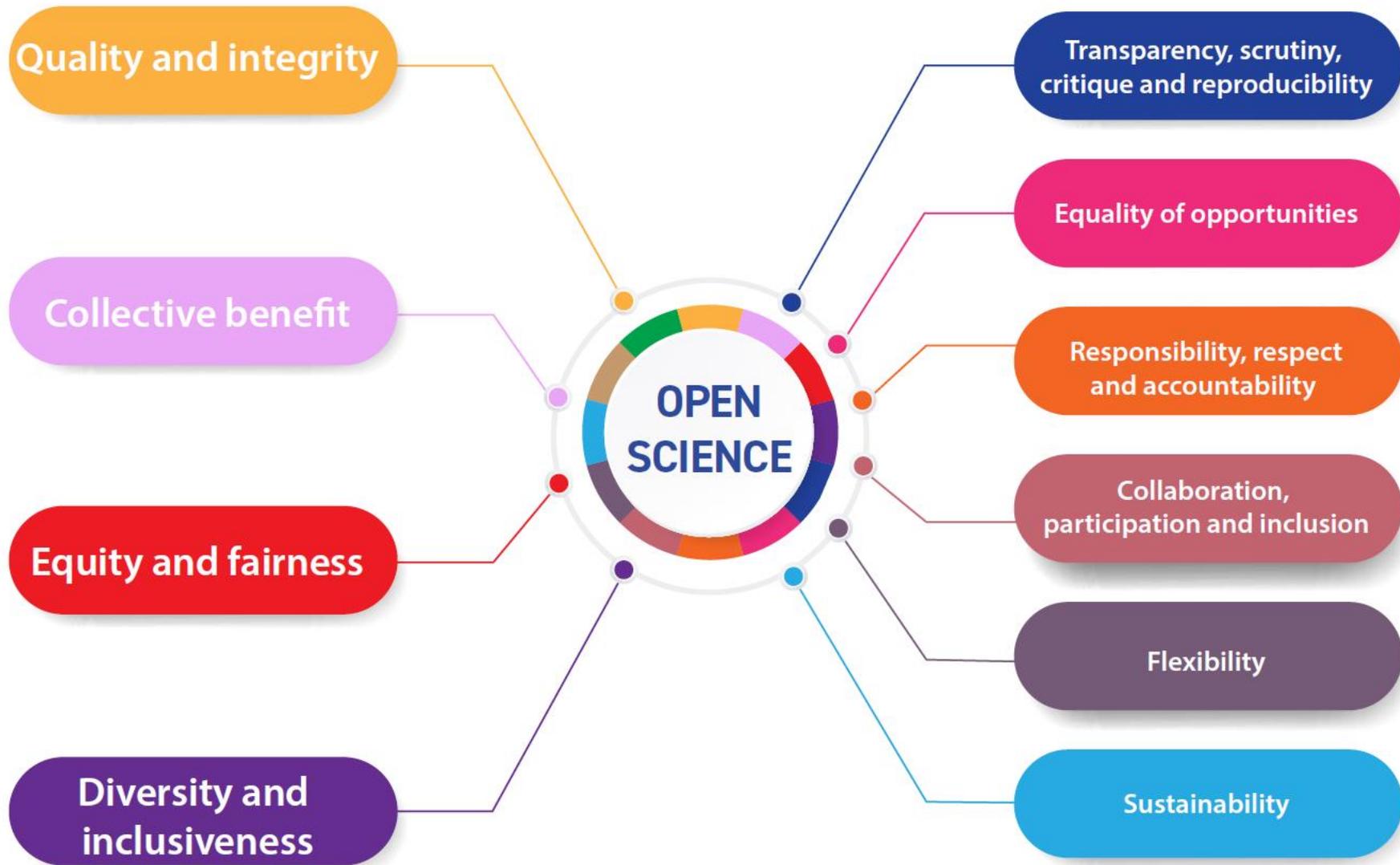
Equality of opportunities

Responsibility, respect and accountability

Collaboration, participation and inclusion

Flexibility

Sustainability



OPEN SCIENCE



AREAS OF ACTION

- ASSOCIATE MEMBERS

- REGULAR MEMBERS

WHO WE (OPENAIRE) ARE:

A European infrastructure on open scholarly communication

Mission: Shift scholarly communication towards openness and transparency and facilitate innovative ways to communicate and monitor research.

Non-profit organization

- Established Oct 2018
- Headquarter Greece, virtual office
- 47 members
- From 34 countries

IRELAND

The Provost, Fellows, Foundation Scholars and the other Members of the Board, of the College of the Holy and Undivided Trinity of Queen Elizabeth near Dublin (TCD)

IRELAND

Landspítali University Hospital National and University Library of Iceland

IRELAND

Open Access Data Archiving and Networked Services (OANS)

IRELAND

Leuven University

IRELAND

University of Luxembourg

IRELAND

University of Lille Library NRS Cooperin

IRELAND

ERN (European Organization for Nuclear Research) Hauptbibliothek der Universität Zürich

IRELAND

Fundación Española para la Ciencia y la Tecnología (FECYT)

IRELAND

Universidade do Minho

IRELAND

Universität Wien

IRELAND

Univerza v Ljubljani (UL)

IRELAND

Consiglio Nazionale delle Ricerche (CNR)

IRELAND

JISC

IRELAND

Universität Bielefeld
KIM Konstanz
University of Göttingen

IRELAND

Syddansk Universitet
University of Southern Denmark

IRELAND

Unit-Direktoratet for IKT og fellestjenester i høyere utdanning og forskning

IRELAND

Kungliga biblioteket
National Library of Sweden

IRELAND

Helsingin yliopisto (UH)

IRELAND

University of Tartu

IRELAND

University of Latvia

IRELAND

Kauno technologijos universitetas (KTU)
Stichting eIFL.net

IRELAND

University of Warsaw

IRELAND

Masaryk University

IRELAND

Centrum Vedecko Technicky Informacii (CVTISR)- Slovak Centre of Scientific and Technical Information

IRELAND

Ukrainian Institute of Scientific and Technical Expertise and Information (UkrISTEI)

IRELAND

UEFISCDI (Executive Agency for Higher Education, Research and Innovation Funding)

IRELAND

Institute of Mathematics and Informatics, Bulgarian Academy of Sciences

IRELAND

Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia

IRELAND

Izmir Institute of Technology (IIT)

IRELAND

University of Cyprus Library

IRELAND

Bar Ilan University

IRELAND

Rudjer Boskovic Institute

IRELAND

University of Debrecen

IRELAND

University of Malta

IRELAND

CREDI
University of Banja Luka

IRELAND

University of Montenegro

IRELAND

University of Belgrade

IRELAND

Ss. Cyril and Methodius University in Skopje UKIM

IRELAND

HEAL-link
Athena Research and Innovation Center

Library of the University of Piraeus

Three pillars



OpenAIRE

Supporting Open Science

European (and beyond) infrastructure
for Open Access and Open Science

CONNECT PROVIDE EXPLORE



Networking infrastructure: Open Access/Science advocacy and support, interoperability, global alignment on Open Science, National Open Access Desks, FAIRness of research data, citizen science, etc.

DEVELOP MONITOR



Technical infrastructure: services for, e.g., monitoring of Open Access/Science and Research Impact for funders and research infrastructures

Engaging with Policy

10

Evidence Based Policymaking in Europe Summit: 2021
Day 2: from digital disruption to digital adoption
Join us: 10th December 10 am - 11.30 am

Natalia Manola
Natalia Manola is the CEO of OpenAIRE, a pan European e-Infrastructure supporting scholarly communication and open science in Europe.

Data Driven Policy Cluster
Co-creating digital tools for better governance

Driving the development of Open Science in Denmark

country highlights ANASTASIA ARITZI 09 Dec 2021 433 Hits 0 Comments

ANNE THORST MELBYE
NOAD FOR DENMARK

ASGER VÆRING LARSEN
NOAD FOR DENMARK

OpenAIRE is an important network

ALINA IRIMA
NOAD FOR ROMANIA

"Open Science can only become a reality through cultural change and this requires efforts towards achieving a common vision, through a common dialogue."

OpenAIRE Team has the pleasure of speaking to Alina Irimia, Open Science projects coordinator at UEFISCDI in Romania. Mrs Irimia, talked about the priority to connect and engage the Romanian community to the open science dynamics through a national dedicated platform that is now under development.

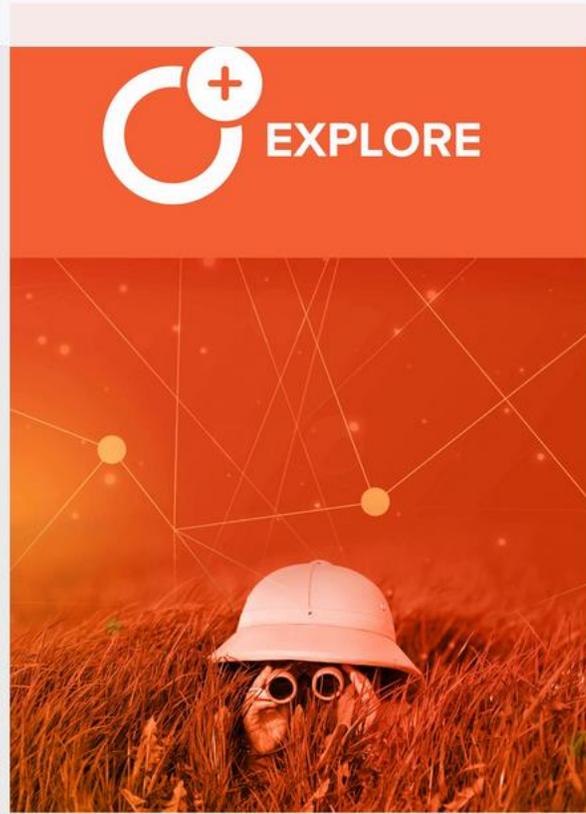
2nd NI4OS-Europe National Dissemination Event in Moldova , May 5, 2022, online



OpenAIRE
ResearchGraph

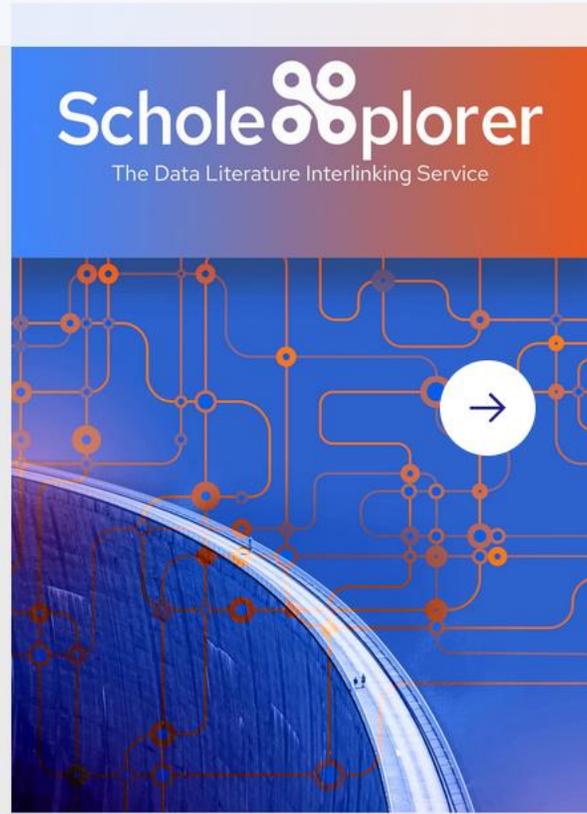
←

A woman with curly hair is looking at a laptop. The background is red with a network graph pattern.



EXPLORE

A person wearing a white hard hat and goggles is in a field of tall grass. The background is orange with a network graph pattern.



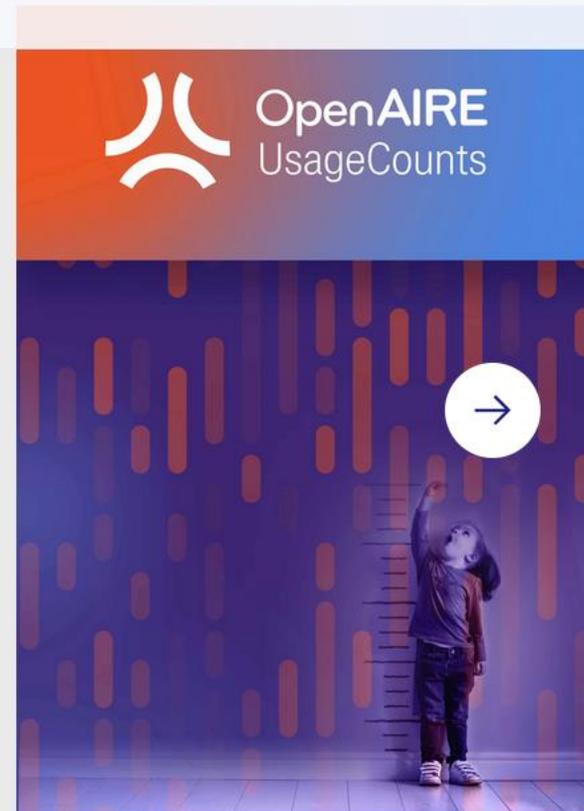
Scholar Explorer
The Data Literature Interlinking Service

→

A blue background with a network graph pattern and a curved road.



[View full catalogue →](#)



[View full catalogue →](#)



Services

Support

Open Science In Europe

About



Sign In

Metadata Validator

←

Metadata Validator banner featuring a logo with a 'W' and a checkmark, and a background image of hands holding a tablet.

EPIsciences

EPIsciences banner featuring a logo with a grid pattern and a background image of a woman reading a book.

argos

→

argos banner featuring a logo in a stylized font and a background image of a man presenting to a group.



[View full catalogue →](#)



Services

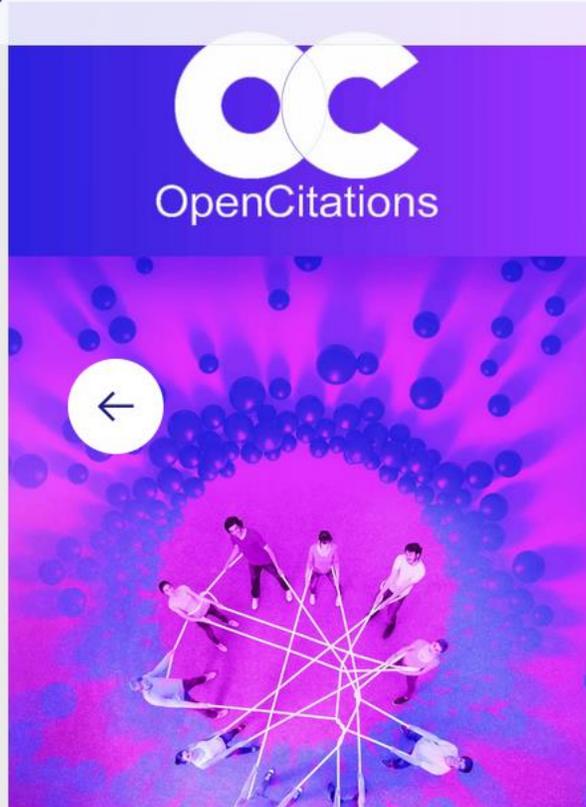
Support

Open Science In Europe

About



Sign In



[View full catalogue →](#)



PROVIDE

←

OpenPlato

OPENSOURCE OBSERVATORY

→



[View full catalogue →](#)



Services for Open Science

[Services](#)

[Support](#)

[Open Science In Europe](#)

[About](#)



[Sign In](#)



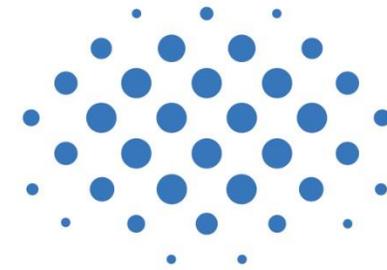
[View full catalogue →](#)

What OpenAIRE offers in EOSC marketplace

Services Catalogue
OpenAIRE Nexus



**EUROPEAN OPEN
SCIENCE CLOUD**



OpenAIRE/EOSC Research Graphs
Providing an **open metadata**
research graph of interlinked
scientific products, with **Open**
Access information

NI4OS
Europe

OpenAIRE Nexus





Funders



Data Sources

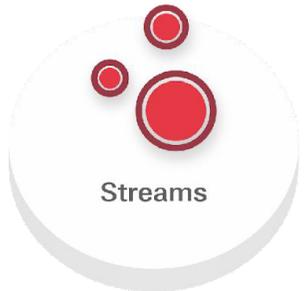


ORCID



Publications

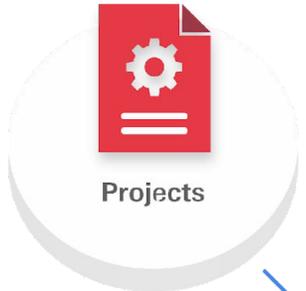
streams



Streams

substreams

projects



Projects

collectedFrom
hostedBy

funds



Research
Products

subtype



Datasets

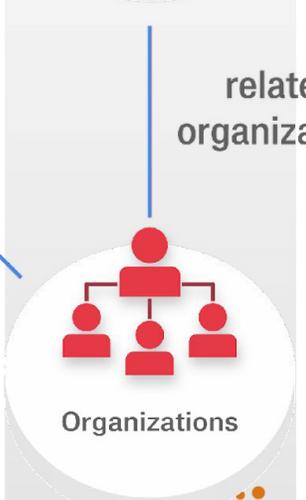


Software



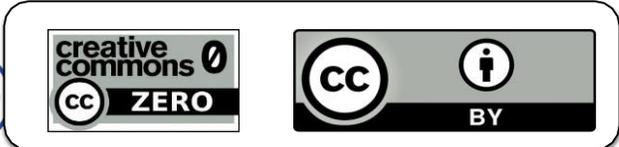
Other Research
Products

beneficiaries



Organizations

related
organizations



GitHub Applications Database
Software Heritage PRESERVING TECHNICAL KNOWLEDGE
elixir bio.tools

... and more tools and software sources

frontiers PLOS Springer
F1000 Faculty of 1000

... and more publishers

CORDIS NSF DFG
Deutsche Forschungsgemeinschaft

... and more European and international funders

Metadata, links, and full-texts from more than 96,000+ sources worldwide

unpaywall OpenCitations Microsoft

... and more research graphs

3data.org ROR openDOAR ORCID
IRsharing.org standards, databases, policies

... and more registries

LA Referencia Red de repositorios de acceso abierto a la ciencia
SciELO DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

... and more aggregators

Library arXiv.org RePEc HAL archives-ouvertes.fr
PubMed zenodo Research. Shared.
DICE

... and more thematic and institutional repositories

DARIAH-EU elixir EPOS EUROPEAN PLATE OBSERVING SYSTEM
ECRIN EUROPEAN CLINICAL RESEARCH INFRASTRUCTURE NETWORK
egi OpenAIRE NEXUS

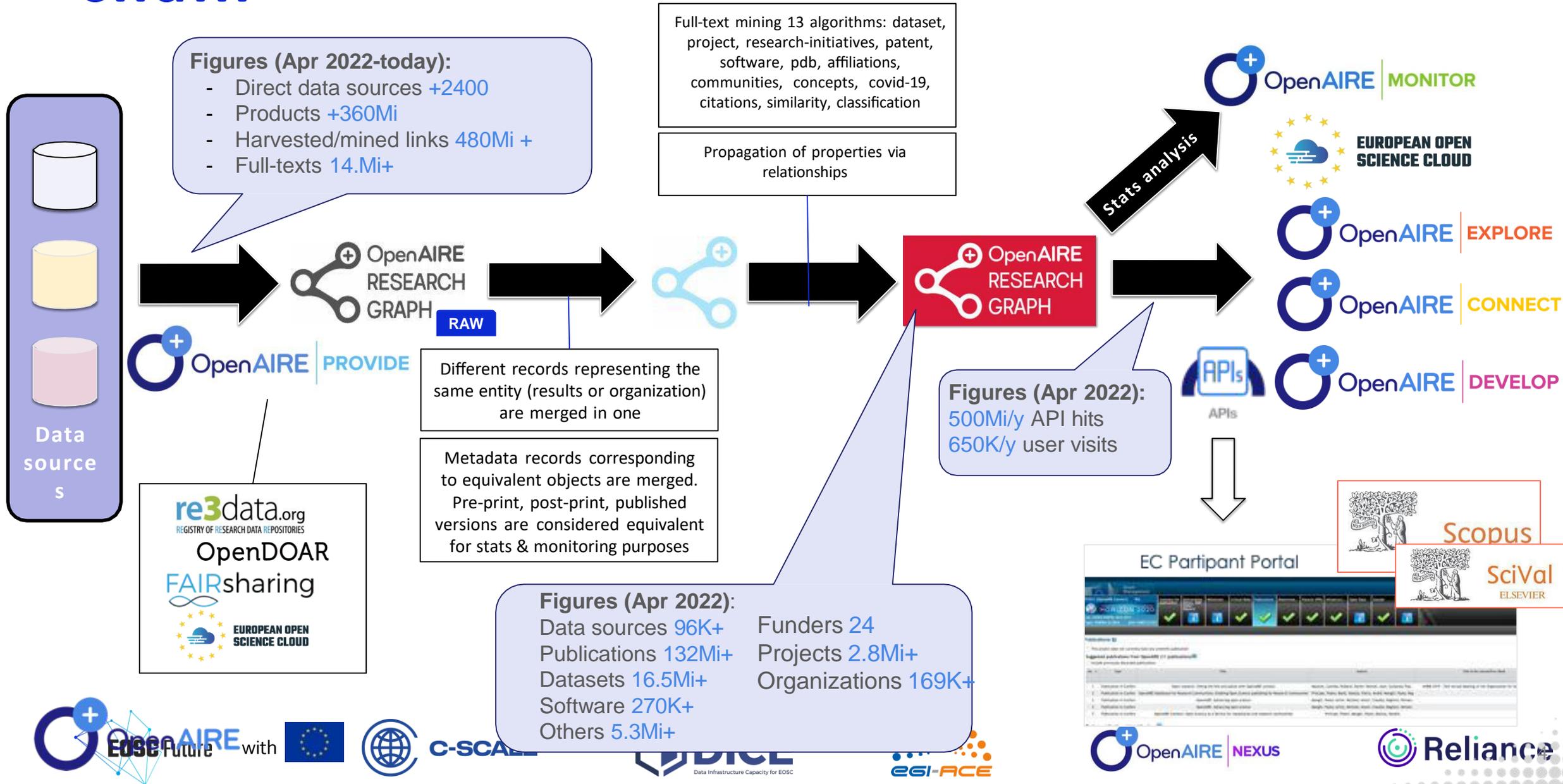
... and more einfra and RI sources

Reliance

OpenAIRE EOSE Future with European Union flag C-SCALE

EGI-ACE

OpenAIRE Research Graph: the supply chain



OpenAIRE and the EOSC Core



National Research Council (CNR)

METHODOLOGY

SIGN IN 

Projects



PRINT REPORT

Overview

Horizon 2020 Grants

Funding

Research Output

Open Science

Collaborations

Impact

Search research outcomes

Project Participations

1,476

EC Project Participations

1,426



National Research Council (CNR)

METHODOLOGY

SIGN IN

PRINT REPORT

Projects

Overview

Horizon 2020 Grants

Funding

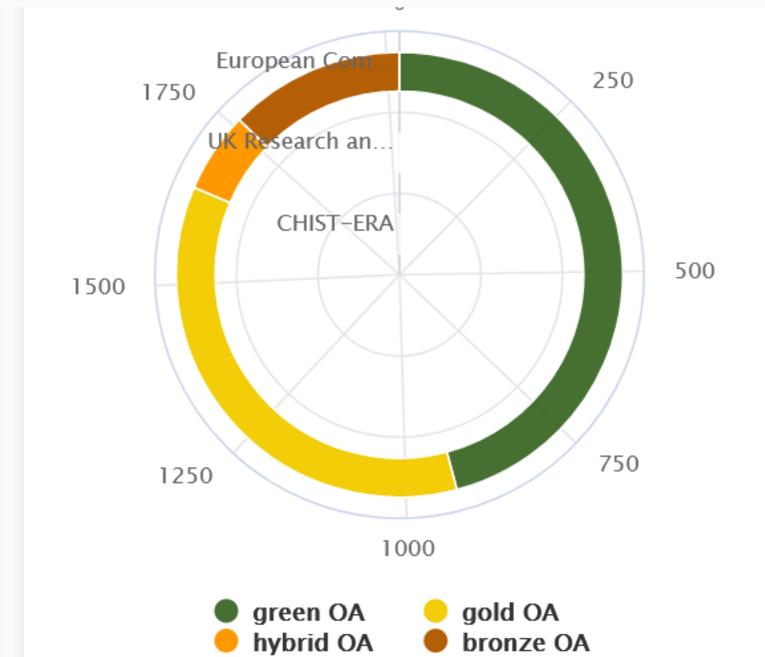
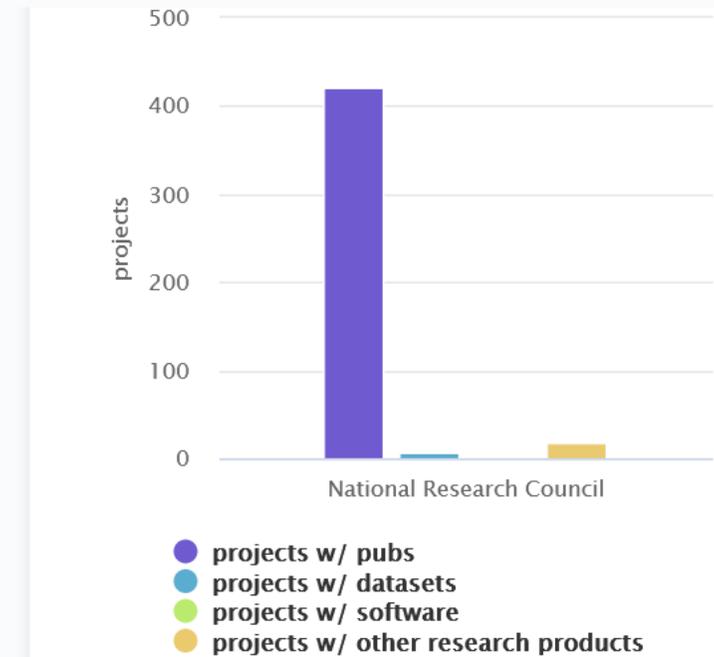
Research Output

Open Science

Collaborations

Impact

Search research outcomes



National Research Council (CNR)

METHODOLOGY

SIGN IN 

Projects

 PRINT REPORT

Overview

Horizon 2020 Grants

Funding

Research Output

Open Science

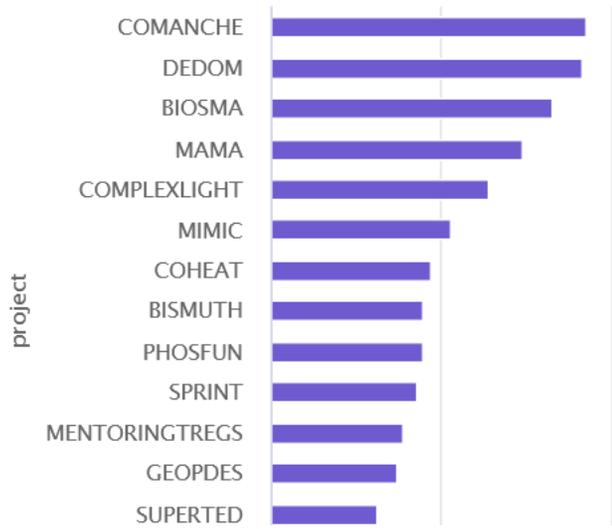
Collaborations

Impact

Search research outcomes

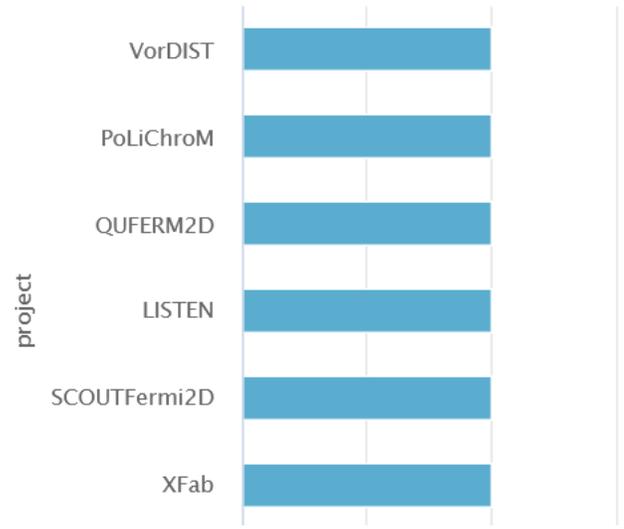
Top Projects

by # publications produced that are affiliated to the institution



Top Projects

by # datasets produced that are affiliated to the institution



National Research Council (CNR)

METHODOLOGY

SIGN IN

PRINT REPORT

Projects

Overview

Horizon 2020 Grants

Funding

Research Output

Open Science

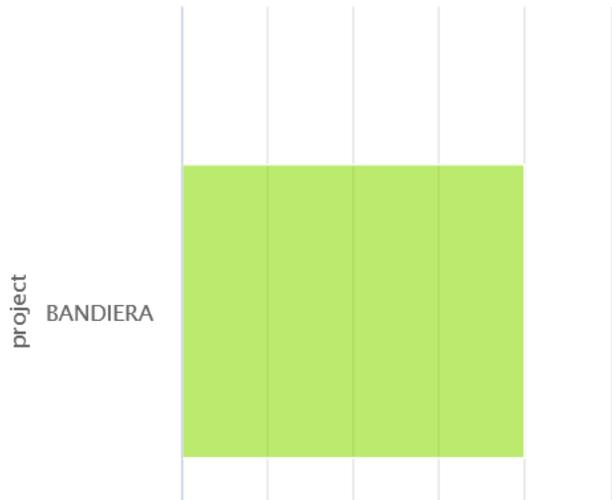
Collaborations

Impact

Search research outcomes

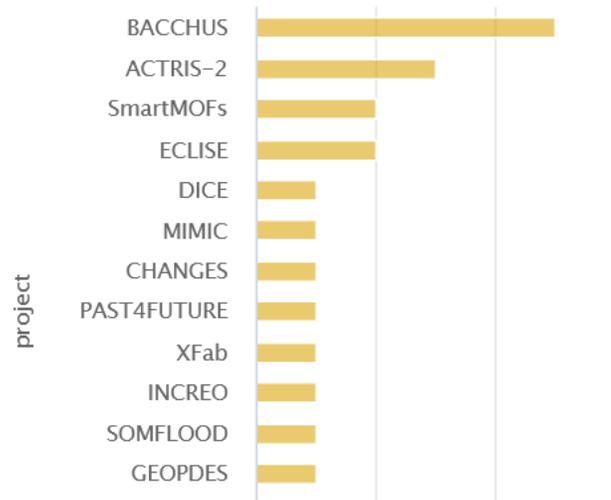
Top Projects

by # software produced that are affiliated to the institution

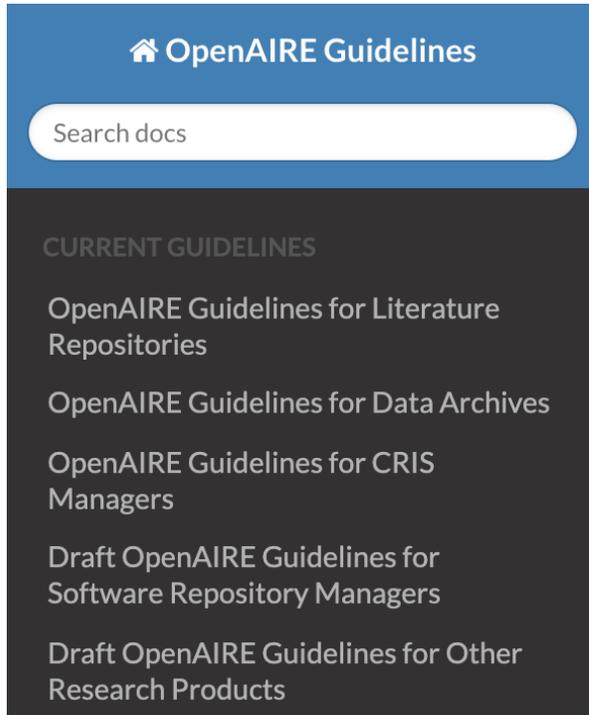


Top Projects

by # other research products produced that are affiliated to the institution



Guidelines for content providers



OpenAIRE Guidelines

Search docs

CURRENT GUIDELINES

- OpenAIRE Guidelines for Literature Repositories
- OpenAIRE Guidelines for Data Archives
- OpenAIRE Guidelines for CRIS Managers
- Draft OpenAIRE Guidelines for Software Repository Managers
- Draft OpenAIRE Guidelines for Other Research Products

guidelines.openaire.eu



OpenAIRE
Guidelines
for LITERATURE
Repositories v4.0



OpenAIRE
Guidelines
for DATA
Repositories



OpenAIRE
Guidelines
for SOFTWARE
Repositories



OpenAIRE
Guidelines
for OTHER research
products



OpenAIRE
Guidelines
for CRIS

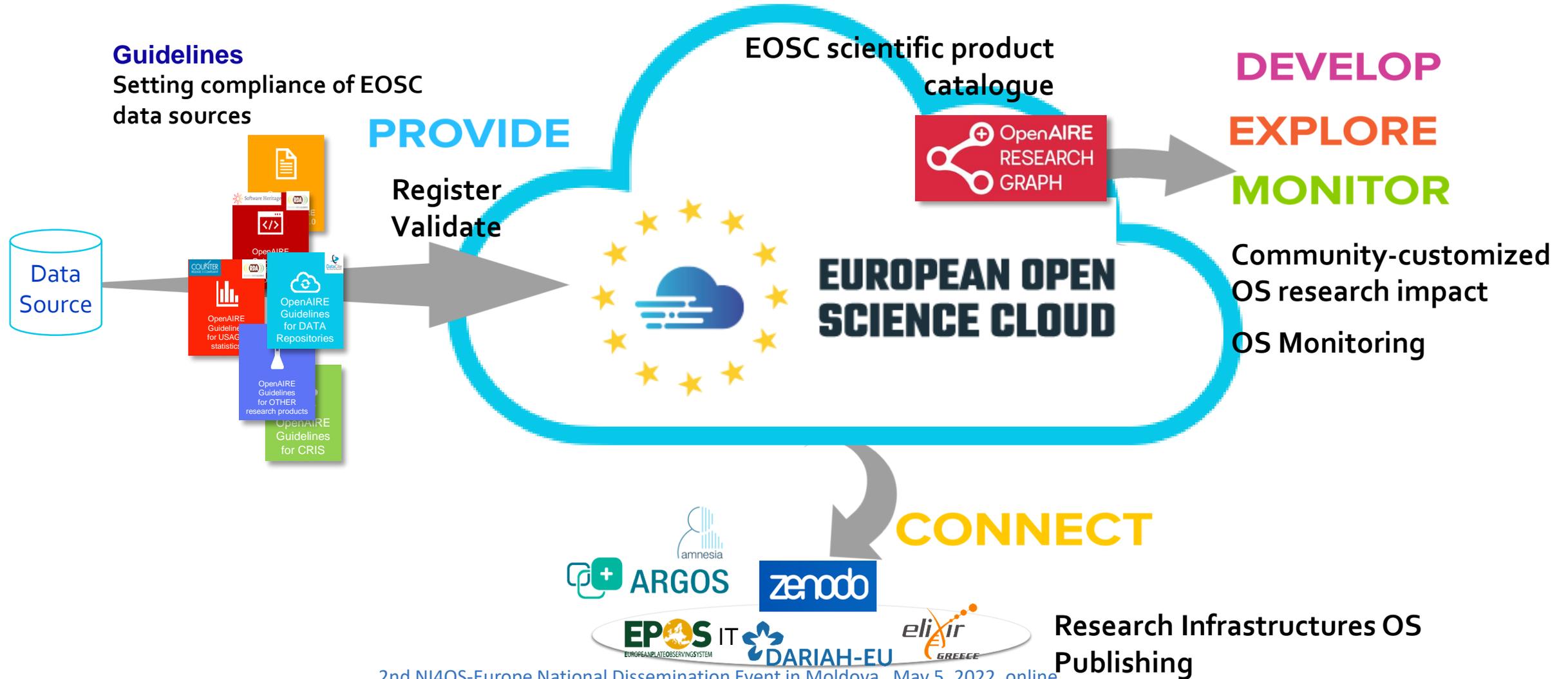


OpenAIRE
Guidelines
for USAGE statistics



Integration

from beginning to end (repositories, CRIS → Monitoring)



ANSWERING RESEARCH QUESTIONS WITH EOSC



How has the COVID-19 pandemic affected air quality in France?

ANNE FOUILLOUX, Climate data scientist



SEARCH

Anne starts by **checking OpenAIRE | EXPLORE** for existing research outputs that can help her on her way.

1



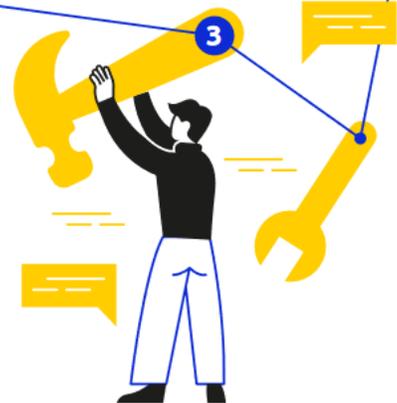
DISCOVERY

She's in luck! She finds a Jupyter notebook **with atmospheric data from Copernicus**, the EU's Earth Observation Programme, that can be **accessed through EOSC**.

2

FINDING COMPATIBLE TOOLS

When she takes a closer look, **EOSC recommends tools** to help Anne process the Jupyter notebook and share her outputs.



3

SHARING RESULTS

Anne also uses the Jupyter notebook and B2Drop **to make her outputs accessible** through EOSC and Zenodo.

6



ORDERING AND ACCESS

Anne is eager to dive in. To request access to the Jupyter notebook, she'll need to **place an order** through EOSC. With just a few clicks she makes the request for an **EGI Notebook*** and **B2Drop**** package.

4



USING RESOURCES

Anne can **adapt the Jupyter notebook** to output results for France in the years before and during the COVID-19 pandemic.

5

*EGI Notebook: A browser-based tool for interactive data analysis using EGI storage.
**B2DROP: A low-barrier, user-friendly storage environment provided by EUDAT.

Find out for yourself what's available on EOSC:
marketplace.eosc-portal.eu

What matters in the life of a climate data scientist?

1

OpenAIRE | EXPLORE zenodo

EOSC Jupyter Notebook

doi



3

RoHub Executable RO

Created: 29.04.2022 (21:46), last modified: 29.04.2022 (22:29) 0.00 / 5

NO2 (Sept. 2019, 2020, 2021) in Spain Jupyter notebook demonstrating the usage of CAMS European air quality analysis from Copernicus Atmosphere Monitoring with RELIANCE services

Anne Fouilloux

Contributed by: Jean Jaquinta, Simone Mantovani
Published by: University of Oslo, Nordic e-Infrastructure Collab.

This Research Object demonstrates how to use CAMS European air quality analysis from Copernicus Atmosphere Monitoring with RELIANCE services and compute monthly map of NO2 over a given geographical area, here Spain

LOCATION: Area 1

CONTENT

- output
 - netCDF data for daily NO2 over Spain in September 2019, 2020 ...
 - Nitrogen Dioxide [kg m-3] over Spain for September 2019, 202...
 - Timeseries of Nitrogen Dioxide [kg m-3] over Madrid in septe...
 - Nitrogen Dioxide [kg m-3] over Spain on September 15, 2021
 - Nitrogen Dioxide [kg m-3] over Spain for September 2019, 202... (156Kb)
- tool
 - Jupyter Notebook of CAMS European air quality analysis from ...

Downloads: 1

AGENTS: Anne Fouilloux, Creator

QUALITY: 0%

KEYWORDS: JUPYTER-NOTEBOOK, CAMS, AIR QUALITY, SPAIN, CONFERENCE

DISCOVERED METADATA: RELIANCE SERVICE, AIR QUALITY ANALYSIS, MAP OF NO2, ANALYSIS FROM COPERNICUS ATMOS, USAGE OF CAMS, NO2, SPAIN, AREA, RELIANCE, MAP, SPAIN, ANALYSIS, AIR QUALITY, CAMS, USAGE

TOOLBOX

SHARE

CITE AS
Fouilloux, Anne, Jean Jaquinta, and Simone Mantovani. "NO2 (Sept. 2019, 2020, 2021) in Spain Jupyter notebook demonstrating the usage of CAMS European air quality analysis from Copernicus Atmosphere Monitoring with RELIANCE services." RoHub. Apr 29, 2022. <https://doi.org/10.11584/rohub/112142345-3530-4479-9930-6168468f7776>

doi zenodo

Thank you! Questions!



<https://www.openaire.eu>



https://twitter.com/OpenAIRE_eu



<https://www.facebook.com/groups/openaire>

giulia.malaguarnera@openaire.eu

iryna.kuchma@eifl.net