



# Do we really need another 30 years to achieve open science?

Marin Dacos – French National Open Science Coordinator

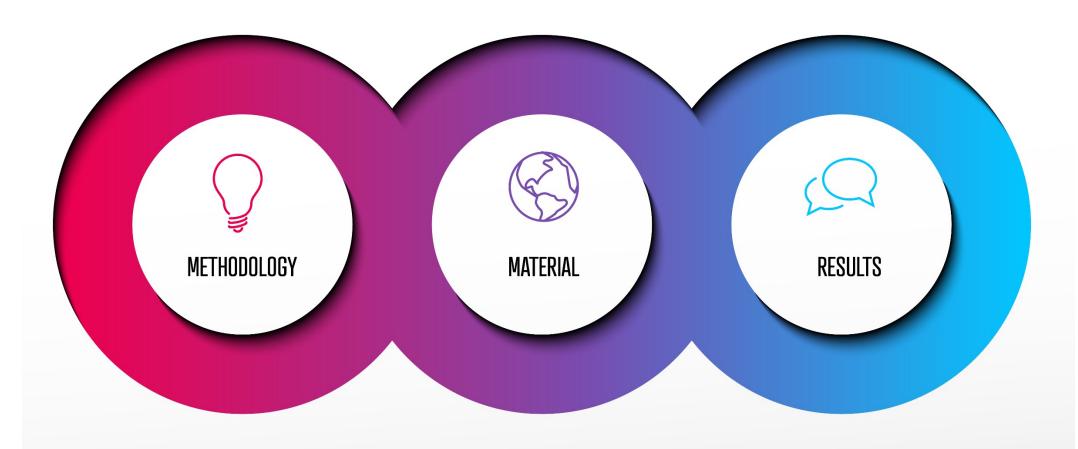
Ministry of Higher Education and Research - FRANCE

**COAR Annual Meeting 2023** 

17/05/2023 – San Jose – Costa Rica

## Open Science is not only open access to publications. It is open...





#### DOCUMENTED PROTOCOLS

All the steps of the research process, hypothesis, methodology, etc.

#### RESEARCH DATA AND SOFTWARE

Research data: genome, archeological excavation, interviews...
Code and software used to transform the research data and produce new knowledge

#### **PUBLICATIONS AND NEGATIVE RESULTS**

Publications in journals and research books
Negative results

## **Table of contents**



I. 30 years of effortII. We are we?III. Action is needed



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#### 1990'S

THE PRACTICAL DECADE

# Scholars create their open science digital tools

- ArXiv 1991
- Scielo 1998
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# The research community creates manifestos and political principles

- 2002 Budapest Open Access Initiative
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- 2020 The Principles of Open Scholarly Infrastructure



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THE PUBLIC POLICIES DECADE

Public policies are created by research performing organisations, states and international bodies

- •2007 OCDE recommandation on research data
- •2012 European recommandation
- •2016 Amsterdam call for action on open science
- •2018 French national open science plan
- •2021 UNESCO Recommandation on open science
- •2022 European Council conclusions on open science
- •2023 G7 Open science and G20



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- •2022 European Council conclusions on open science
- •2023 G7 Open science and G20

#### 2020's

THE IMPLEMENTATION DECADE

# The implementation of public policies is rising

- 2018 Coalition S
- Open Science Funds are created : SCOSS, National funds, etc.
- OpenCitations reaches 100%
- 2021 OpenAlex is created
- 2021 Open research Europe
- 2022 COARA Coalition for advancing research assessement
- ... and many initiatives that we need to coordinate

mai 23

8

## And even before...

- 1789 Déclaration des droits de l'homme et du citoyen
  - « Article 15. La Société a le droit de demander compte à tout agent public de son administration »

- 1789 Declaration of the Rights of Man and the Citizen
  - "Article 15. The society has the right of requesting an account from any public agent of its administration"





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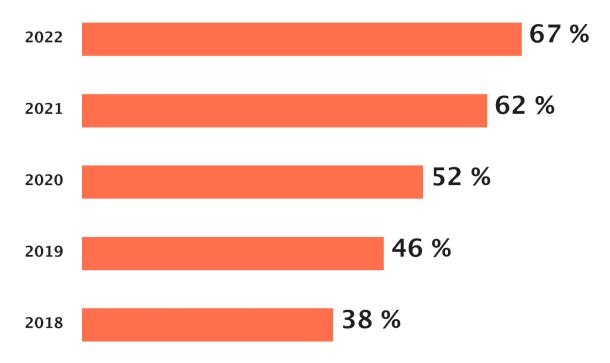


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## The trend is positive



Open access rate of scientific publications in France, with a Crossref DOI, published during the previous year by observation year



French Open Science Monitor, Sources: Unpaywall, HAL, MESR,

https://frenchopensciencemonitor.esr.gouv.fr/publications/general

# But despite more than one decade of Open Science policies...

#### **OPEN ACCESS DASHBOARD**

Open Access by country. Showing output counts, number and percentage of accessible outputs published between 2000 and 2021. You can sort and filter by region, subregion, number of publications, and open access levels. You may also search for a specific country in the search bar at the top right.



COUNTRY			<b>⊗</b> INSTITUTION		
COUNTRY	OPEN	BREAKDOWN PUBLISHER OPEN BOTH OTHER PLATFORM OPEN CLOSED	TOTAL ↓ PUBLICATIONS	OPEN PUBLICATIONS	
UNITED STATES	41% )		11 553 694	4 705 694	LEARN MORE >
CHINA	27% 💍	•	5 316 711	1 431 122	LEARN MORE >
# UNITED KINGDOM	49% )		3 200 782	1 583 408	LEARN MORE >
GERMANY	40%		2 308 805	922 700	LEARN MORE >
<ul><li>JAPAN</li></ul>	39% 🔵		2 169 367	848 552	LEARN MORE >
(*) CANADA	38% )	•	1 611 336	616 013	LEARN MORE >
INDIA	28% 🔿	•	1 421 958	402 836	LEARN MORE >
S AUSTRALIA	40%		1 397 686	553 187	LEARN MORE >
( ) ITALY	43% )		1 305 619	564 007	LEARN MORE >
S BRAZIL	65% 🔾		1 251 608	808 841	LEARN MORE >
( ) FRANCE	46% 🔵		1 175 224	544 401	LEARN MORE
SOUTH KOREA	35%		1 143 372	405 523	LEARN MORE >

https://open.coki.ac/

science.fr



# Past and future article processing charges (APC) for French institutions

Antoine Blanchard
Diane Thierry
Maurits van der Graaf

Full report: doi:10.52949/26



2013-2020

The highest growth rate is due to Springer Nature, Wiley and MDPI

x 3

The total cost of APC has tripled between 2013 and 2020

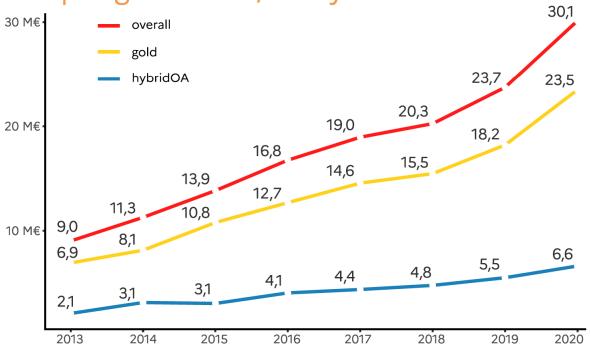
30 M€

is the estimated cost of APC for French institutions in 2020

25 %

of all articles published in France have paid APC in 2020

Data: 1 032 517 articles from BSO enriched with OpenAlex, Web of science, Couperin, QOAM



The methodology is based on known and trusted data sources, with extrapolation for missing data.

DOI: <u>10.52949/26</u>

## A recent international awareness-raising



https://sciencebusiness.net/news/Universities/leaked-eu-member-states-set-out-reform-scientific-publishing

# Leaked: EU member states set out to reform scientific publishing

28 Feb 2023 | News

Draft EU Council statement says high processing fees charged to authors are a growing problem as scientific publishing edges towards a free-to-read model. Member states want to ensure fairness and sustainability

By Goda Naujokaitytė



 EU governments are working on a joint statement on the future of open access publishing, to be adopted under the current six-month Swedish presidency of the Council of member states. The conclusions are calling for immediate and unrestricted open access publishing to be "the default mode in publishing, with no fees for authors."



# Europe's academic publishing system must become sustainable and equitable

The Guild expresses its concerns over the current financial unsustainability of the academic publishing system in Europe. The rise of open-access models requiring article-processing charges (APCs) has worsened the issue, contributing to inequalities and dissuading researchers from publishing their work in the most appropriate outlets.

https://www.the-guild.eu/news/2023/europes-academic-publishing-system-must-become-sustainable-and-equitable.html

## Let's do the maths...

# 06

# IF ALL JOURNALS SWITCH FROM SUBSCRIPTION TO APC:

- 8 million articles / year
- Publishing fee : 2 000€ / article
- 16 billions / year !

#### TRENDS:

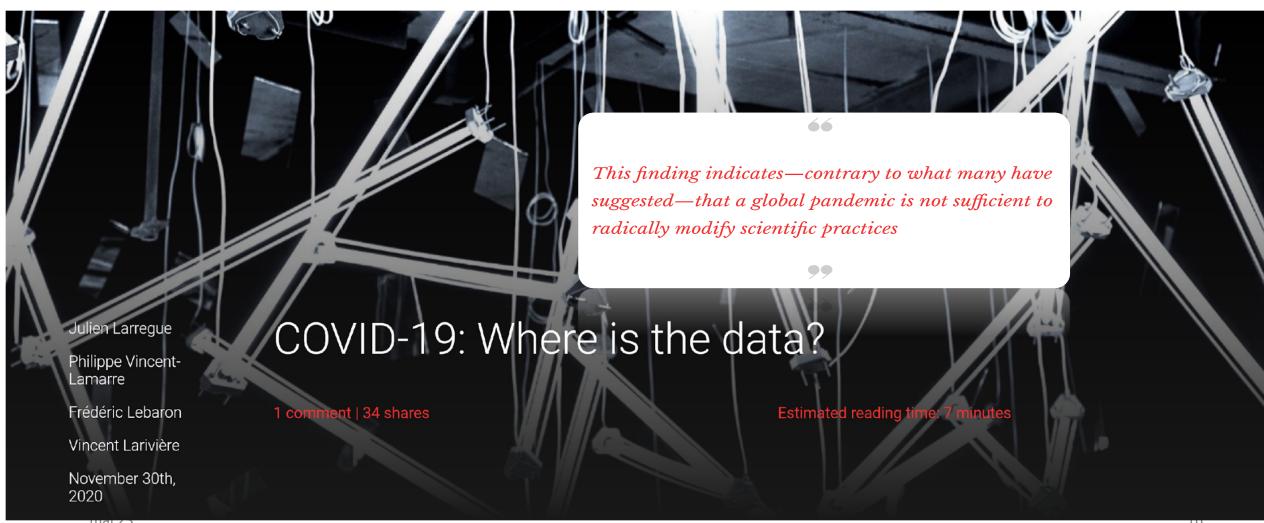
- In ten years :
  - With annual increase of 1% a year: 17,5 billions
  - With annual increase of 2,5% : 20 billions
  - With annual increase of 5%: 25 billions
- And guess what: the prices are going up by 15%/year



G20 discussions about open science in India April 2023

## **COVID-19**: where is the data?

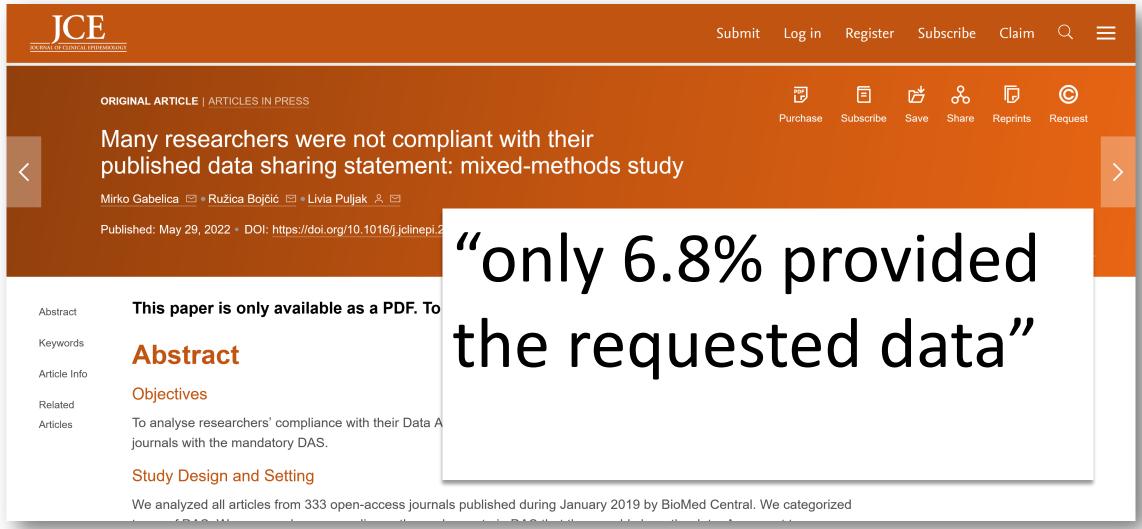




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# The FAIR data promise and the reality...





10.1016/j.jclinepi.2022.05.019

# The case of meta-analysis and the « publications bias »





Trusted evidence.
Informed decisions.
Better health.

Cochrane Reviews ▼

Trials 🔻

Clinical Answers -

About ▼

Help ▼

About Cochrane >

Q V

We noticed your browser language is French.

You can select your preferred language at the top of any page, and you will see translated Cochrane Review sections in this language. Change to French.

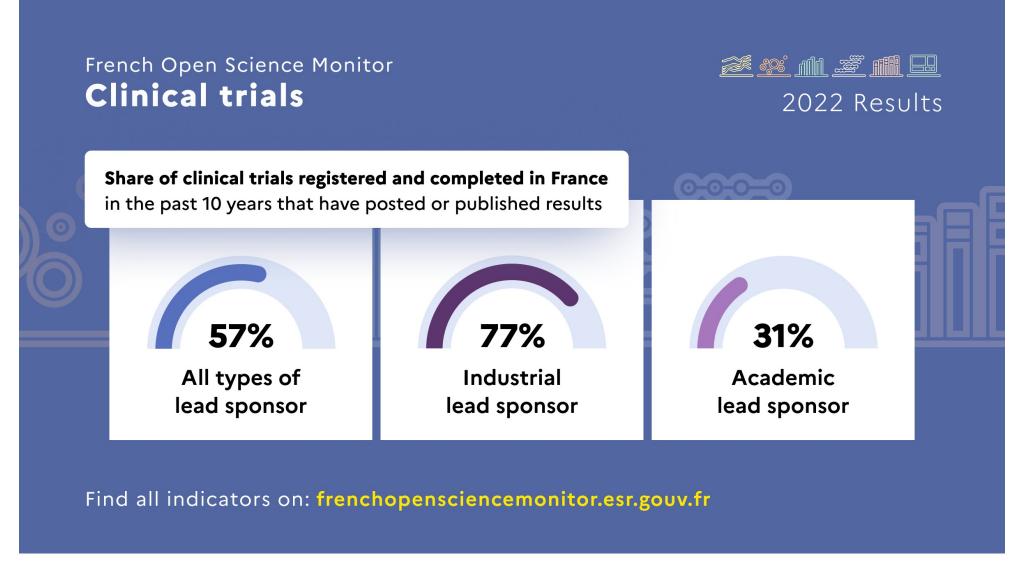






# Clinical trials : very slow progresses despite european regulation







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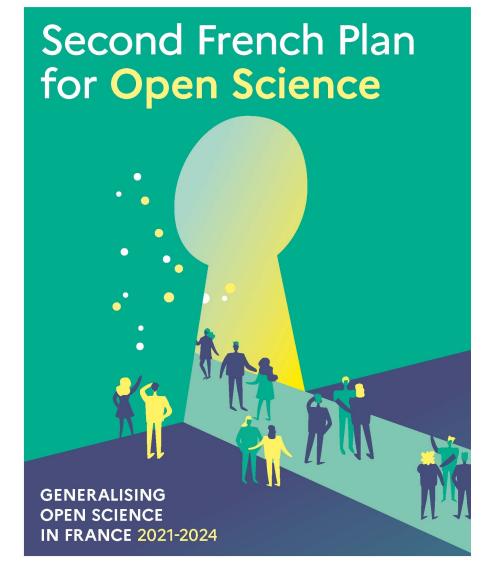


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# Build an Open Science Policy







Resulted from long exchanges with research communities and open science communities

I: Generalising open access to publications

II: Structuring, sharing and opening up research data

**III**: Opening up and promoting source code produced by research

**IV**: Transforming practices to make open science the default principle

• + Disciplinary and thematic variations: open science policies must be adapted to disciplinary specificities



# **The French Open Science Committee**

## **Open science steering committee**

Chaired by Director General for Research and Innovation
Ministry of Higher Education and Research (MESR), big Research performing
organisations, Universities, National Research Agency (ANR), Couperin
consortium, High Council for Evaluation of Research and Higher Education
(HCERES)

#### **Executive board of Open Science**

Chaired by National Coordinator for Open Science
MESR, main research performing organisations, Universities, ANR, Couperin consortium, HCERES, ADBU, EPRIST,

+ Colleges copilots

#### **Colleges and Project groups**

Chaired by experts in open science

 Colleges: 100 members from 50 institutions. Publications, Research Data, Software and Code, Skills and Training, Europe and International

2. Project groups: about dozen of topics, 100 people

#### **Decides and funds**

Makes decisions, arbitrates the use of the National Open
Science Fund

#### **Coordinates**

Prepares decisions, proposes guidelines, monitors work

#### **Provides expertise**

Investigate issues, propose guidelines, initiate and manage projects





Égalité

NSEIGNEMENT RIEUR LA RECHERCHE



# Produce high quality and mutualised services





### Partager librement les savoirs









Les plus grands organismes de recherche et la majorité des universités françaises ont choisi et soutiennent HAL, une infrastructure publique, pérenne et responsable.



#### Une vaste communauté collaborative

Des chercheur.e.s aux spécialistes de l'information scientifique, HAL fédère des compétences multiples pour soutenir l'ouverture des publications



#### Une archive, des services

HAL garantit la préservation à long terme de vos publications. Un ensemble de services (CV, portails institutionnels, collections, veille documentaire, APIs, identifiants) contribuent à leur valorisation.





Vos publications sont faciles à trouver, bien référencées par les moteurs de recherche et interconnectées avec d'autres services (ORCID, serveurs de preprint)

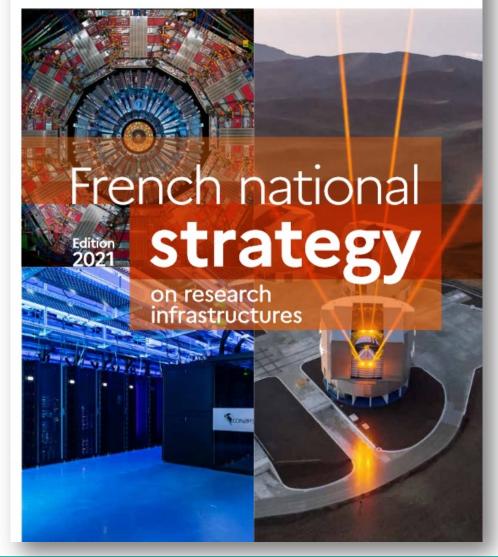


# HAL Our national repository

- A network of 141 universities and research organisations using a HAL Portal and contributing to the curation and the growth of the archive
- A non-for-profit organisation with a community-based governance
- Pooled resources (HR, IT)
- A label of Research Infrastructure
- A partnership with Software Heritage for the deposit of source code and software
- Interoperability with arXiv, REPEC
- Interoperability with peer review services (Notify protocol)
- A long term preservation solution
- Open APIs to retrieve and reuse HAL data

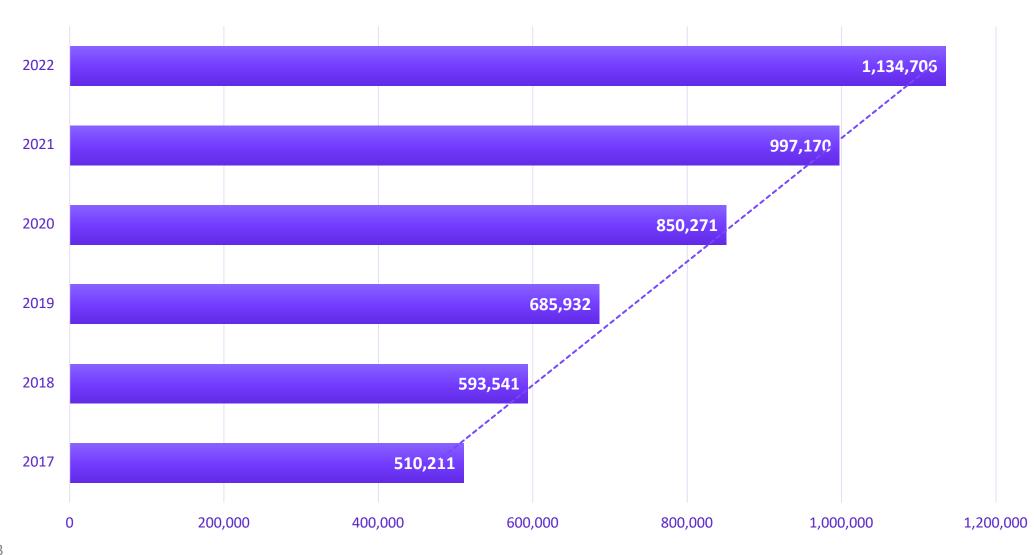






# HAL - More than 1,1 million open access publications





# **HAL**: multilingual and multidisciplinary

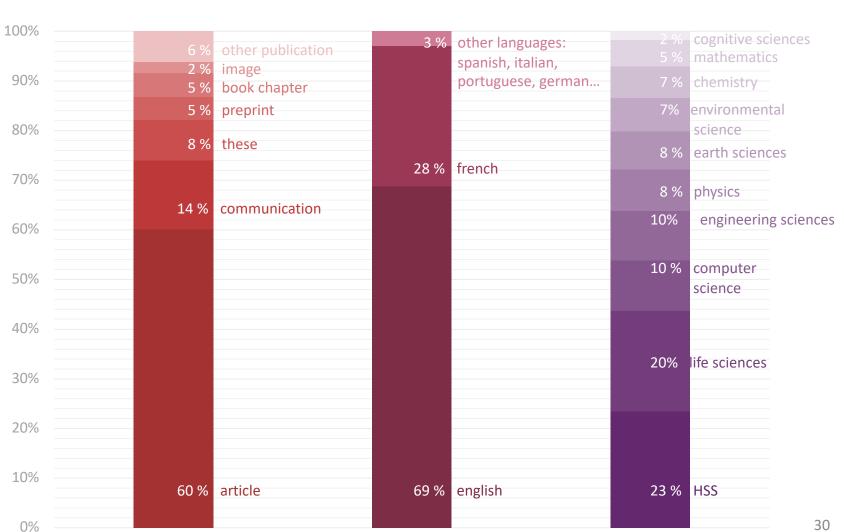
Type of document



Published and unpublished documents

 A multilingual archive

 A multildisciplinary archive



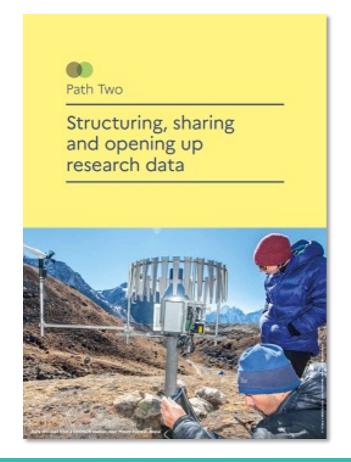
Discipline

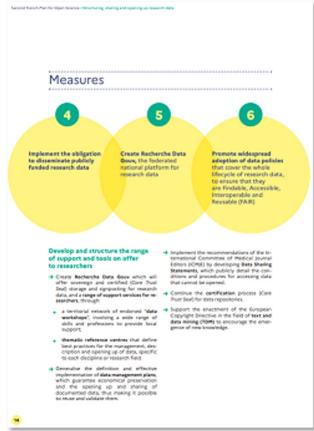
Language



## French national plan for open science

Developing and structuring support services and tools and tools for researchers





"5. Create

Recherche Data Gouv

which will offer sovereign and certified storage and signposting for research data, and a range of support services for researchers"



# Recherche Data Gouv Data management clusters





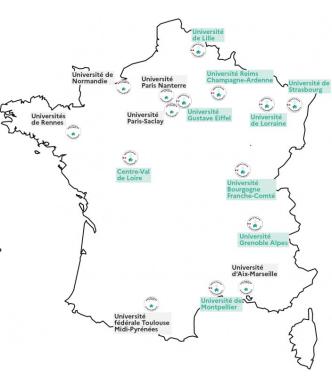
recherche.data.gouv.fr

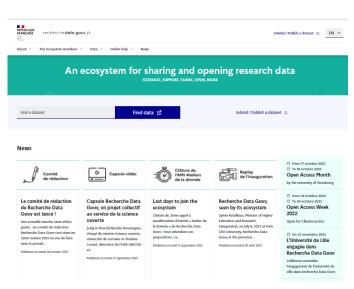


Shared services and skills for organisations from a given territory

These clusters are progressively developed

- As they are designed by the universities involved
- Following successive calls for expressions of interest









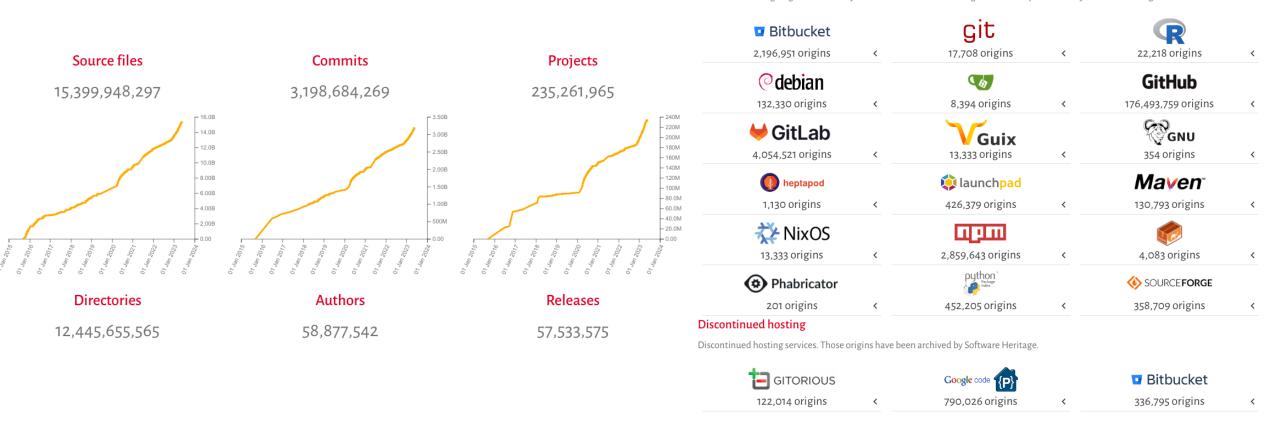
building the *Universal Source Code Archive* and the *Software Pillar of Open Science* 





#### Regular crawling

These software origins get continuously discovered and archived using the listers implemented by Software Heritage.







+1,1 million documents, + 96 % in Open Access

OpenEdition Journals

600 online journals



14 000 books124 publishers

**Q** hypotheses

4 400 academic blogs



50 000

academic event announcements





## https://www.centre-mersenne.org/

#### THE CENTRE MERSENNE ▶

# An open access publishing platform for scientific publications.

The centre Mersenne is a diamond open access scientific publishing infrastructure developed by Mathdoc, a support and research unit of CNRS and Université Grenoble Alpes. The centre Mersenne provides all the publishing tools and services that enable editorial teams to manage, produce and distribute their publications.

The journals, books, proceedings or seminars are from all scientific disciplines, composed in LaTeX and distributed in open access.





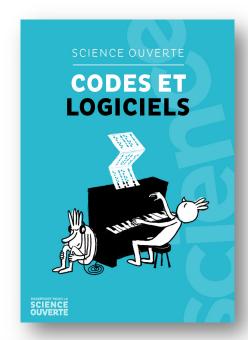
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# Produce and promote practical open science guides















#### An example of recommandation





Il est recommandé de ne pas confier les données à partager aux éditeurs des revues qui proposent de les publier sous forme de «supplementary data» ou de «supplementary materials» associés à l'article. Une telle publication se fait encore souvent dans un format et un environnement qui ne permettent pas de documenter correctement les données et rendent difficile leur réutilisation. Elle peut aussi s'accompagner d'une demande de transfert exclusif de droits contraire à la loi française et à l'esprit de la science ouverte. Enfin, dans certains cas, elle contribue à rendre les utilisateurs captifs au sein d'environnements maîtrisés par de grands acteurs commerciaux de l'édition scientifique.

« It is recommended that the data to be shared <u>should not be given to publishers of journals</u> that offer to publish them as supplementary data or "supplementary data" or "supplementary materials" associated with the article. »





#### How to coordinate the open science players?





ET DE LA RECHI Liberté Égalité



## Time for international coordination

## The Council for National Open Science Coordination (CoNOSC)

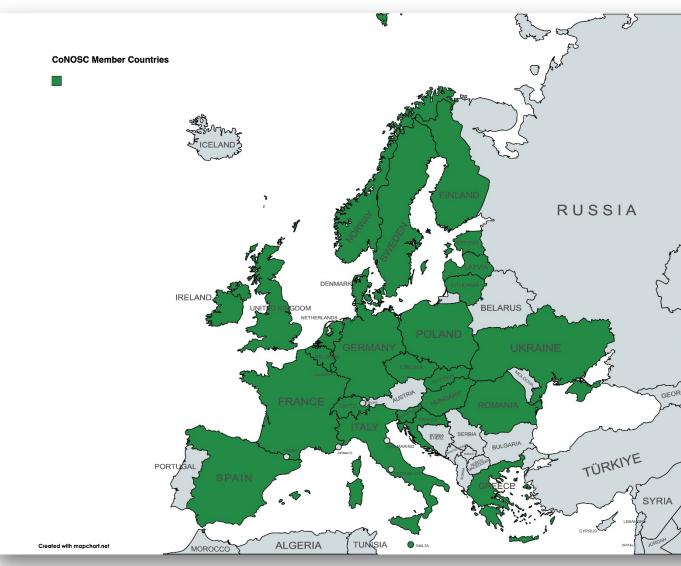


A network of national Open Science coordinators, created by France, Finland and Netherland

The first objective is to have an open science coordinator for each country!

"We help countries <u>create</u>, <u>update</u>, and <u>revise</u> their open science policies to empower the research community to embrace and smoothly implement openness in their everyday practice"

At this time, it is a European initiative. It could be open to more continents, by one way or another.



#### **EU Council Conclusions** on Open Science 2021

"Under French Presidency, the ministers adopted conclusions on research assessment and implementation of open science. In the conclusions, the Council has given political impetus for joint action to be taken in three key areas:

- reform of research assessment systems,
- capacity building for academic publications,
- and the promotion of multilingualism as a means of communicating and disseminating the results of scientific research."



FR EN DE 👨 🔾

#### Conclusions of the Competitiveness Council (Research and space)





Competitiveness Council (Research and space

#### Main results

#### Research and space, 10 June 2022

#### Principles and values for international cooperation in research and innovation

Ministers adopted conclusions on principles and values for international cooperation in research and innovation. The Council emphasised that international cooperation is of paramount importance in order to enhance the impact of research and innovation in addressing major global challenges. In the context of current Russian military aggression against Ukraine, the Council has added a statement to the conclusions deploring the Ukrainian crisis and its impact on research and innovation

European research area (background information) [2]

Horizon Europe (background information)

#### Open science

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EU space policy (background information)

#### **European missions**

Ministers adopted conclusions on European missions. In these conclusions, the Council provide guidance on the framework for the implementation of the European missions, in particular concerning between funding programmes.

Watch the recording of the public debate ₽

Council provides political guidance on international cooperation, open science and European missions

#### Supporting young researchers in times of crisis

The Council held a policy debate on ways to support young researchers in times of crisis and, more generally, how to ensure good working conditions and long-term career prospects for them once an emergency situation is over.

A number of ministers described the difficulties young researchers face in their countries. These difficulties have been aggravated by current crises such as the COVID-19 pandemic and the Russian aggression against Ukraine. To ensure support for young researchers, the Council noted the importance of coordinating actions at European level to promote the sustainable development of scientific careers.

Most ministers stressed the need for safety nets to prevent the harmful effects of future crises. These actions should not be limited to research alone but should also cover other sectors, including social, employment and education policies.

Watch the recording of the public debate ♂

#### **COARA**





About

Agreement >

Coalition ~

vs Resources

Contact



## Coalition for Advancing Research Assessment

Our vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research. This requires basing assessment primarily on qualitative judgement, for which peer review is central, supported by responsible use of quantitative indicators.

https://coara.eu/

## Born in Europe, with 500 members, COARA is open to worldwide members





Miembros de CoARA POR PAÍS

## There are many ways of working together



- Your institution can join COARA
- COARA can welcome so-called « National Chapters ».
- And we can discuss the possibility for COARA to discuss with continental organisations about research assessment when they exist

Whatever the way, we need to work together!



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## The G7 communiqué

The results of 4 years of the G7 Open Science Working Group

mai 23

#### **G7** Science and Technology Ministers commit to





ho 2023.5.12friho 24 sun



## **G7** Science and Technology Ministers commit to Open Science



## Research assessment reform



Transform the research evaluation system to encourage open science, <u>valuing a greater</u> diversity of types of research results, activities and practices and more diverse career paths.

Raise awareness and provide leadership to promote open science practices;

<u>Develop open and transparent scientific</u> <u>indicators</u> that could be used for research evaluation;

P<u>rovide the necessary infrastructure</u> and <u>s</u>upport for open science practice to support research assessment;

<u>Provide training</u> to enable researchers to practice open science and support the development and responsible use of indicators.

mai 23 49

## **G7** Science and Technology Ministers commit to Open Science



## Open science infrastructures



- a) Promote international cooperation on open science infrastructures, building on existing cooperative efforts and exploring new opportunities within the G7 and beyond;
- b) Define and adopt common principles and practices for open science infrastructures to improve interoperability and promote data accessibility while respecting security and privacy requirements.

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## **G7** Science and Technology Ministers commit to Open Science



## Research on research and open science



- deepen open science research at the international level, and strengthen coordination and knowledge sharing;
- use research on research to inspire a framework fro open science monitoring;
- develop a 'state of knowledge' on research on research, to inform policy and decision-making, by coordinating existing research and stimulating new research.

These actions could be coordinated through an international initiative on research on research



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## How to encourage and promote open science?

Some small steps for humanity

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## Open science prizes highlight and create value for good open sciencce best practices







https://www.enseignementsup-recherche.gouv.fr/fr/prix-science-ouverte-des-donnees-de-la-recherche-86179

https://www.enseignementsup-recherche.gouv.fr/fr/remise-des-prix-science-ouverte-du-logiciel-libre-de-la-recherche-83576

#### Some concrete steps at European level



- 1) 2021 for Horizon Europe grants evaluation :
  - open science was a criteria of "implementation"
  - It becomes a criteria of "excellence" evaluation criterias
- 2) 2023 ERC European Research Council
- Introduction of <u>narrative CV</u> with up to <u>ten</u> <u>research outputs</u>



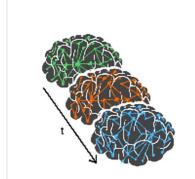


https://erc.europa.eu/news-events/news/evaluation-erc-grant-proposals-what-expect-2024

## Some other concrete data valorisation: data editorialisation



#### To discover



13 avril 2023

#### **Temporal Brain Networks**Collection of temporal brain

networks obtained from resting state fMRI data



12 avril 2023

#### Pedestrian inertial navigation dataset with wearable sensor

The development of a state-ofthe-art system for pedestrian inertial navigation.

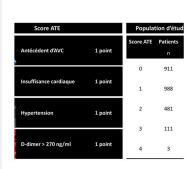


07 avril 2023

#### Monthly rainfall and temperature grids - Rhine-Meuse

basin - 1860-2019

Climate database linked to precipitation and temperature observations in the Rhine-...



06 avril 2023

#### Creation of a clinico-biological score for the exclusion of...

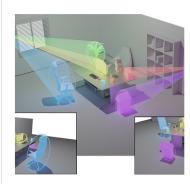
Finding new non-invasive diagnostic methods in cardiology.



10 février 2023

#### Inclusive practices in mathematics class, in ULIS collège (special...

Inclusive middle schools and ULIS programs: a mathematical sequence about fractions...



24 février 2023

#### 3D-Aware Ellipses for Visual Localization

Detect the shape of objects in an image



https://recherche.data.gouv.fr/en/datasets









recherche.data.gouv.fr

Home > Datasets > Pedestrian inertial navigation dataset with wearable sensor

#### Pedestrian inertial navigation dataset with wearable sensor



Updated at: 12/04/2023

The development of a state-of-the-art system for pedestrian inertial navigation.

This pedestrian inertial navigation dataset contains 6 realistic tracks collected by two volunteers in diverse environments (campus, office building, city, woods, and parking lot in a shopping mall), totaling over 2 km walking distance.

The data are recorded with "ULISS", a device developed by laboratory GEOLOC, a state-ofthe-art inertial navigation system enclosing an Xsens Mit-7 IMU-Mag sensor, an atmospheric pressure sensor BMP280, and a dual frequency GNSS receiver, providing acceleration,

Home > Datasets > Analyze the issues of a legislative debate through the lens of parliamentary questions

#### Analyze the issues of a legislative debate through the lens of parliamentary questions



Updated at: 09/02/2023

The constitution of a dataset on parliamentary questions makes it possible to analyze the issues that run through a legislative debate on posted labor in France. Analyzed by means of a textual analysis, it highlights the reasons for the positions taken by parliamentarians on this public policy issue.

Our database gathers the questions asked in the National Assembly on the posting of https://recherche.data.gouv.fr/en/dataset/analyze-the-issues-of-a-legislative-debate-through-the-len parliamentary-questions

#### And starting citing data now! Not later





Home > Blog > Start citing data now. Not later

(2) 6 minute read.

#### Start citing data now. Not later



Geoffrey Bilder – 2023 March 23
In Metadata, Citation, Data Citation, Research Nexus

Recording data citations supports data reuse and aids research integrity and reproducibility. Crossref makes it easy for our members to submit data citations to support the scholarly record.

#### TL;DR

Citations are essential/core metadata that all members should submit for all articles, conference proceedings, preprints, and books. Submitting data citations to Crossref has long been possible. And it's easy, you just need to:

- Include data citations in the references section as you would for any other citation
- Include a DOI or other persistent identifier for the data if it is available just as you would for any other citation
- Submit the references to Crossref through the content registration process as you would for any other record



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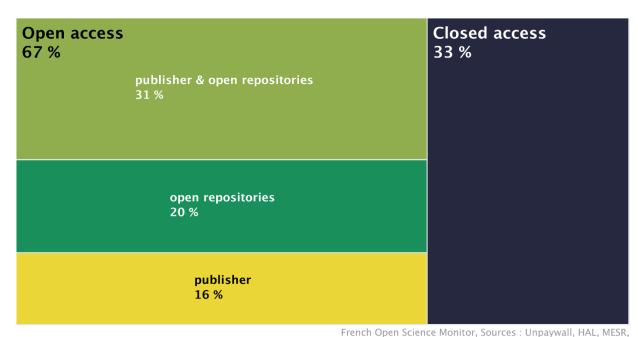
### Open Access to publications

Some actions

#### What is the proportion of diamond publications for French researchers? (it's not about French publishers)



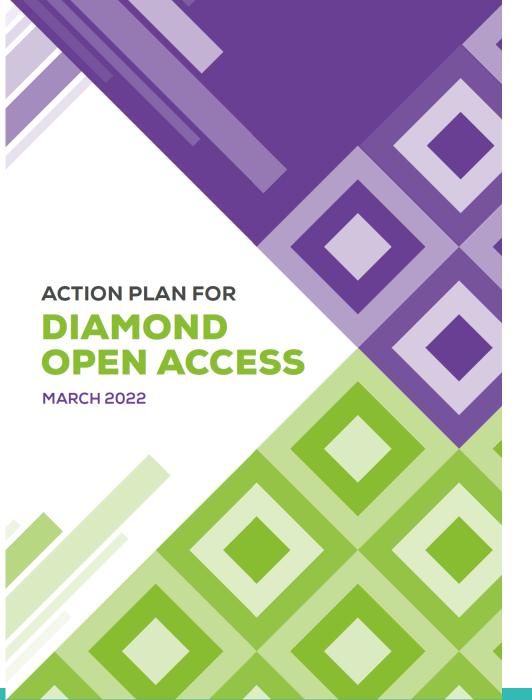
Distribution of scientific publications in France, with a Crossref DOI, published in 2021 by opening route (observed in 2022)



Distribution of business models for articles published in 2021 and distributed in open access by their publisher



French Open Science Monitor, Sources: Unpaywall, HAL, MESR,





Science Europe, cOAlition S, OPERAS, and the French National Research Agency (ANR) present this Action Plan to further develop and expand a sustainable, community-driven Diamond OA scholarly communication ecosystem.

It proposes to align and develop common resources for the entire Diamond OA ecosystem, including journals and platforms, while respecting the cultural, multilingual, and disciplinary diversity that constitutes the strength of the sector.

https://www.scienceeurope.org/our-resources/action-plan-for-diamond-open-access/





- 1. Diamond OA publication system for the public good
- 2. Research assessment
- 3. Efficiency and partnerships
- 4. Principles and definitions Diamond OA
- 5. Interoperability and infrastructures

- 6. Governance global federation
- 7. Good practices in policy development
- 8. Quality of processes/monitoring
- 9. Way forward



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### Open Science Monitoring

A necessary tool to develop open science policies

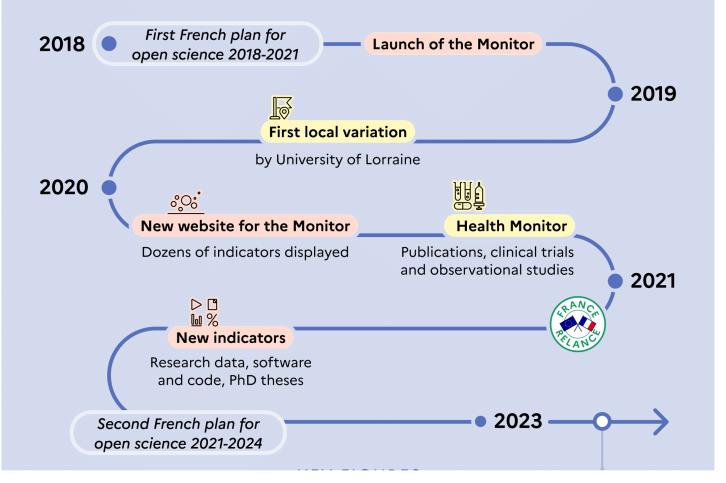
A 3rd generation of open science monitoring using artificial intelligence - Al



#### **French Open Science Monitor**

frenchopensciencemonitor.esr.gouv.fr

The tool which measures the evolution of open science in France using reliable, open and controlled data.





## How to monitor a data policy? A methodological challenge



- No global data catalogue
- Data repositories exist, but they only cover part of the disciplines: GenBank, Elixir, etc.
  - Consequently, there is no tool for knowing the status and availability of data associated with scientific results produced by research
- As a result, open science policies are blind
- In the worst case, we count the number of repositories



Licence CC - https://www.flickr.com/photos/91029339@N00/6751047205

## What methodology should be adopted?

- Mobilise resources: application to the Recovery Plan (€500K)
- 18-month R&D approach based on deep learning, on a technological base developed over a decade
- Preferred source: publications
  - Publications are the object that is most invested in by the actors, the place where the greatest care is taken to highlight the methodology and results.
  - They constitute a privileged and unique place of observation.



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En partenariat avec







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## Examples of data <u>production</u> mentions automatically detected



Doi:10.1175/bams-d-13-00017.1

#### **Example 1**

In particular, data were collected on the vertical distributions of aerosol chemical composition and trace gas species throughout the free troposphere and lowermost stratosphere during spring and summer 2008. These data have been used, and

#### **Example 2**

#### Data collection

The data for the CRF (Case Report Form) will be collected and recorded by the Clinical Research Assistant (CRA) from the patients' medical files.

#### **Example 3**

DOI:10.1186/s12877-016-0402-3

anti-Otx2 antibody (<u>Fig. 1A</u>). Two pairs of independent sets of data were generated, thereafter referred to as the GFP and the WT assays (<u>Fig. 1A</u>). A preliminary description of RPE Otx2-

## **Examples of data <u>sharing</u> statements** automatically detected



The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XLIII-B2-2020, 2020 XXIV ISPRS Congress (2020 edition)

Finally, other fusion strategies could be considered in order to give more freedom to the network to learn specific behaviors associated to each kind of input data. For example, attentional models could be used to focus more specifically on one sensor or the other based on image characteristics such as cloud cover, noise or environmental properties.

#### 6. CONCLUSION

In this paper we presented a new dataset composed of optical and SAR images for the detection of flood events in time series. We also proposed a baseline for multitemporal classification of floods based on spatial-temporal porcessing by residual and GRU networks. Our experiments show the interest to consider both of these modalities for this task. Future work may include the search for better fusion strategies as well as the efficient processing of multispectral data. The SEN12-FLOOD dataset as well as the code of the proposed approach can be downloaded at https://clmrmb.github.io/SEN12-FLOOD.

#### 7. ACKNOWLEDGMENT

Radar data were provided by the European Space Agency (ESA) through to the Copernicus program. We would like to thank the MediaEval Benchmarking Initiative for Multimedia Evaluation and in particular Benjamin Bischke for the original Sentinel 2 dataset.

Gao, B., 1996. NDWI—A normalized difference water index for remote sensing of vegetation liquid water from space. *Remote Sensing of Environment*, 58(3), 257 - 266.

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Gómez-Chova, L., Tuia, D., Moser, G., Camps-Valls, G., 2015.Multimodal Classification of Remote Sensing Images: A Review and Future Directions. *Proceedings of the IEEE*, 103(9), 1560-1584.

He, K., Zhang, X., Ren, S., Sun, J., 2015. Deep Residual Learning for Image Recognition. 2016 IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 770-778.

Miranda, N.; Meadows, P., 2015. Radiometric Calibration of S-1 Level-1 Products Generated by the S-1 IPF, ESA-EOPG-CSCOP-TN-0002.

Nico, G., Pappalepore, M., Pasquariello, G., Refice, A., Samarelli, S., 2000. Comparison of SAR amplitude vs. coherence flood detection methods - a GIS application. *Inter-*

#### **Cell Reports**



Volume 25, Issue 12, 18 December 2018, Pages 3299-3314.e6

Article

Fasting Imparts a Switch to Alternative Daily Pathways in Liver and Muscle

Data and Software Availability

The GEO accession number for the RNA-seq data reported in this paper is GSE107787 ≥.

https://doi.org/10.1016/j.celrep.2018.11.077

https://doi.org/10.5194/isprs-archives-XLIII-B2-2020-1343-2020

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Othorse !

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### First results

Warning: beta version

https://frenchopensciencemonitor.esr.gouv.fr/



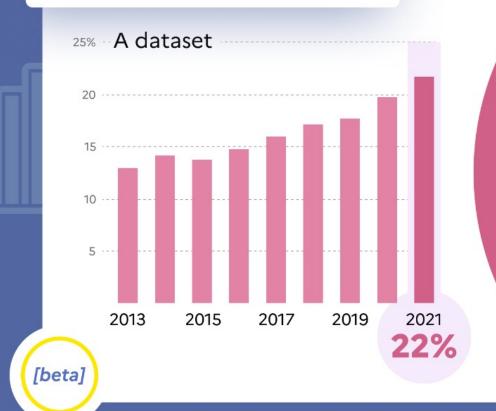
#### French Open Science Monitor

#### Research data





#### Proportion of publications that share:



Amongst French
publications in 2021
mentioning the production
of data, 22% are referring
to sharing a dataset.

This indicator was created via artificial intelligence by the Ministry of Higher Education and Research.

Find all indicators on: frenchopensciencemonitor.esr.gouv.fr

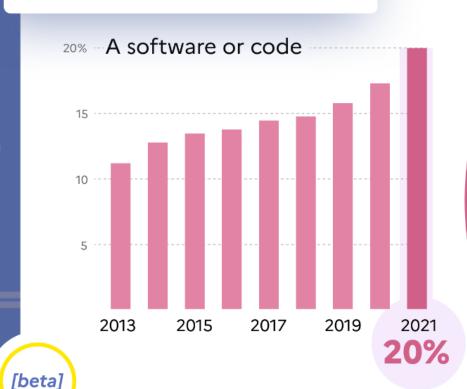
#### French Open Science Monitor

#### Software and code





#### Proportion of publications that share:



20% of French publications published in 2021 share their software or code.

This indicator was created via artificial intelligence by the Ministry of Higher Education and Research.

Find all indicators on: frenchopensciencemonitor.esr.gouv.fr



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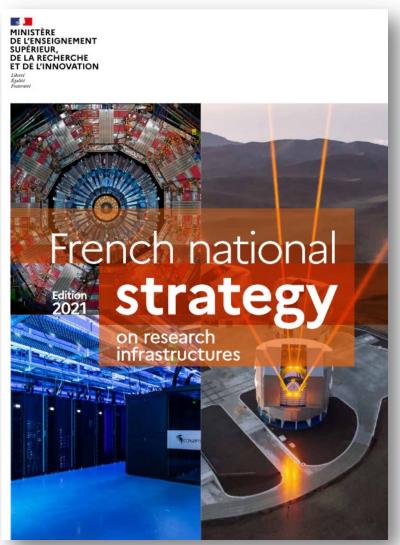


The initial sin: the The issue for « death star » (pay to publish)

open science infrastructures: the free rider

#### Funding open science infrastructures





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## **SCOSS**: Global Sustainability Coalition for Open Science Services





# Global Sustainability Coalition for Open Science Services (SCOSS)

#### **Challenge:**

Many open infrastructures were created using short-term project money and are no longer sustainable. OA & OS infrastructure has grown in number and usage.

Funding for operations neglected.

**Risk:** Services risk stagnation, downsizing or paywalling

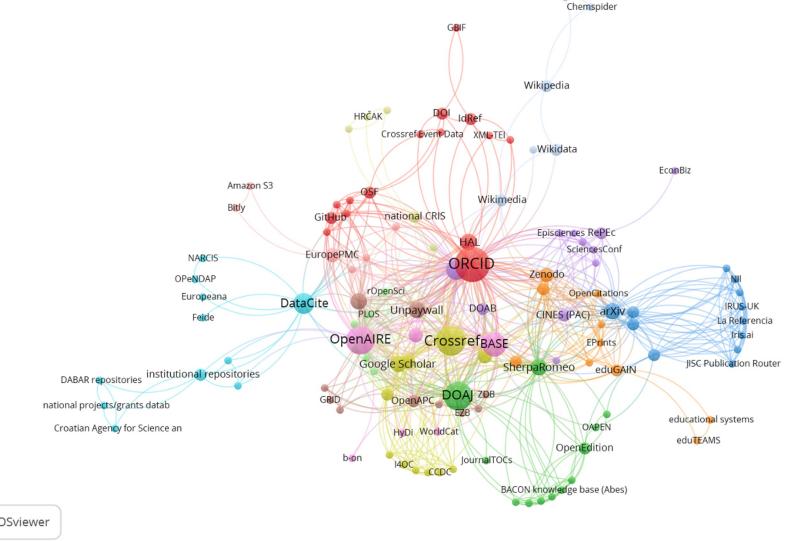
We want an equitable and inclusive research culture.

**Aim:** Helping sustain the infrastructure to support the implementation of OS

Officially formed in early 2017, SCOSS's purpose is to provide a new co-ordinated cost-sharing framework that will ultimately enable the broader OA and OS community to support the non-commercial services on which it depends



#### Interdependencies





Ficarra, Victoria, Fosci, Mattia, Chiarelli, Andrea, Kramer, Bianca, & Proudman, Vanessa. (2020, October 30). Scoping the Open Science Infrastructure Landscape in Europe. Zenodo. http://doi.org/10.5281/zenodo.4159838, p32

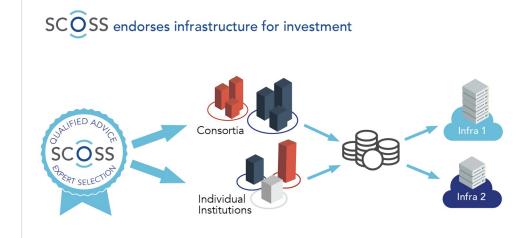


## What SCOSS do

## Community-led and governed A consolidated voice that vets OS not for profit infra before recommending it for funding to help infra on unstable footing

- Assess funding needs
- **Alert funding needs** to the community
- Provide **more transparency on costs**
- **Increases efficiency** for investors
- ! Strongly encourage good governance!

#### Not a subscription or payment agency





## Funding decisions from National Open Sciece Fund - 2023



Infrastructure	Object	Total amount of money asked	French Funding
Infrastructures of the 4th AMI SCOSS			
LA Referencia	Latin American Open Archives Network	268 K€	50 K€
ROR	Repository of identifiers for research organisations	987 K€	50 K€
Post SCOSS programme funding			
DOAB	Directory of open access books		20 K€ / year
Open Citations	Open bibliographic and citation data		75 K€ / year
		Total 2023	195 K€

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#### The National Open Science Fund



- Call for projects 2 to 3M€ each
- The call aims to:
  - Foster the conversion of existing editorial content towards an open access digital dissemination;
  - Reinforce and structure open access publishing resources, foster the trend towards editorial quality standards;
  - Foster financial models diversity of open access publishing and restore a balance in favour of the diamond OA model. Projects depending on transparent and reasonable publication fees can also be supported in the scope of this call;
  - Foster a continuum between publication, data and codes;
  - Foster reproducibility or traceability of the scientific method, integrity, and fight against publication bias by supporting the publication of negative results;
  - Support innovating editorial processes, e.g. in regards to peer reviewing, collaborative writing, etc.



# Call for projects Open scientific and scholarly publishing (3rd edition)

The scope of the Open scientific and scholarly publishing (3rd edition) call for projects covers publishing, open publication and its ecosystem.

## Next step: create a new funding mechanism for the publishing activity



« More and more academics and governements consider that the open access model based on Article Processing Charges (APC) is problematic, not only due to the inequalities it generates and reinforces, but also because it has become unsustainable and even opposed to open access values. They consider that scientific publishing based on a model where both authors and readers do not pay – the so-called Diamond, or non-APC model – should be developed and supported. This article explores the practical conditions to implement a direct funding mechanism to such journals, that is reccurent money provided by a funder to support the publication process. Following several recommendations from institutional actors in the open access world, we consider the hypothesis that such a funding would be fostered by research funding organizations (RFOs), which have been essential to the expansion of the APC model, and now show interest in supporting other models."



New Results

Supporting diamond open access journals. Interest and feasibility of direct funding mechanisms

Quentin Dufour, David Pontille, Didier Torny doi: https://doi.org/10.1101/2023.05.03.539231

This article is a preprint and has not been certified by peer review [what does this mean?].

Abstract Full Text Info/History Metrics

#### Abstract

More and more academics and governements consider that the open access model based on Article Processing Charges (APC) is problematic, not only due to the inequalities it generates and reinforces, but also because it has become unsustainable and even opposed to open access values. They consider that scientific publishing based on a model where both authors and readers do not pay – the so-called Diamond, or non-APC model – should be developed and supported. However, beyond the display of such a support on an international scale, the landscape of Diamond journals is rather in the form of loosely connected archipelagos, and not systematically funded. This article explores the practical conditions to implement a direct funding mechanism to such journals, that is reccurent money provided by a funder to support the publication process. Following several recommendations from institutional actors in the open access world, we consider the hypothesis that such a funding would be fostered by research funding organizations (RFOs), which have been essential to the expansion of the APC model, and now show interest in supporting other models. Based on a questionnaire survey sent to more thant 1000 Diamond

https://www.biorxiv.org/content/10.1101/2023.05.03.539231v1



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#### Another 30 years?



2020'S

100% OPEN ACCESS?

2030'S

**NEGATIVE RESULTS?** 

2040'S

RESEARCH DATA SHARING?

## We do not know the pace of the open science progress



- For publications,
  - ...it seems to be 5 to 10 points / year...
- For data sharing and software sharing,
  - ... maybe 1 point / year...
- For change of the assessment culture,
  - do we see any progress yet? Probably not.
- Resistance is very high,
  - Confidentiality of decisions mechanisms and discussions is strong.
  - Competition still rules before cooperation and sharing.
  - Vanity publishing rules





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# The only way to wait less than another 30 years is to work together as a global coalition!

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#### Thank you!









#### www.ouvrirlascience.fr [in English and French]

https://frenchopensciencemonitor.esr.gouv.fr/

- Marin.dacos@recherche.gouv.fr
  - @marindacos [french]
  - @openmarin [english]