Open Science
in Horizon Europe

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March 2021

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How to describe Open Science?

- Many definitions

- 'Open science refers to a new approach to the scientific process based on **cooperative work** and **new ways of disseminating knowledge**, improving **accessibility to and re-usability** of research outputs by using digital technologies and new collaborative tools.' (Commission Recommendation (EU) 2018/790)

- **'open science'** means an approach to the scientific process based on **open cooperative** work, tools and **diffusing knowledge** (Horizon Europe Regulation)

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Why do we need Open Science?

Open Science means sharing knowledge and tools as early as possible, not only between researchers and between disciplines, but also with society at large

Open Science has the potential to increase:

- **Quality** and **efficiency** of **R&I**, if all the produced results are **shared**, **made reusable**, and if their **reproducibility** is improved;

- **Creativity**, through collective intelligence and cross-disciplinary research that does not require laborious data wrangling;

- **Trust** in the science system, **engaging both researchers and citizens**.

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The EU policy on Open Science

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Main challenges and priorities

Improve the practice of R&I

- **Freely accessible** scientific publications
- **Early sharing** of all research outputs
- All data **FAIR**
- **Reproducible** results
- **Societal engagement** and **responsibility**

Develop proper enablers

- **Infrastructures** (including EOSC)
- A research system that **rewards and incentivizes** researchers to adopt Open Science practices, with **appropriate metrics**
- Appropriate **skills and education**, including for research integrity

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How do we support open science?

- **Funding Programmes: Horizon 2020 and Horizon Europe**
  - Requirements for open access and open science
  - Funding for the uptake of such policies in MS
  - Funding for the development interoperable infrastructures to support open access and open science at the European level

- 2018 **Recommendation** on access to and preservation of scientific information, 2019 Open Data **Directive**, 2019 Directive on copyright in the Digital Single Market, …

- **Engaging with stakeholders and gathering their expertise**

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"[The question of Open Science] is dear to me and I will work on it. Now more than ever, we need researchers to be able to share the results of their projects with others, so that they can capitalize on the research of others.

(…) I will insist on having data that are simply reusable, accessible, of quality.

Today we still have a lot to do. I am thinking, for example, in the European research framework, about how to encourage researchers who support Open Science, who support open access by making efforts that others do not make?"

Hearing of Commissioner-designate Mariya Gabriel at the European Parliament, 30 September 2019

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Lessons learned from Horizon 2020

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Projects

	About us	Services	Projects and expertise	Methods	Clients	Team	Career	Contacts

client: Directorate-General for Research and Innovation (DG RTD), EC
year: 2020 – ...
status: Ongoing

Monitoring Open Access Policy of Horizon 2020

The **objectives of the study** are the following:

1. Measure the uptake of open access publications by Horizon 2020 beneficiaries and compliance to the requirements set in Article 29.2 of the Horizon 2020 MGA.

2. Measure the uptake of the Open Research Data Pilot in Horizon 2020 and compliance to the requirementsset in Article 29.3 of the Horizon 2020 MGA.

3. Provide the Commission advice and a process through which to monitor compliance to the policy in the future.

4. Assess the progress of the Horizon 2020 open acess policy to date and provide lessons learned and recommendations for the future.

The services to be provided under this contract are structured into four tasks that respond to these objectives. More specifically **the key activities** to implement the study objectives will include:

- Specify a set of indicators for assessing the H2020 open access to publications and data (ORD), its uptake and implementation, related methodologies for data collection, computation and analysis, and identify the most relevant and reliable data sources for each of indicators ensuring data quality including flexibility in the proposed approach to allow for a prompt adaptation of the indicators and related methodologies for data collection and computation if needed. (Tasks 1 and 2).

- Using state-of-the-art research metrics, open data and open technologies the study will follow a comprehensive multi-stage approach to systematising and improving the monitoring activities of the OA policy in Horizon 2020 and Horizon Europe in terms of both content and process(Task 3).

- Formulate the landscape and the intervention logic of the H2020 open access policy as regards to the objectives, expected impact, actors, expected cause-and-effect relationships. Run two parallel assessment exercises in terms of efficiency and effectiveness of the H2020 open access policy (Task 4).

The project is implemented by a consortium of three partner organisations: Athena RC, PPMI Group and UNU-MERIT
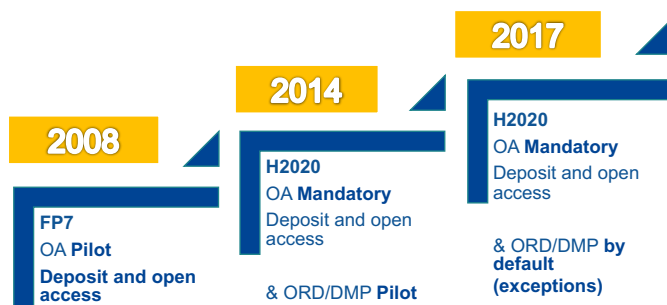
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Open Science in Horizon Europe

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Evolution of the policies across the FPs

2008

FP7
OA **Pilot**
Deposit and open access

2014

H2020
OA **Mandatory**
Deposit and open access

& ORD/DMP **Pilot**

2017

H2020
OA **Mandatory**
Deposit and open access

& ORD/DMP **by default (exceptions)**

Under **Horizon Europe (2021)**:

- Open Science (**OA**, **RDM**, **citizens engagement** etc.) embedded throughout HE. OS to play a role in:
  - **Evaluation** of proposals (methodology)
  - **Grant Agreement**
  - **Reporting**—during the project's lifetime
- **Strengthening of the obligations** with respect to OA, and focus on **responsible RDM in line with FAIR**

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Horizon Europe legal basis

European Commission | Funding & tender opportunities
Single Electronic Data Interchange Area (SEDIA)

SEARCH FUNDING & TENDERS ▼ | HOW TO PARTICIPATE ▼ | PROJECTS & RESULTS | WORK AS AN EXPERT | SUPPORT ▼

Programming period
2021-2027

Horizon Europe (HORIZON) ✕

Clear filter

Reference Documents

Grants

This page includes reference documents of the programmes managed on the EU Funding & Tenders portal starting with legal documents and the Commission work programmes up to model grant agreements and guides for specific actions.

Please select the programme to see the reference documents.

Procurement

Reference Documents related to tendering opportunities are published on TED eTendering in the calls for tenders.

Filter   ⤢ Expand all

⊖ Legislation
  Programme basic act – This document reflects the provisional political agreement reached by the European Parliament and the Council on the European Commission proposal establishing Horizon Europe, incl... >
  EU Financial Regulation >
⊕ Work programme & call documents
⊖ Grant agreements and contracts
  HE General MGA v1.0 >
  Operating Grants MGA v1.0 >

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/reference-documents;programCode=HORIZON

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OA to peer-reviewed publications

- Obligation to **ensure deposition** at the time of publication in a **repository** + **immediate open access through repository**

- Beneficiaries/authors must **retain sufficient IPR** (to comply with OA requirements) and are required to **use open licenses** [**CC BY** (or equivalent) for journal articles, **CC BY-NC/ND** (or equivalent) allowed for long-text formats (relevant to SSH)

- Beneficiaries **publish in venues of their choosing**. Any **publication fees (APCs/BPCs) only refundable** if publishing venue is **full open access** (costs non-eligible if publishing venue is hybrid/edited book is hybrid)

- **Metadata** of deposited publications/research data **open under CC0 or equivalent** license in line with **FAIR principles**; **PIDs** for publication, authors involved in grant, and where feasible their institutions and the grant

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Research data management

- **Obligation to manage** the digital research data generated in the action responsibly, in line with the **FAIR principles**.

- **All projects** that generate research data must:

  - Establish and regularly update a **Data Management Plan** (DMP)

  - **ASAP** and within the deadlines set out in DMP, **deposit** the data in trusted repository, ensure OA via repository under CC BY or CC 0 (or equivalent), following principle '**as open as possible as closed as necessary**' i.e. unless providing OA would be against legitimate interests, be contrary to EU competitive interests or other constraints (OA not provided (to some or all data) can be justified in the DMP).

  - Provide information via the repository about any research output or any other tools and instruments needed to **re-use or validate the data**

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Validation of research and other research outputs

- **Information through repository** about any **research output** or any other **tools and instruments** needed to **validate conclusions** of publications or needed to **reuse or validate data**

  - **Recommendation for open access to other research outputs** and anything else needed to validate publications/data in the Annotated Grant Agreement

- Specifically for validation of publications, **access must be provided** to data or other research outputs **needed for validation** of the conclusions of scientific publications, unless open access is already provided and to the extent that their legitimate interests or constraints are safeguarded

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Open Research Europe

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Open Research Europe

- A new publishing platform supported by the EC for Horizon 2020 and Horizon Europe beneficiaries

- Optional service at no cost to them

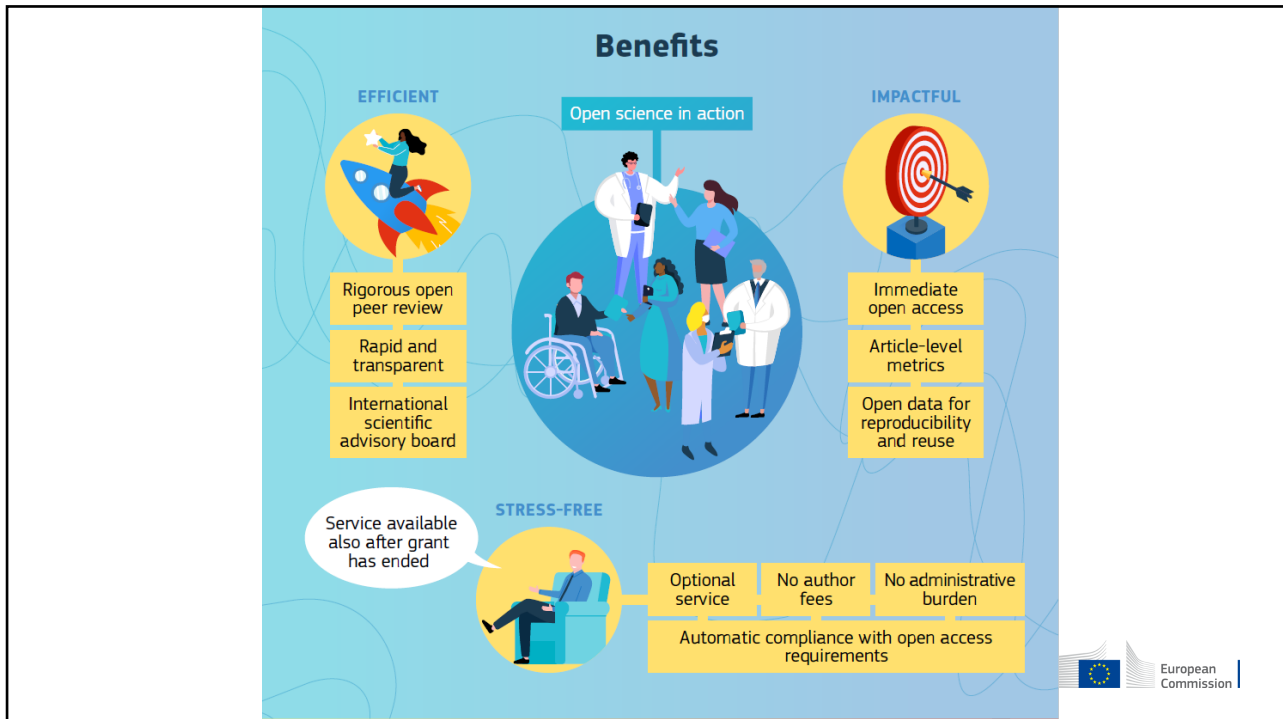- International Advisory Board

- https://open-research-europe.ec.europa.eu/

- 🐦 @OpenResearch_EU

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How does it work?

| ARTICLE SUBMITTED | PREPRINT PUBLISHED | PEER REVIEW PUBLISHED | REVISED VERSION PUBLISHED | SENT TO INDEXERS AND REPOSITORIES |

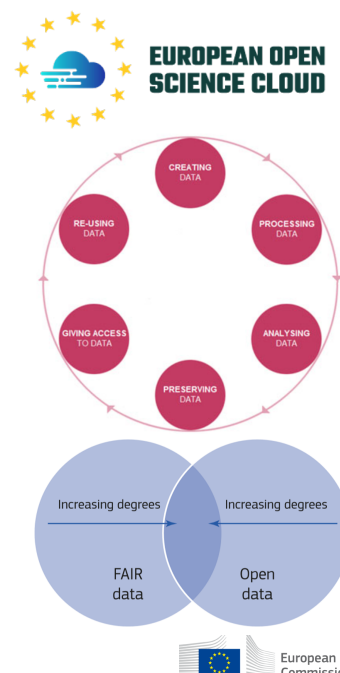| Prepublication checks | Swift publication as preprint | Author-led open peer review | Publication as peer-reviewed version | Indexing and preservation |

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The European Open Science Cloud

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European Open Science Cloud

- The European Open Science Cloud (EOSC) (European Cloud Initiative Communication, 2016) will federate existing and emerging infrastructures to offer a **trusted** and **open distributed** system for the scientific community, providing **seamless access to data** and **interoperable services** addressing the **whole research data lifecycle**

- EOSC will enhance the possibilities for researchers to find and share publications, data and software leading to **new insights** and **innovations**, higher researcher **productivity** and **solutions** for society

- EOSC engages all relevant stakeholders to co-design and deploy a Web of FAIR data and related services for Science

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EOSC past and future

- **2019-2020** Governance: Executive Board (representatives of EOSC stakeholders) and a Governance Board (where MS/AC were represented).
  - Six EB Working Groups: **FAIR**, **Architecture**, **Landscape**, **Rules of Participation**, **Sustainability**, **Training and Skills** delivered an impressive corpus of information: 19 Published Reports.
- **Smooth transition** from project-based implementation to Phase 2 as of 2021
- **Co-Programmed Partnership**: Tripartite governance with **27 MS** & **16 AC**. Memorandum of Understanding, Strategic Research & Innovation Agenda.
- New **EOSC Association** founded on 29 July 2020:
  - 137 Candidate Member Organisations
  - 48 Candidate Observers
  - 18 Mandated Organisations

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Update on the EOSC Association (1)

- Established on 29 July 2020 by 4 founding members (CSIC, GÉANT, CESAER, GARR), as an AISBL under Belgian law

- Granted legal personality, through royal decree on 11 September 2020

- The first General Assembly took place on 17 December 2020 and included:

  - Election of President and Board of 8 Directors

  - Presentation of the draft EOSC MoU and the draft EOSC SRIA

  - Presentation of the draft bylaws

  - Adoption of the budget for 2021

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Update on the EOSC Association (2)

- Following the first General Assembly, the EOSC Association included:

  - 142 Members and 49 Observers

  - Of which 19 are Mandated Organisations, representing national interests

  - Several applications for membership were submitted since then

- Next steps for the EOSC Association include:

  - Completing its organisational structure & operating systems, adopting its bylaws, approving new members, recruiting its Secretary General and other staff.

  - Website under construction: https://www.eosc.eu

- Next steps for the EOSC partnership include:

  - The draft EOSC MoU to undergo internal Commission approval procedure

  - The MoU is expected to be signed by the Commission and the EOSC Association towards May 2021, thus kicking-off the EOSC co-programmed partnership under the Horizon Europe Framework Programme

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Thank you!

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