

Open Science in Horizon Europe

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Open Science Services

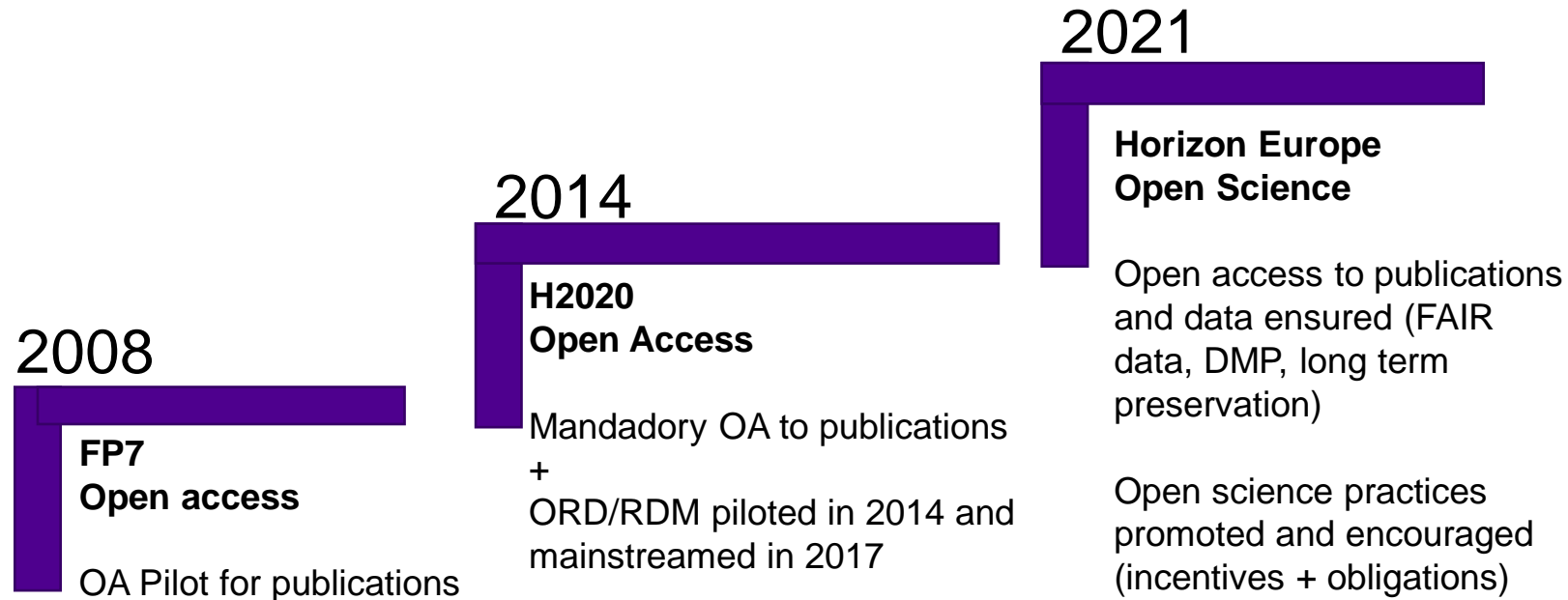
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Overview

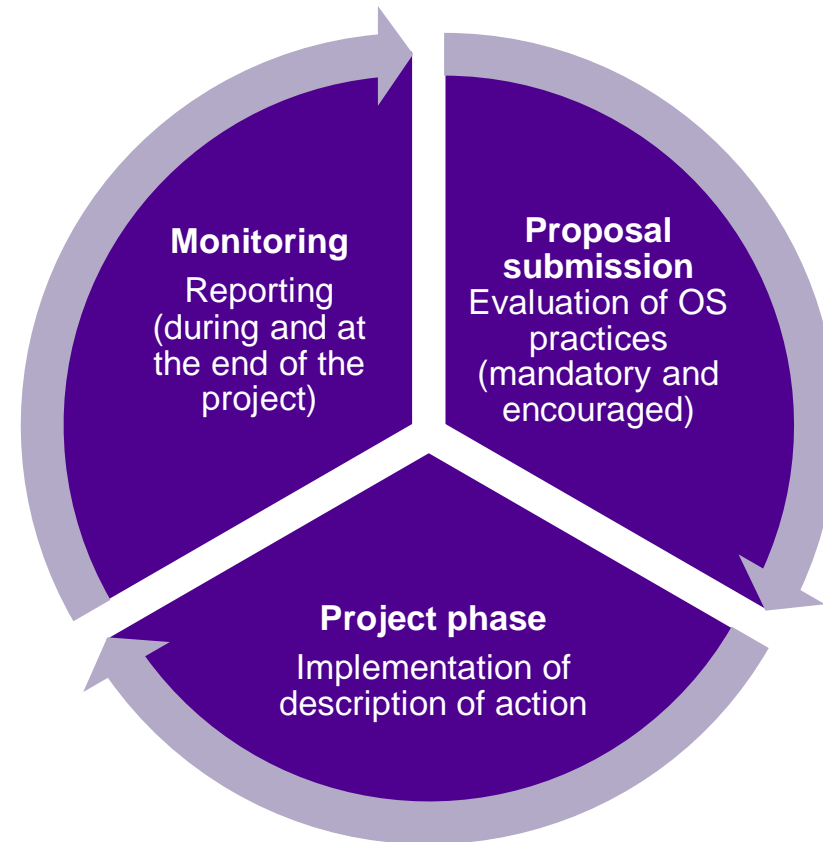
- Open Science in Horizon Europe
- Research data management
- Open Access publishing

Background: Evolution of the open science policies



Open Science throughout HE project lifetime

Open science is embedded throughout Horizon Europe: in the work programmes, in the proposal evaluation, in the grant agreements, in the project execution and follow-up, and in the programme evaluation.



Open Science practices in proposal

Mandatory practices

- Open access to scientific publications
- Open access to research data (*as open as possible as closed as necessary*)
- Information/documentation about research outputs needed for research validation and data reuse
- Management of research data in line with FAIR principles

Recommended practices

- Early and open sharing of research (such as preregistration, preprints)
- Open peer-review
- Citizen science, society engagement
- Research output management (beyond data)
- Reproducible outputs

How to address open science in my proposal?

- Open science (OS) takes a central place in Horizon Europe and open science practices are considered in the evaluation of Horizon Europe proposals.
- If not applicable to the proposal, justifications should be provided so that, if evaluators agree, open science will not be taken into consideration in the evaluation.
- Open science should be made visible in
 1. Application form, (Part A)
 2. Project proposal – Technical description (Part B)

See more: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/af/af_he-ria-ia_en.pdf

1. HE Application form, (Part A)

- List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements of consortium members relevant to the call content.
- Publications, in particular journal articles, are expected to be open access.
- Datasets are expected to be FAIR and ‘as open as possible, as closed as necessary’.

2. HE Project proposal – Technical description (Part B)

1. Excellence

1.2 Methodology

2. Impact

2.2 Measures to maximize impact. Dissemination, exploitation & communication

3. Quality and efficiency of implementation

3.1 Work plan and resources

3.2 Capacity of participants & consortium as a whole

1. Excellence - Methodology

- Describe how appropriate open science practices are implemented as an integral part of the proposed methodology.
- Show how the choice of practices and their implementation are adapted to the nature of your work, in a way that will increase the chances of the project delivering on its objectives [e.g. 1 page].
- If you believe that none of these practices are appropriate for your project, please provide a justification here.

2.2 Measures to maximize impact

- Measures to maximize impact. Dissemination, exploitation & communication
 - Refer to relevant Open Science practices described in the Methodology section (i.e. open access to research outputs and early and open sharing of research)
 - Make sure proposed practices are compatible with your dissemination and exploitation plan (e.g. protection of intellectual property) and consortium agreements

3. Quality and efficiency of implementation

3.1 Work plan and resources

- Give visibility to RDM with distinct tasks or work packages
- Include other relevant RDM activities and budget them

3.2 Capacity of participants & consortium as a whole

- Proposers should show how this includes expertise and/or track record in open science practices, relevant to what is planned for the project.
 - Describe your expertise in open science practices (see the list in slide 5)
- If justification has been provided that open science practices are not relevant for their projects, it is not necessary to demonstrate track record and expertise.

Data management plan in proposal

Research Data Management (RDM) in Methodology section

- **Max. 1 page in proposal stage**
- **In proposal stage:** managing data in line with the FAIR principles. Explain:
 - Types of data & research output
 - **F**indability, **A**ccessibility, **I**nteroperability, **R**eusability of data & research outputs
 - Costs and responsibilities of data curation, storage and preservation
- **After positive funding decision**
 - Beneficiaries must submit a DMP as a deliverable to the granting authority in accordance with the Grant Agreement (normally by month 6).
 - Writing a DMP is an activity directly linked to the methodology of the research, i.e. good data management will make the work more efficient/save time, contribute to safeguarding information and to increasing the impact and the value
 - Good practice: DMP is a living document → update it

Types of data / research outputs

- Describe your data
 - Data you are producing yourself (e.g. experimental data, observational data, images, text, numerical) and their estimated size.
 - And any existing data (and provenance of the data)

Findability of data / research outputs

- Types of persistent identifiers and unique identifiers, for example
 - [DOI](#)
 - URN
 - Handle
- Trusted repositories that will be used
 - For calls with a condition relating to the European Open Science Cloud (EOSC): data must be deposited in trusted repositories that are federated in the EOSC in compliance with the EOSC requirements → <https://eosc-portal.eu/>,
 - Certified repositories (e.g. [CoreTrustSeal](#), [nestor Seal DIN31644](#), [ISO16363](#)) or disciplinary and domain repositories commonly used and endorsed by the research communities. Such repositories should be recognised internationally. -> <https://www.openaire.eu/find-trustworthy-data-repository>
 - General-purpose repositories or institutional repositories that present the essential characteristics of trusted repositories such as clear policies, assign persistent identifiers, ensure adequate metadata. -> More information on repositories can be found from [data management guide](#) provided Tampere University Library

Accessibility of the data / research outputs

- IPR considerations
- Timeline for open access
 - Ensure open access through the repository, as soon as possible and within the deadlines set out in the DMP.
 - Deposition of data must take place as soon as possible after data production/generation or after adequate processing and quality control have taken place, providing value and context to the data and **at the latest by the end of the project**. This does not entail that data must be made open, but rather that it is deposited so that **metadata information** is available and hence information about the data is findable.
 - Data underpinning a scientific publication should be deposited at the latest at the time of publication, and in line with standard community practices.
- Provisions for access to restricted data for verification purposes

Exceptions on open research data

- Possible reason not to open data:
 - Open access is against beneficiary's interests, including regarding commercial exploitation
 - Open access is contrary to other constraints, such as data protection rules, privacy, confidentiality, trade secrets, security rules, intellectual property rights
- **If open access is not provided (to some or all data), this must be justified in the DMP.** ("as open as possible as closed as necessary")

Remember: Exceptions applies only for Open Access, not Research Data Management. Data management is still essential.

Interoperability of data / research outputs

- Standards, formats and vocabularies for data and metadata
- Metadata should be machine-actionable and follow a standardised format, in line with community standards
 - [Disciplinary metadata standards](#) (DCC)
- Metadata should provide rich information:
 - on the data (author(s), dataset description, date of dataset deposit, dataset deposit venue and dataset embargo (if any); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms.
 - Additionally, metadata must be open access under a CC0 public domain dedication or equivalent, to the extent legitimate interests are safeguarded and constraints are taken into account.
 - Our national solutions for creating metadata: Research Dataset Description Tool Qvain and Research Dataset Finder Etsin (part of [Fairdata services](#))

Reusability of data / research outputs

- Licenses for data sharing and re-use
 - [Creative Commons](#) the latest version of a Creative Commons Attribution International Public Licence ([CC BY](#)) requiring attribution of authorship, or a license providing equivalent rights, or under a Creative Commons Public Domain Dedication ([CC0](#)) or equivalent (which waives any rights to the data).
 - [Open Data Commons](#)
 - A [Creative Commons Public Domain Mark](#) (PDM) or equivalent should be applied to raw research data unless the data meet the requirements to be protected by copyright/database right.
- Availability of tools/software/model for data generation and validation/interpretation/re-use
 - Information must include a detailed description of the research output/tool/instrument, how to access it, any dependencies on commercial products, potential version/type, potential parameters etc.

Curation and storage / preservation costs

- Person/team for data management and quality assurance
- Do you need to hire a data manager? Take into account salary costs.

Data Management Support for Research Projects

”Students in PhD programmes **spend up to 80% of their time on ‘data munging’, fixing formatting and minor mistakes to make data suitable for analysis — wasting time and talent.** With 400 such students, that would amount to a monetary waste equivalent to the salaries of 200 full-time employees, at minimum. So, hiring 20 professional data stewards to cut time lost to data wrangling would boost effective research capacity.”

Mons, B (2020) Invest 5% of research funds in ensuring data are reusable. Nature, Vol. 578, p. 491 <https://doi.org/10.1038/d41586-020-00505-7>

Data Management Support for Research Projects

- Tampere University Research Data Services hosts a team of professional data managers who provide research projects and groups with hands-on, expert support for data management.
- Our services can be tailored according to the needs of your project
 - We can contribute, e.g., to data management planning (DMP, data content, data flows, server environments, data quality control, lifecycle management), data processing (data cleaning, reporting, scripts, database access), and stakeholder collaboration (data protection, data security, software vendors, IT capacity providers).
- The expenses related to the use of data managers should be covered by the research project or group (consultation is free of charge)
 - A data manager typically works in each project three to six months throughout the lifespan of the project.
- For the best benefit, contact us already at the proposal stage!
- Further information: senior specialist Turkka Näppilä (050 509 9030, researchdata@tuni.fi)

Help available

- [Research Data Management - guide](#) (Tampere University Library)
- [Data Management Guidelines](#) (FSD)
- [Horizon Europe Open Science Hand out \(PDF\)](#)
- [General Model Grant Agreement](#) (PDF)
- [Annotated grant agreement](#) (PDF)
- [Horizon Europe programme guide](#) (PDF)
- [Horizon Europe Program Standard Application Form](#) (PDF)



- We organize research data management trainings.
- We provide instructions and resources about data management.
- We comment data management plans and privacy notices.