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Webinar|
19 March 2024

Horizon Europe Open Science requirements in practice

Jonathan England

Horizon Europe reference documents

Program Guide of Horizon Europe

Annotated Model Grant Agreement (AGA)

ERC Managing your project > Open Science

MSCA Work Programme

EC Participant Portal – 'Continuous reporting' guide

OpenAIRE guides

- Q&A from previous webinars
- 'A Quick Guide to Horizon Europe Open Access Requirements'
- 'A Quick Guide to Horizon Europe Research Data Requirements'

Next webinar
Wednesday 03 July 2024 at 10:00 CEST

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Open Science

"Open science is an approach based on open cooperative work and systematic sharing of knowledge and tools as early and widely as possible in the process"

European Commission

- Open Access to publications
- Responsible management of data (FAIR principles)
- Open access to data 'as open as possible, as closed as necessary'
- Information about outputs / tools / instruments to validate/re-use results and data
- Digital /physical access of results to validate the conclusions

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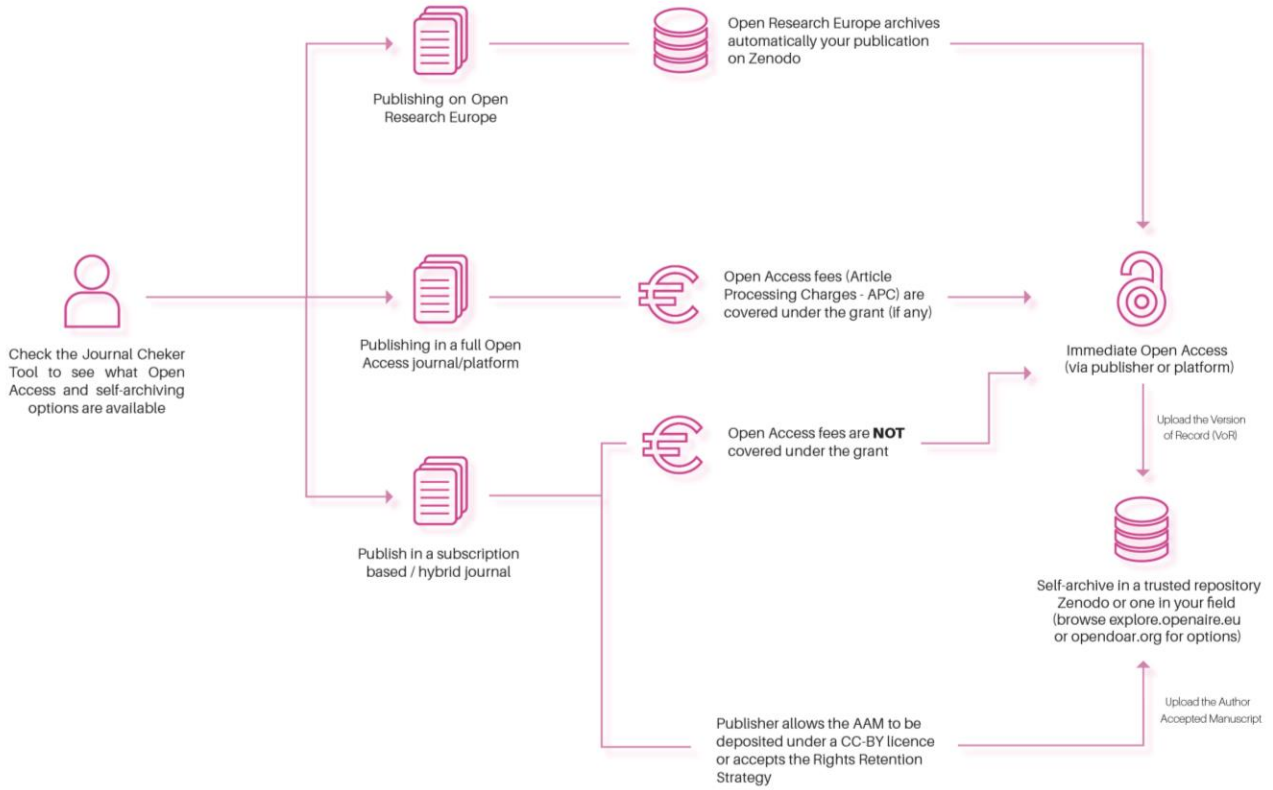
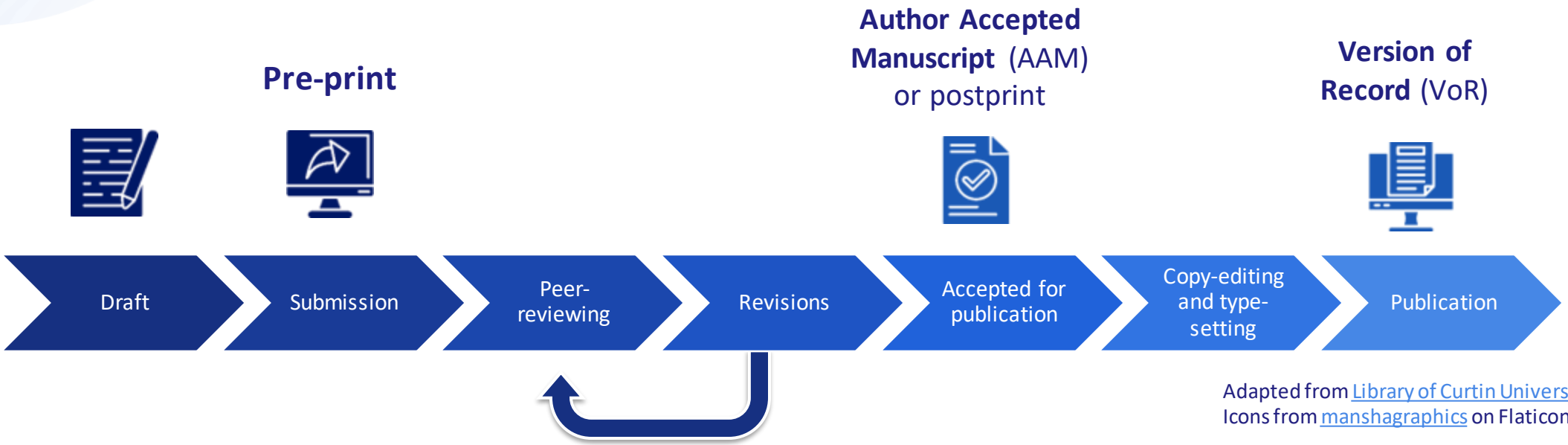
Requirements for publications

Mandate

- Deposit the peer-reviewed manuscript (AAM or VoR) in a **trusted repository** (i.e. self-archiving)
- **No embargo period** (i.e. immediate OA)
- Authors retain their rights by having the AAM and/or the VoR under a **CC-BY 4.0** licence
- Information about research outputs or tools/instruments needed to validate the conclusions of the publication
- Add the acronym/code of the project within



Author Accepted Manuscript (AAM) **vs** Version of Record (VoR)



Adapted from Library of Curtin University
Icons from manshagraphics on Flaticon

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Trusted repositories

- Certified repositories (e.g. CoreTrustSeal, nesto Seal DIN31644, ISO16363)
- Disciplinary and domain repositories commonly used and **endorsed by the international research communities**
- General-purpose (e.g. **Zenodo**) or institutional repositories that present the essential characteristics of trusted repositories:
  - services, mechanisms and provisions in place to secure the accuracy, integrity, authenticity and access of contents
  - use of PIDs
  - machine-actionable, standardised and detailed metadata (including provenance and licencing)

Search for a repository on:

OpenAIRE | EXPLORE

https://explore.openaire.eu/

For your publications:

OpenDOAR

https://sherpa.ac.uk/opendoar/

For your research data:

re3data.org

REGISTRY OF RESEARCH DATA REPOSITORIES

For everything:

zenodo

https://zenodo.org/

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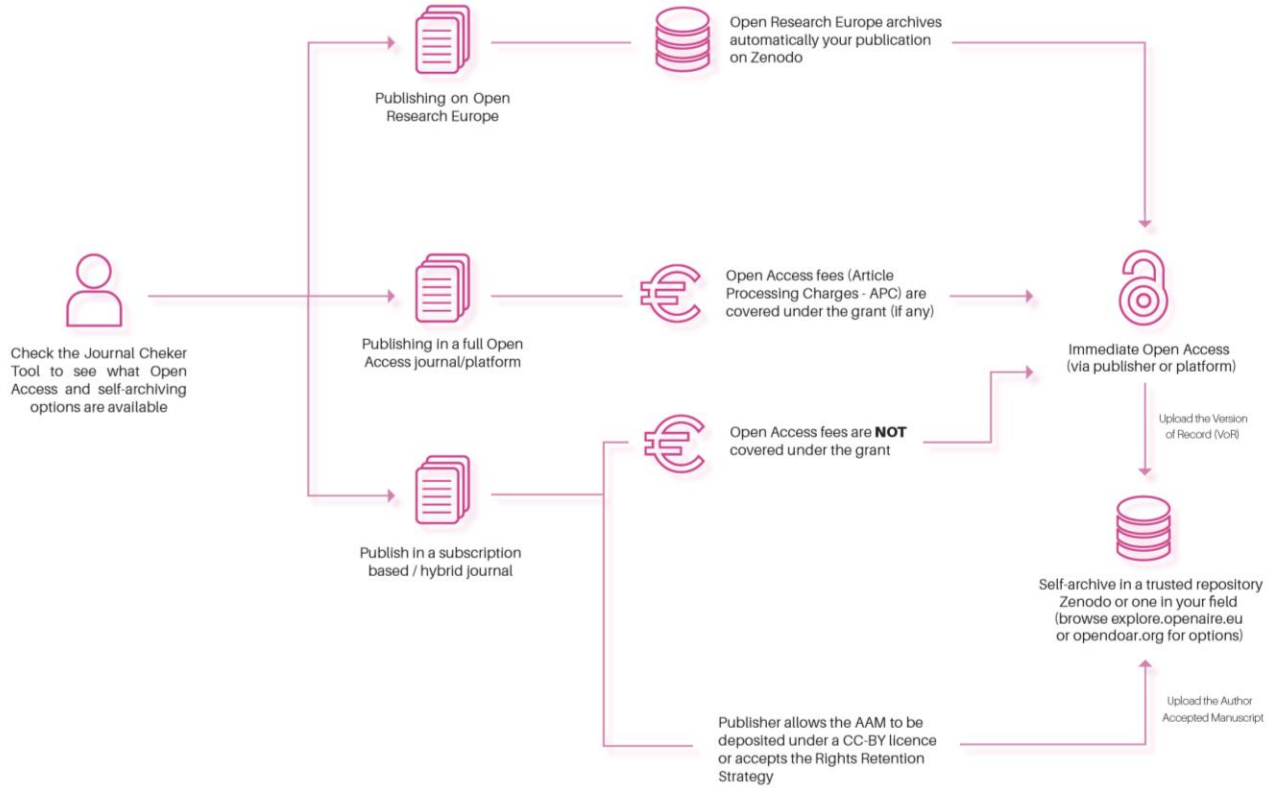
Specificities

- Publication fees (Article Processing Charges) are **reimbursable** if the venue is full Open Access (also known as 'Gold' OA)
- **No restrictions** on where to publish (journal doesn't have to be full OA), but APCs for hybrid journals are not covered
- CC BY-NC/BY-ND licence allowed for long-text formats (e.g. monographs); a chapter in an edited book is not eligible



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Self-archiving

Minimum for Open Access

=

SELF-ARCHIVING

- Self-archiving is the process of depositing a version of your work on a trusted repository
- **Irrespectively of where you publish** (e.g. full OA, hybrid journal), you still need to deposit the AAM or VoR on a repository (except if you publish in Open Research Europe)
- The AAM and VoR might be available under different licences, e.g. signing a Copyright Transfer Agreement on the VoR but retaining your rights (under a CC-BY licence) on the AAM, allowing you to share it openly
- **It is about where you make it available in OA, NOT where you publish**

Slide adapted from England, J. (2021) under CC-BY 4.0 10.5281/zenodo.4519479

Rights Retention Strategy

"For the purpose of Open Access, the author has applied a CC BY public copyright licence to any Author Accepted Manuscript version arising from this submission."

- For subscription-based or hybrid journals, you don't always have to pay for Open Access.
- To assert ownership, the author – as the intellectual creator and original copyright holder – applies a CC-BY licence to the AAM
- Delivering publication services does not entitle publishers to ownership of the AAM, which remains the intellectual property of the author. Publication services should be paid for, but not with ownership of the AAM (from cOAlition S)

https://www.coalition-s.org/rights-retention-strategy/

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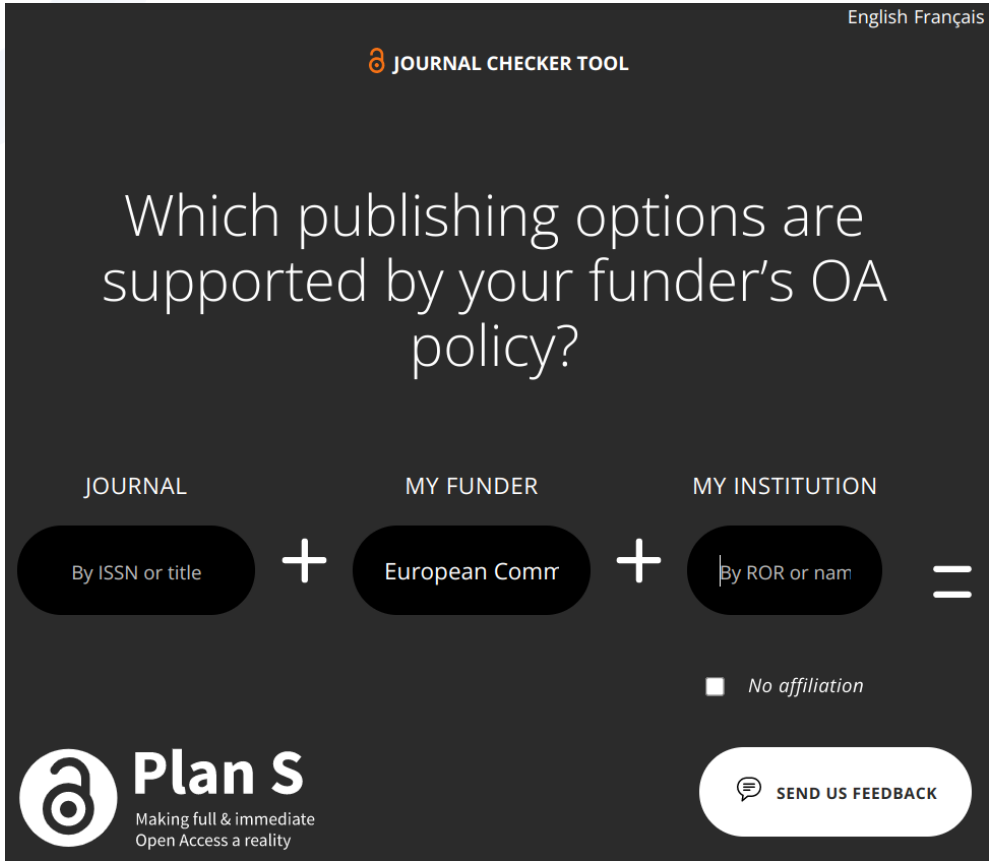
Check the journal's eligibility



https://journalcheckertool.org/

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Another option

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Open Research Europe publishing platform

Overview

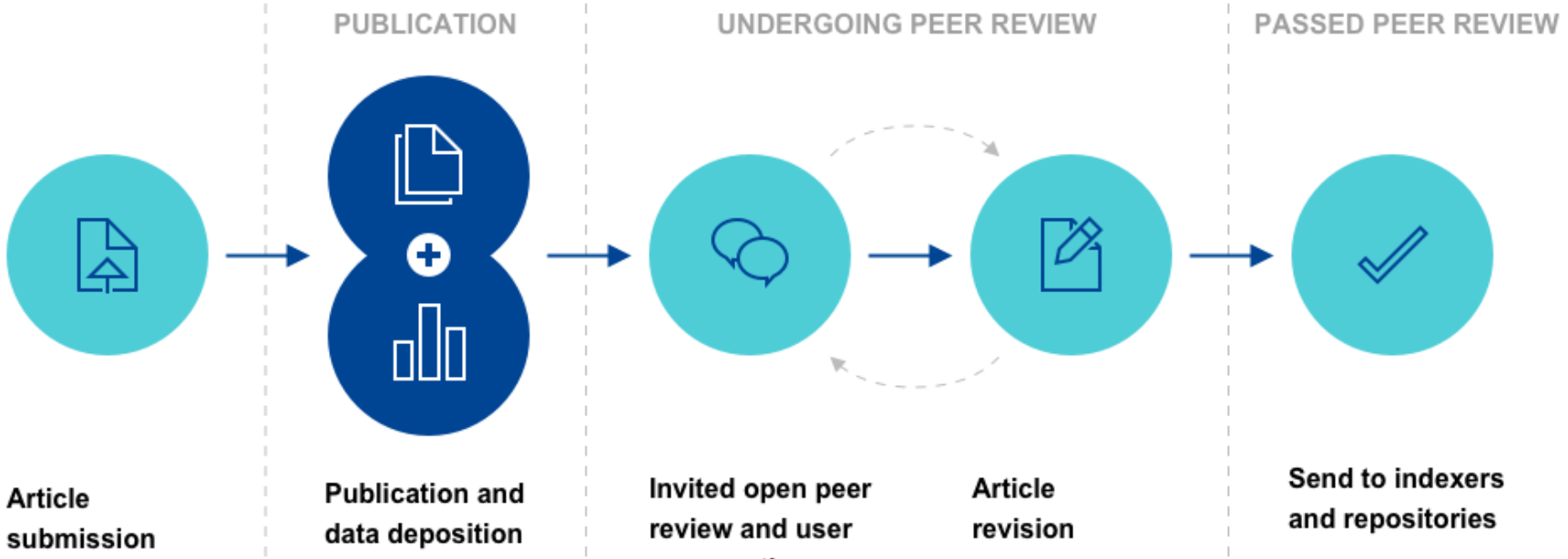
NOT a repository

European Commission

- Diamond Open Access publishing platform for Horizon 2020 and Horizon Europe beneficiaries (even partially funded)
- **No costs to authors or readers** (i.e. no APCs) - costs are met directly by the European Commission
- **Optional** service, available during and after the end of the project
- **Open peer-review** - name of the reviewers, the revisions and the comments from the authors after revisions, are openly available
- Immediate publication – publish first, then the review takes place
- **Automatic compliance** with the OA requirements - no need to self-archive as it will be archived in Zenodo once passed peer-review
- High scientific standards and policies - Scientific Advisory Board; policies and guidelines (e.g. underlying data availability, analysis of methods)

Slide adapted from Durowoju, G. (2022) 10.5281/zenodo.7266373; England & Malaguarnera (2022) 10.5281/zenodo.7324363; England & Tsoukala (2023) 10.5281/zenodo.10125224 under CC-BY 4.0

Publishing process



Submission via a single-page submission system. In-house editorial team makes pre-publication checks to ensure all policies and ethical guidelines are adhered to

Pre-print version is published within 10 days, enabling immediate viewing and citation

Names of reviewers and their reviews are published alongside the publication, authors' responses and comments from registered users

Scopus
PubMed
IET Inspec
OpenAlex
ERIH PLUS
Dimensions
TOP FACTOR
DOAJ
Reaxys
Google Scholar
zenodo

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Multidisciplinary

Open Research Europe

ARTICLE TYPES by subject

	Natural sciences	Engineering and technology	Medical and health sciences	Agricultural and veterinary sciences	Social sciences	Humanities and the arts
Case Study	●	●	●	●	●	●
Research Article	●	●	●	●	●	●
Brief Report	●	●	●	●	●	●
Data Note	●	●	●	●	●	●
Method Article	●	●	●	●	●	●
Open Letter	●	●	●	●	●	●
Software Tool Article	●	●	●	●	●	●
Review	●	●	●	●	●	●
Case Report	●	●	●	●		
Registered Report	●	●	●	●	●	
Clinical Practice Article	●	●	●	●		
Study Protocol	●	●	●	●	●	
Systematic Review	●	●	●	●	●	
Essay					●	●

European Commission

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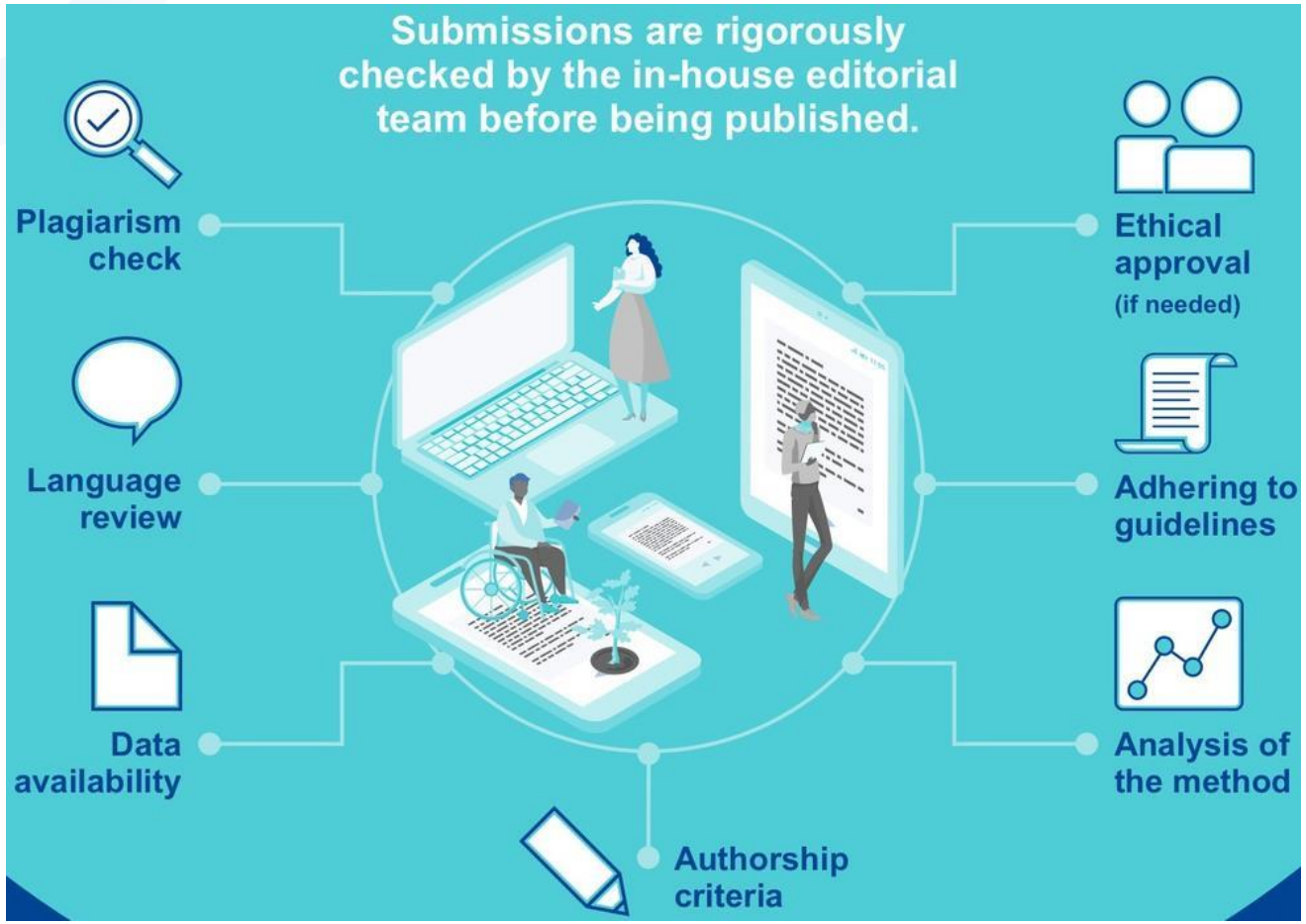
Pre-publications checks



The in-house editorial team does not review the academic/scientific content of the publication. Only the reviewers (selected by the authors) do that.

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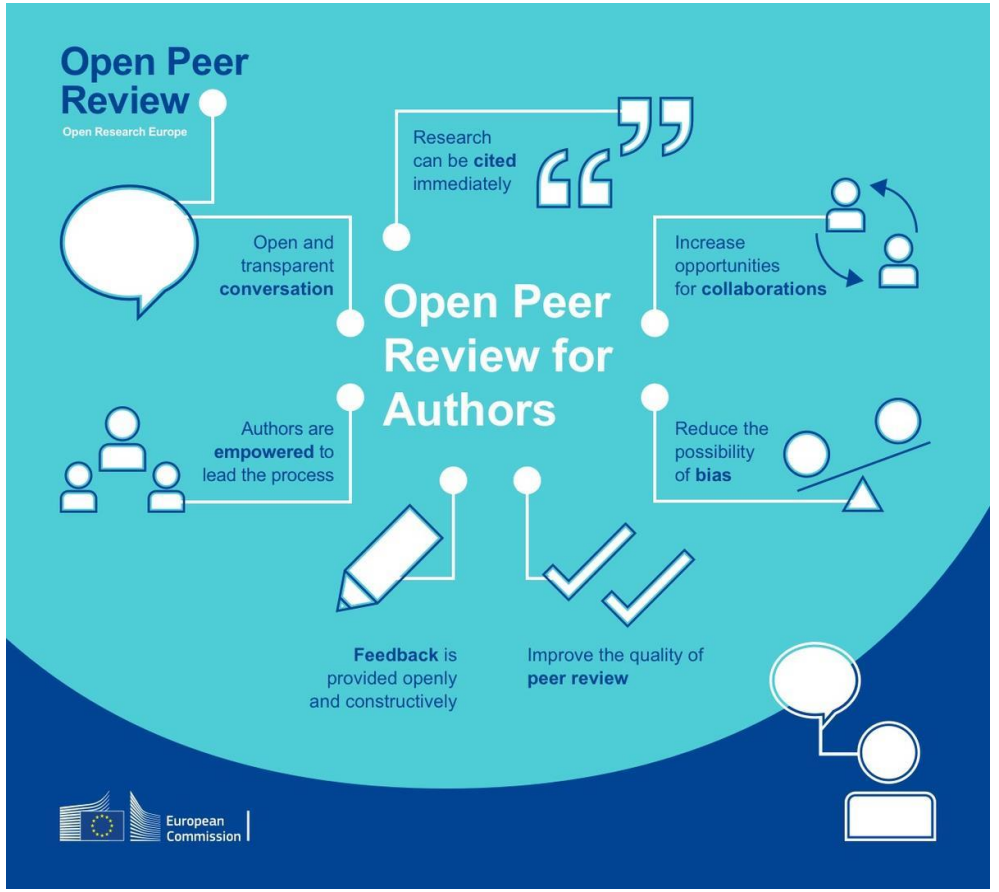
Review process

- Reviewers are suggested by article authors, with the editorial team ensuring they meet necessary criteria (e.g. conflicts of interest) or suggesting additional expertise
- An extensive list of questions, which must be answered, guides the review process, appropriate for different domains; there is also a reviewer code of conduct to be followed
- Once all necessary reviews performed, the editorial team checks for process, content, language and correct status, and completes the publishing process



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Open peer-review example

1-20 of 280 results

Advanced search

RESEARCH ARTICLE

✓ ✓ ✓

REVISED **Towards an integrated automatic design process for robot swarms [version 2; peer review: 3 approved]**

AUTHORS Darko Bozhinoski, Mauro Birattari

FUNDERS **Horizon 2020 Framework Programme** | Wallonia-Brussels Federation | Fonds De La Recherche Scientifique (FNRS)

PEER REVIEWERS Adam Schroeder; Alan Millard; Edmund Hunt and James Ward

LATEST VERSION PUBLISHED 04 Nov 2022

RESEARCH ARTICLE

✓ ?

REVISED **Identifying entrepreneurial discovery processes with weak and strong technology signals: a text mining approach [version 2; peer review: 1 approved, 1 approved with reservations]**

AUTHORS Levan Bzhalava, Jari Kaivo-oja, Sohaib S. Hassan, Wolfgang Dieter Gerstlberger

CASE STUDY

AWAITING PEER REVIEW

Hybrid AC/DC architecture in the CE.D.E.R.-CIEMAT microgrid: demonstration of the TIGON project [version 1; peer review: awaiting peer review]

AUTHORS Paula Peña-Carro, Oscar Izquierdo-Monge

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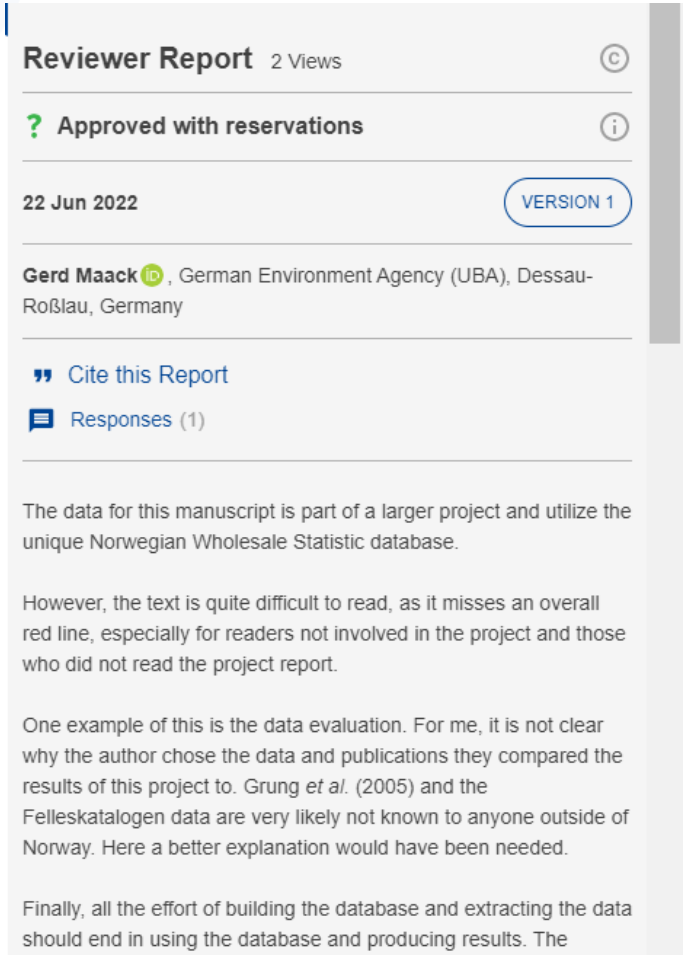
Open peer-review example



Reviewer Report 2 Views

? **Approved with reservations**

22 Jun 2022 VERSION 1

Gerd Maack, German Environment Agency (UBA), Dessau-Roßlau, Germany

Cite this Report

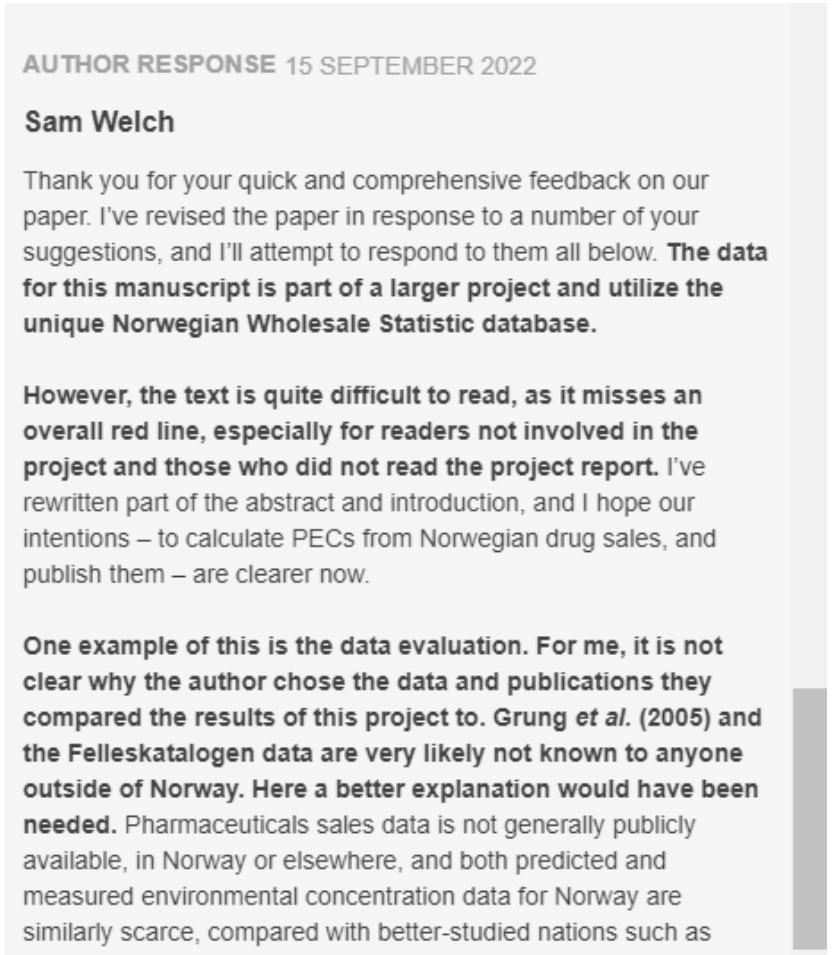
Responses (1)

The data for this manuscript is part of a larger project and utilize the unique Norwegian Wholesale Statistic database.

However, the text is quite difficult to read, as it misses an overall red line, especially for readers not involved in the project and those who did not read the project report.

One example of this is the data evaluation. For me, it is not clear why the author chose the data and publications they compared the results of this project to. Grung *et al.* (2005) and the Felleskatalogen data are very likely not known to anyone outside of Norway. Here a better explanation would have been needed.

Finally, all the effort of building the database and extracting the data should end in using the database and producing results. The



AUTHOR RESPONSE 15 SEPTEMBER 2022

Sam Welch

Thank you for your quick and comprehensive feedback on our paper. I've revised the paper in response to a number of your suggestions, and I'll attempt to respond to them all below. **The data for this manuscript is part of a larger project and utilize the unique Norwegian Wholesale Statistic database.**

However, the text is quite difficult to read, as it misses an overall red line, especially for readers not involved in the project and those who did not read the project report. I've rewritten part of the abstract and introduction, and I hope our intentions – to calculate PECs from Norwegian drug sales, and publish them – are clearer now.

One example of this is the data evaluation. For me, it is not clear why the author chose the data and publications they compared the results of this project to. Grung *et al.* (2005) and the Felleskatalogen data are very likely not known to anyone outside of Norway. Here a better explanation would have been needed. Pharmaceuticals sales data is not generally publicly available, in Norway or elsewhere, and both predicted and measured environmental concentration data for Norway are similarly scarce, compared with better-studied nations such as

Research Communities in ORE

Community Gateways

Gateways | **Community Gateways** | Collections

Community Gateways are dedicated hubs within Open Research Europe to bring together all content related to a specific area of research. They can be tracked to trigger email alerts whenever there is new research published within the Community Gateways of interest.

Agriculture, Land and Farm Management

The Agricultural, Land and Farm Management Community Gateway is the home for research ensuring the correct use and management of land for agricultural functions and interests, and is led by Dr. Olivier Le Gall.

Analytical Chemistry

Analytical chemistry involves the separation, identification and quantification of the composition and structure of matter in both natural and artificial substances. This Community Gateway is led by Dr. Imad El Haddad.

Animal and Dairy Science

The Animal and Dairy Science community gateway is focused on publishing both industry- and lab-based research relating to animal and dairy produce, and is led by Dr. Emer Kennedy.

Arts

This multidisciplinary gateway showcases research on all aspects of the Arts, a field encompassing an immense variety of human practices with creative expression and imagination at their core. This Community Gateway is led by Dr Ruth Sargent Noyes.

Collections

Gateways | Community Gateways | **Collections**

Collections are compilations of content relating to a specific Horizon 2020 or Horizon Europe-funded community, project or conference.

Adaptation to Climate Change

This collection draws on the interdisciplinary nature of climate research in the Horizon funding programmes, looking at both current climatic conditions as well as the lessons that can be learned from climatic changes in the past. It is led by Dr. Jana Vořišková.

Additive Manufacturing

Additive Manufacturing refers to technologies that produce three-dimensional objects one superfine layer at a time. It has many applications across Engineering. Examples include the creation of weight-saving, complex geometric designs for Aerospace Engineering, the rapid prototyping in Automotive Engineering, and creating custom on-demand surgical implants in Medical Engineering.

Advances in Natural Language Generation

The aim of this collection is to bring together recent works related to developments and improvements within the field of language generation. It has been developed by the Multi3Generation COST Action network (CA18231) but is open to submissions from Horizon projects. It is led by Dr Anabela Barreiro, Dr Elena Lloret Pastor, and Professor Max Silberztein.

Advances in Optics

Optics is concerned with studying and understanding the behavior and properties of light, specifically in relation to its interaction with different media. This collection focuses on the latest developments within this field of physical sciences.

Gradually developing researcher-led **community gateways and collections** in specific fields

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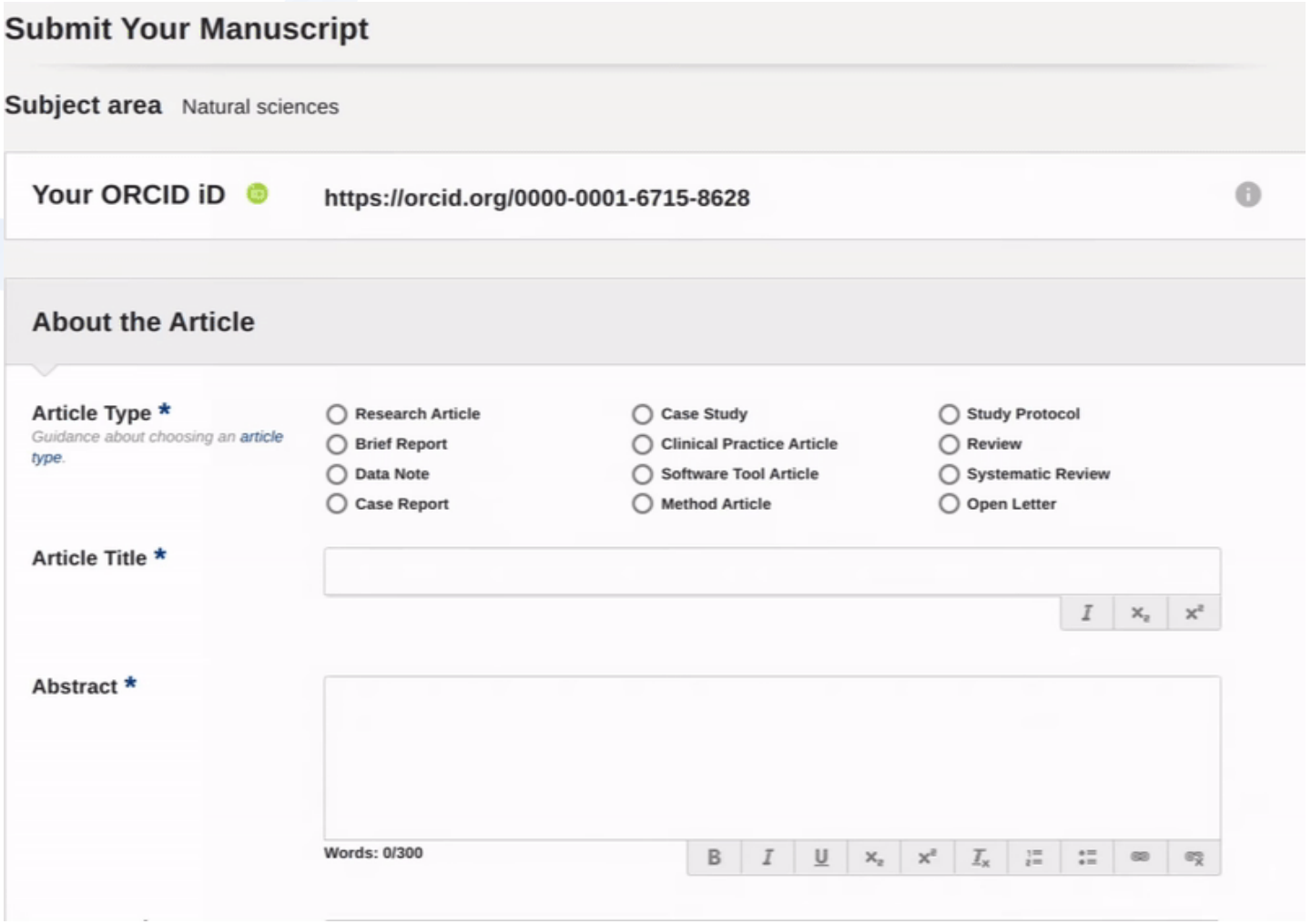

Follow **@OpenResearch_EU** on social media

Scan to register to **ORE Newsletter** (4/year)

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Requirements for research data

Mandate

- Must manage the digital research data in line with the **FAIR principles** (Findable, Accessible, Interoperable, Reusable)
- **Data Management Plan** (DMP) is required by M6; updated mid-project and at end of project
- **Deposit (meta)data as soon as possible** after production /generation or after processing and quality controls
- Deposit data in a **trusted repository** and make them **open as soon as possible** (deadlines set in DMP), following the "as open as possible, as closed as necessary" (open by default) principles

Image by Scriberia for The Turing Way Community under CC-BY 4.0

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Specificities

- Data closed if necessary, but **metadata must be FAIR and under CCO** (trusted repositories will automatically share metadata in CCO)
- Open licence, preferentially CC-BY or CC0 licence
- Detailed information about research outputs or tools/instruments needed to re-use or validate the data (e.g. data, software, algorithms, protocols, models, workflows, electronic notebooks)

Examples of metadata
author(s) name, author(s) ORCID, DOI, licence, language, journal, title, etc.

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Valid justification for not opening the data

- Commercially valuable data if it would undermine its exploitation or other results (e.g. endanger trade secrets ('soft' IP)), or make IP protection of results more difficult
- Data protection/privacy rules of sensitive and/or personal data
- Security rules for projects dealing with strategic assets, interests, autonomy or security of the EU

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Exceptions

Validation of findings

- Restricted or closed data might need to be made available through agreements with relevant confidentiality provisions

Public emergencies

- Can be triggered by the request of the granting authority
- Immediate OA is extended beyond publications to any research outputs – as soon as feasible and in CC BY or CC0
- DMP provided with the proposal or before grant signature
- In case of conflict of legitimate interests for openness, beneficiaries must grant non-exclusive licences to legal entities that need the research to address the emergency (this provision applies up to 4 years after the end of the action)

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A few definitions

Trusted repositories

- Certified repositories (e.g. CoreTrustSeal, nesto Seal DIN31644, ISO16363)
- Disciplinary and domain repositories commonly used and **endorsed by the international research communities**
- General-purpose (e.g. **Zenodo**) or institutional repositories that present the essential characteristics of trusted repositories:
  - services, mechanisms and provisions in place to secure the accuracy, integrity, authenticity and access of contents
  - use of PIDs
  - machine-actionable, standardised and detailed metadata (including provenance and licencing)

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For your publications:

OpenDOAR

https://sherpa.ac.uk/opendoar/

For your research data:

re3data.org

REGISTRY OF RESEARCH DATA REPOSITORIES

For everything:

zenodo

https://zenodo.org/

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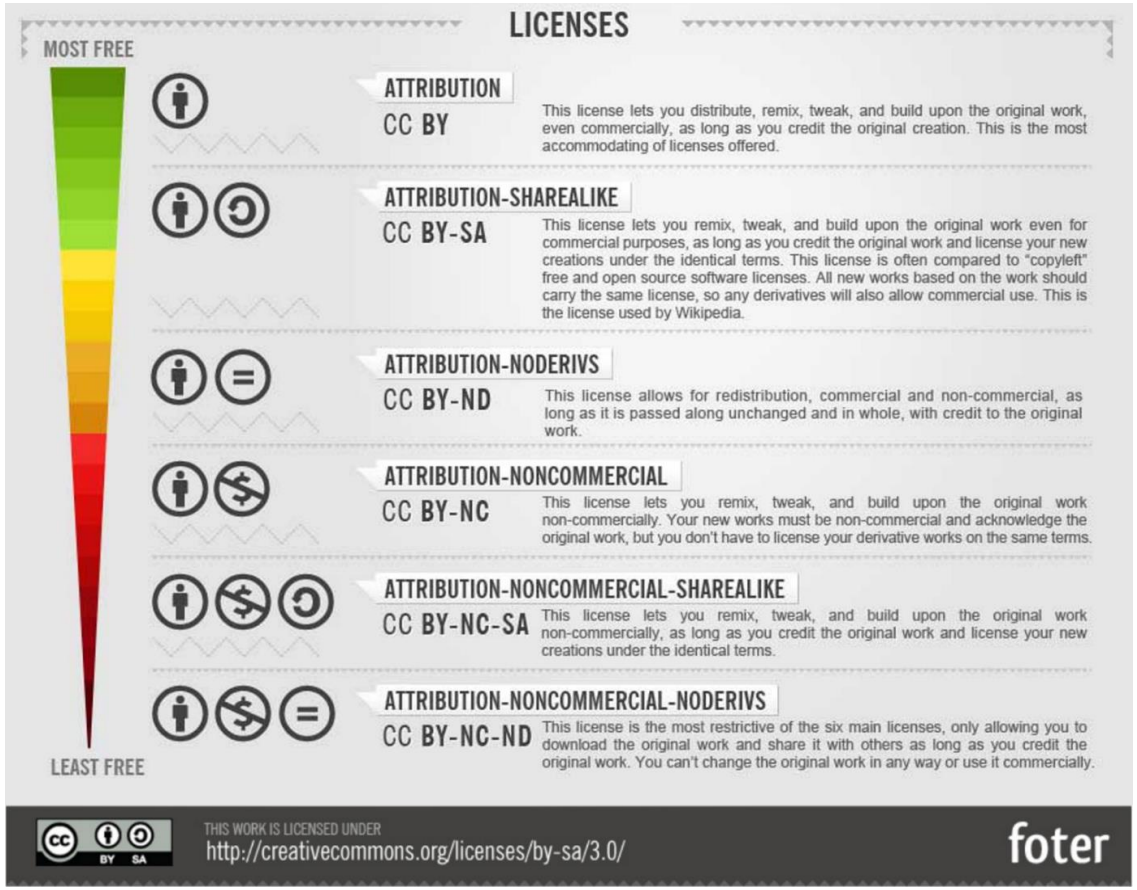
Creative Commons

- Removes ambiguity over what others can and cannot do with your work
- You keep (certain) rights, but you grant certain reuses without them needing to contact you
- Universally recognisable and juridically sound (you can still claim copyright infringements)

You can share, adapt for any purpose, no attribution is required (it is similar to 'Public Domain' but is an actual licence

You can share, adapt for any purpose as long as you **credit the author**



Data Management Plan

A formal 'living' document

- Formal document that specifies **how research data will be handled** both during and after a research project.
- It identifies key actions and strategies to ensure that research data are of a high quality, safe, sustainable and – where possible – accessible and reusable.
- There are **no absolute right answers**
- But be clear, specific and detailed… and **justify decisions**
- The DMP is to prove to the funder that the researcher has taken time to reflect on what to do, that consideration has been given and the approach seems reasonable
- And that your data is "As open as possible, as closed as necessary" (FAIR principles)

Slide adapted from Venkataraman, S. (2018) under CC-BY 4.0 http://doi.org/10.5281/zenodo.1489929

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FAIR principles

Findable

- Persistent identifier (e.g. DOI)
- Rich metadata
- Searchable and discoverable online

Accessible

- Deposited on a trusted repository (e.g. Zenodo)
- Data can be restricted and still FAIR – “as open as possible, as closed as necessary”

Interoperable

- Lossless, open and/or standardised file formats (e.g. using a CSV file format instead of the proprietary XLSX format).
- Use shared definitions and standardised terms within your specific domain.

Reusable

- Well documented (e.g. README files), including provenance and tools / instruments needed to reproduce the results
- Clear licence (e.g. CC BY 4.0, CC0)

https://www.openaire.eu/how-to-make-your-data-fair

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Data Availability Statement

- All articles must include a Data Availability statement, even where there is no data associated with the article
- Should be added to the end of the article prior to submission
- The Data Availability Statement should not refer readers or reviewers to contact an author to obtain the data (i.e. not FAIR data – Accessibility issue)
- You can also mention the DMPs if it is published on Zenodo or on another repository

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Some useful tools

OpenAIRE EXPLORE

Makes the links

- A comprehensive and open dataset of research information covering 166m publications, 59m research data, 203k research software items, from 131k data sources, linked to 3m grants and 193k organisations
- Connect and view all of your research – publications, datasets, ORCID, software, DMP, etc. All linked together through citations and semantics.
- Search for publications, research data, research software...
- Download reports for research products of projects, organisations and data sources
- Find statistics, metrics and graphs for projects, data sources, research products...
- Browse by Sustainable Development Goals or fields of research
- Add to ORCID your research products with the ORCID search and link wizard
- Find a repository to deposit or publish your research (publications, data or software) in Open Access.

https://explore.openaire.eu/

AMNESIA – anonymisation tool

Why anonymise?

- Anonymised data are outside the scope of GDPR
- Anonymisation provides a statistical guaranty about the risk of information leakage
- It is the most suitable way to give information to third parties, without revealing personal data

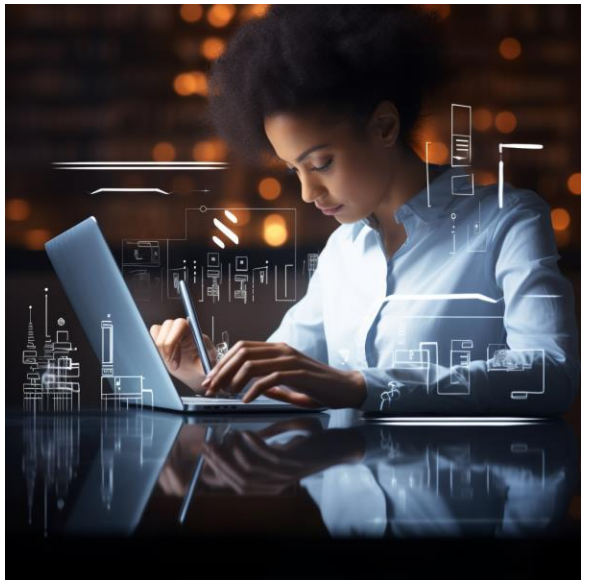
- User friendly
- Works locally, no data transfer risk
- Allows users to customize the solution
- The only tool to offer anonymization for set-valued data
- The only tool to support k^m-anonymity
- Easy to incorporate to third party information systems

Slide adapted from Terrovitis, M. (2023) under CC-BY 4.0 10.5281/zenodo.7636541

ARGOS – write your DMP

Free and open source

- Free for researchers, open source, configurable and extensible tool for planning Research Data Management activities according to OA & FAIR data policies.
- Discoverable through OpenAIRE EXPLORE
- Accessible: Persistent Identifiers (ORCIDs & DOIs)
- Interoperable: Research Data Alliance DMP Common Standard
- Reusable: Licences
- Versioned (history/provenance)
- Published and preserved in Zenodo
- Enables research communities to create templates (dataset profiles) tailored to domain standards and practices.



https://argos.openaire.eu/

Slide adapted from Papadopoulou, E. (2022) under CC-BY 4.0 10.5281/zenodo.6703324

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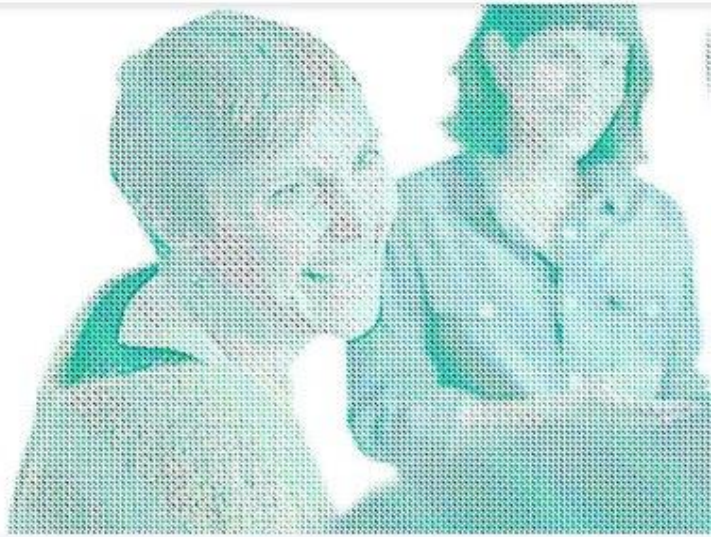
ARGOS – write your DMP

Argos

Community Calls

Are you a researcher or administrator of Argos? Got questions on how to write your Data Management Plan (DMP) or how to create your Template and connect DMPs with other data services and outputs? Join us and learn more!



OpenAIRE is running a series of **community calls for Argos** to **support all researchers** in meeting their **Horizon Europe requirements** by creating **FAIR** (**Findable, Accessible, Interoperable, Reusable**) **DMPs**. Similarly, it supports **all research performing and funding organisations** to orchestrate their data services around Argos and **connect data workflows** contributing to **interconnected Research Data Management ecosystems**.

These calls offer the opportunity to discover Argos novelties and learn how to benefit from them in your practice, share feedback and discuss the future of DMPs as FAIR and machine actionable outputs, i.e. as complete outputs that bring validated information, qualified references and automations to the table to assist the processes of collecting, documenting and publishing your data.

The **Argos Community Calls** will run **every last Wednesday of the month at 14.00 CEST**, starting from June 29th!

https://www.openaire.eu/argos-community-calls

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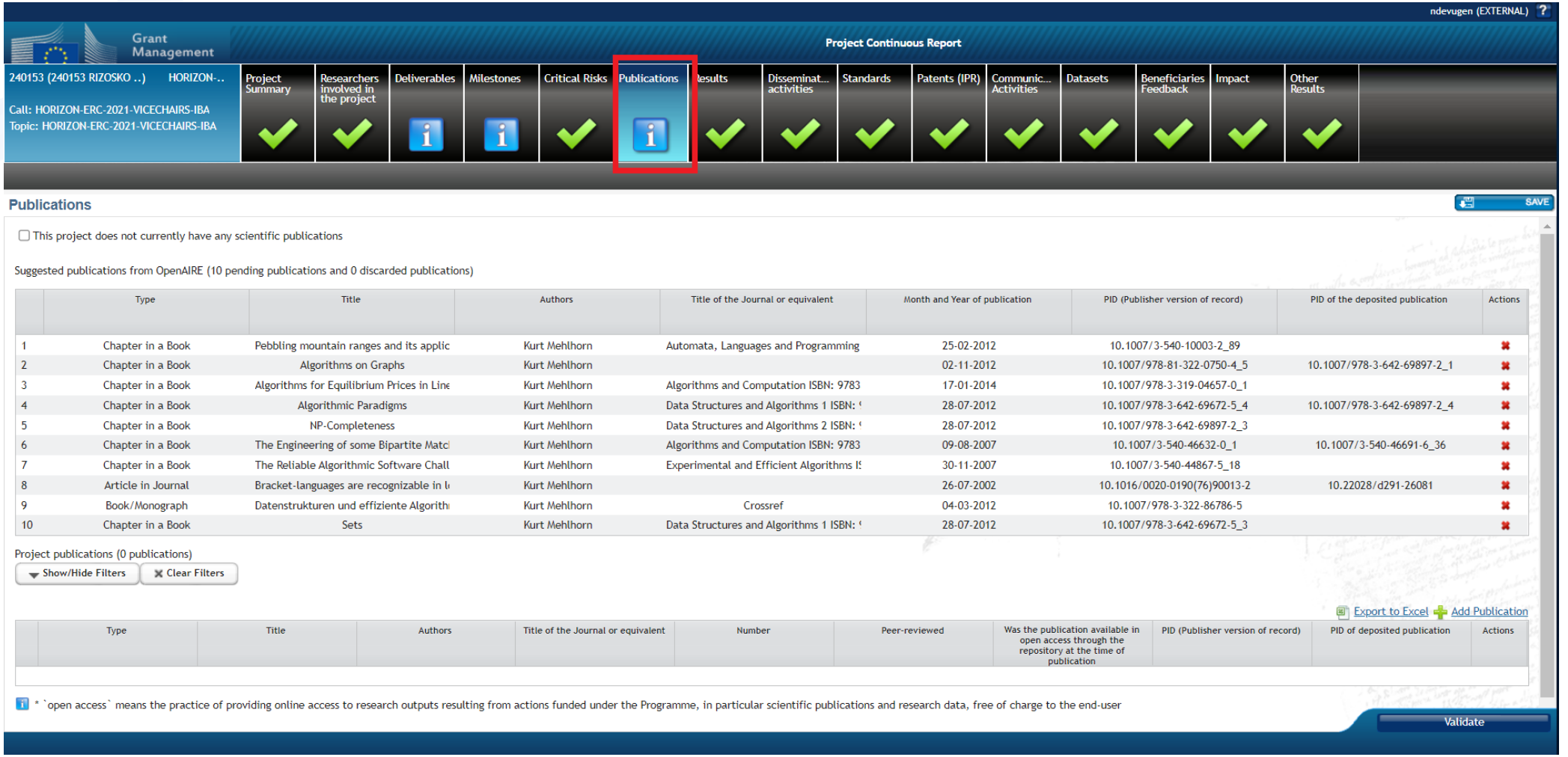
Reporting and monitoring

Reporting - Monitoring

- Extensive reporting of Open Science practices:
  - Structured reporting of requirements regarding OA
  - Free-text reporting of encouraged Open Science practices
- Monitoring by project officers and reviewers in periodic reviews
- Monitoring of the FP through Key Impact Pathways (KIPs)

Slide adapted from Alea López de San Román (2021) under CC-BY 4.0 https://doi.org/10.5281/zenodo.4681073

EC Participant Portal – Continuous reporting



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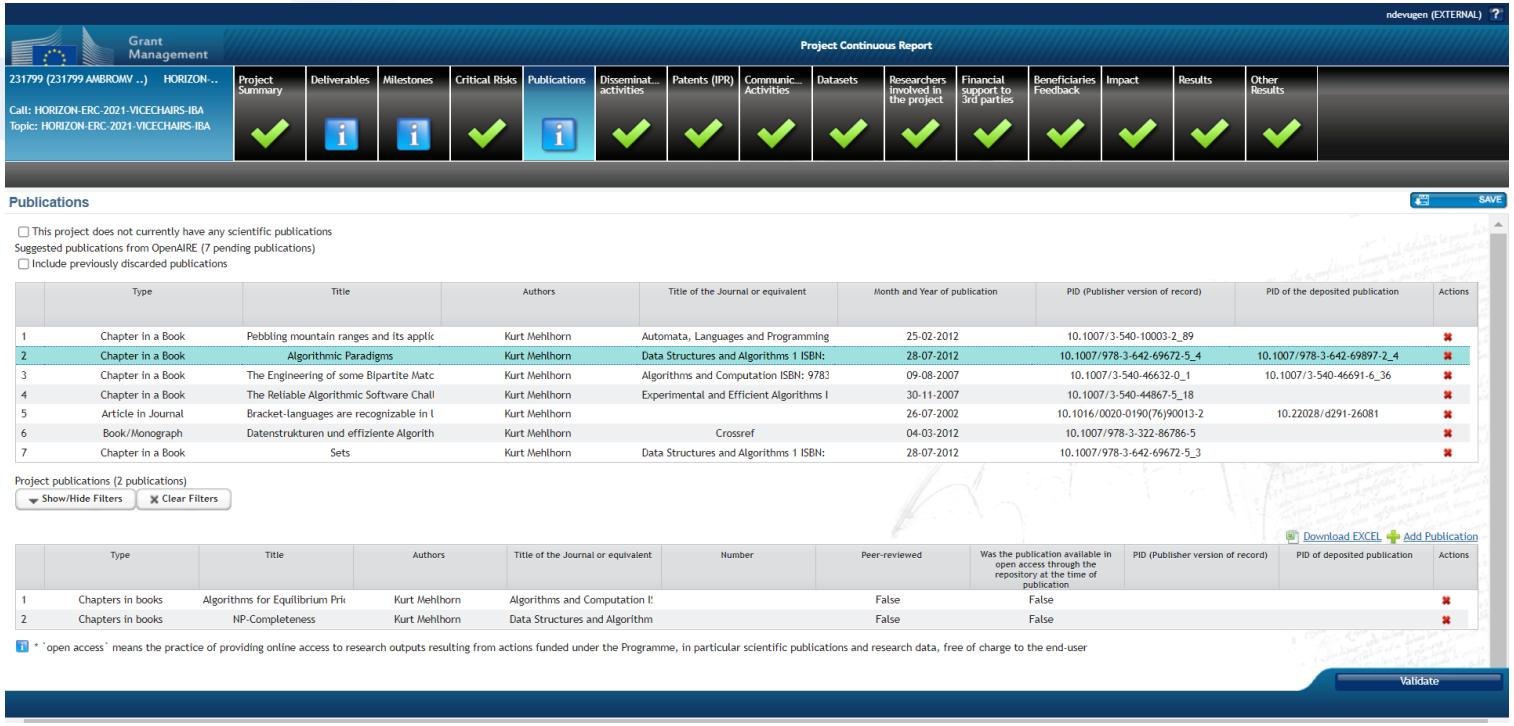
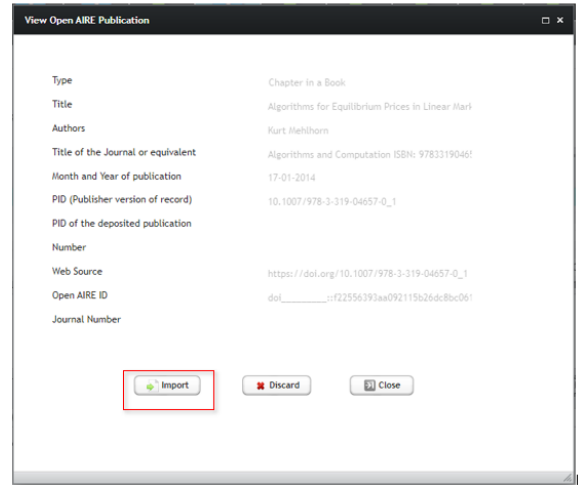
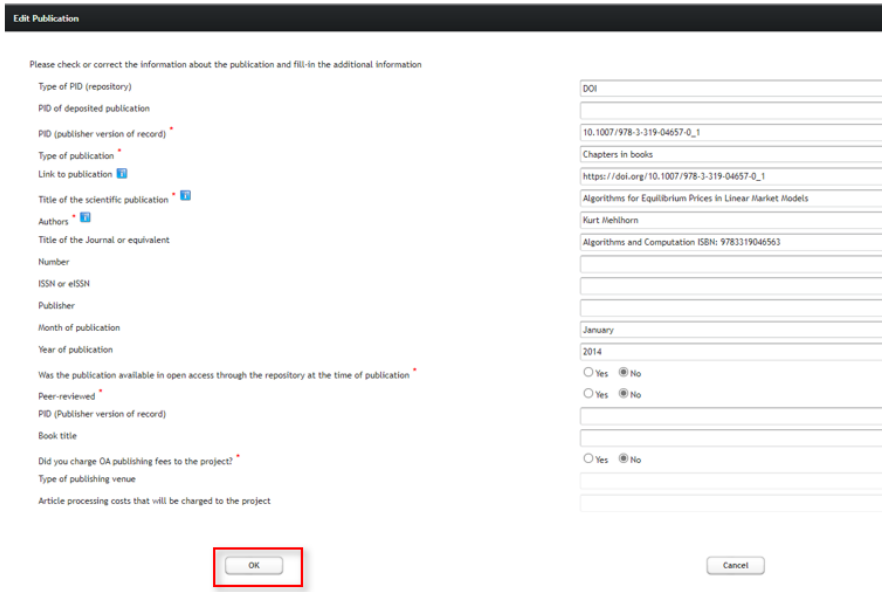
Publications







https://webgate.ec.europa.eu/funding-tenders-opportunities/pages/viewpage.action?pageId=34472316

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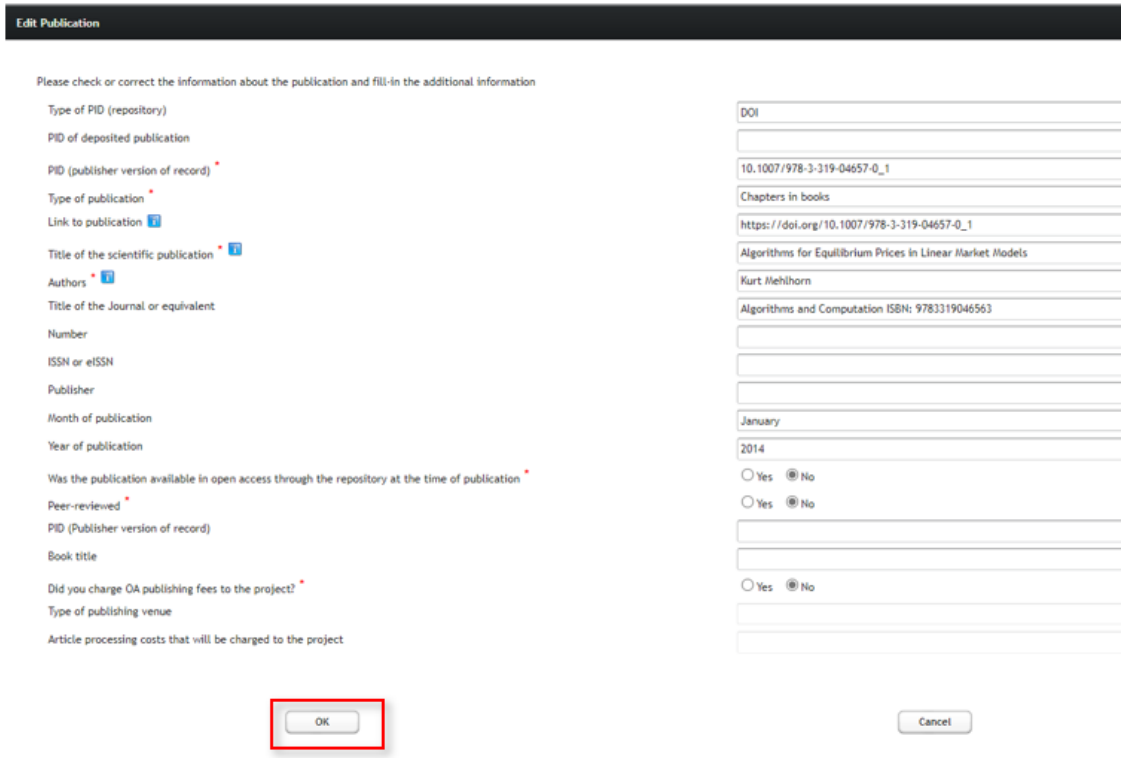
Publications

- "Type of PID" = unique URL given by the repository or the publisher
- "PID of deposited publication" = URL to the repository where AAM/VoR is archived
- "PID (Publisher version of record)" = URL to the place where it was published (e.g. given by the journal)
- "Article processing costs that will be charged to the project" – remember that OA fees to publish in a non-full-OA journal/platform cannot be charged to the project



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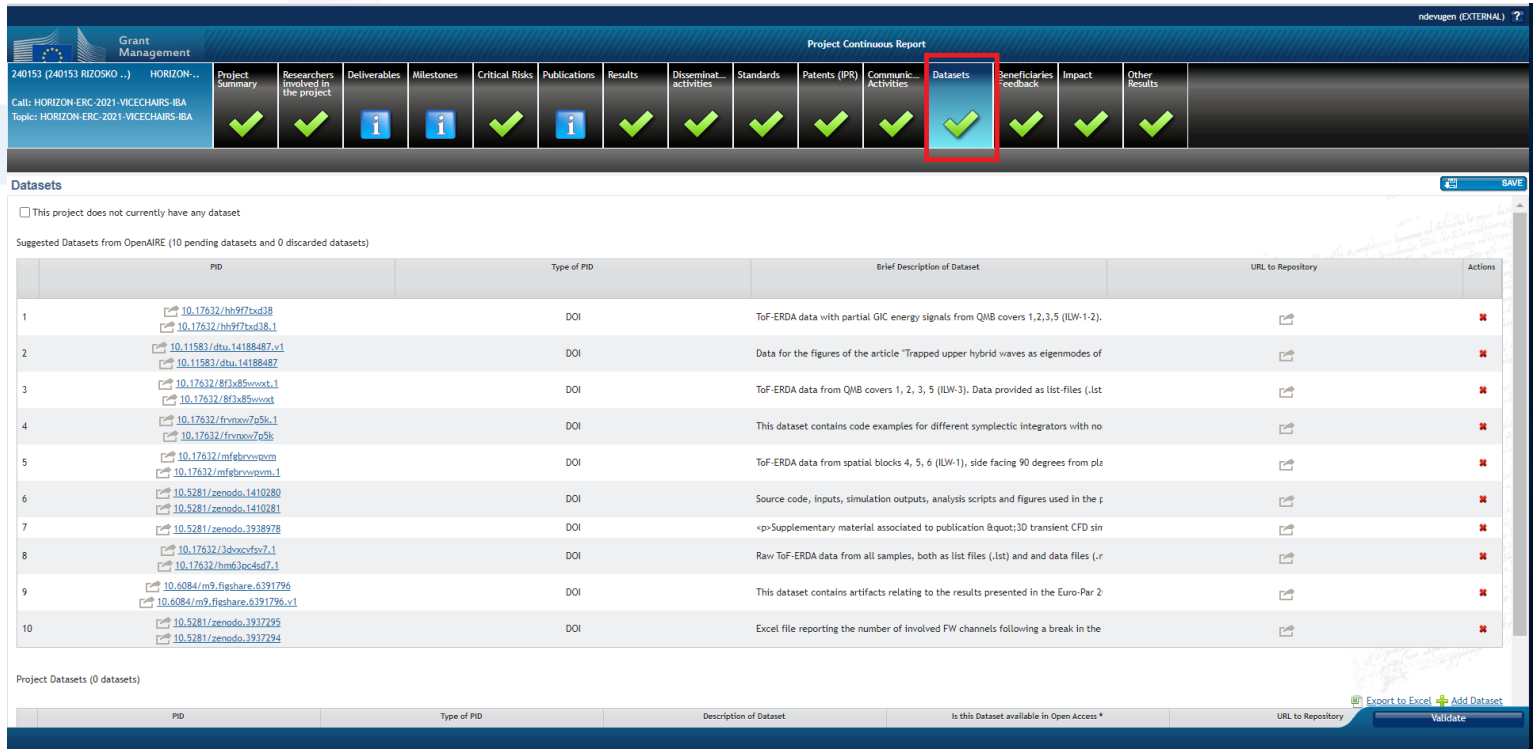
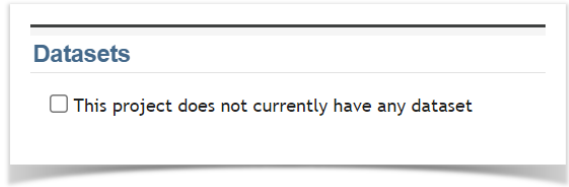
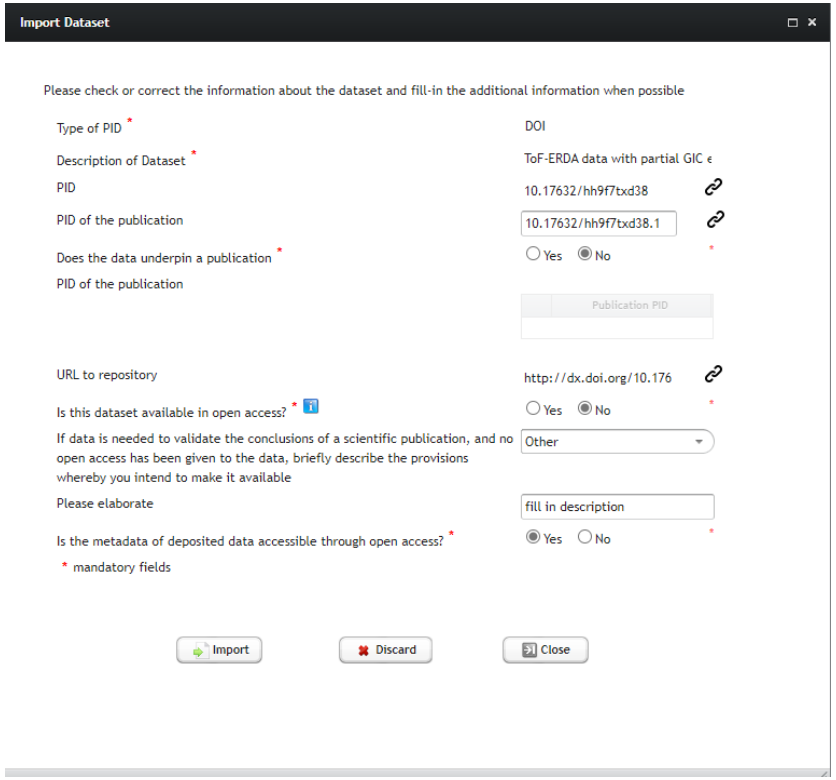
Datasets







https://webgate.ec.europa.eu/funding-tenders-opportunities/pages/viewpage.action?pageId=25559674

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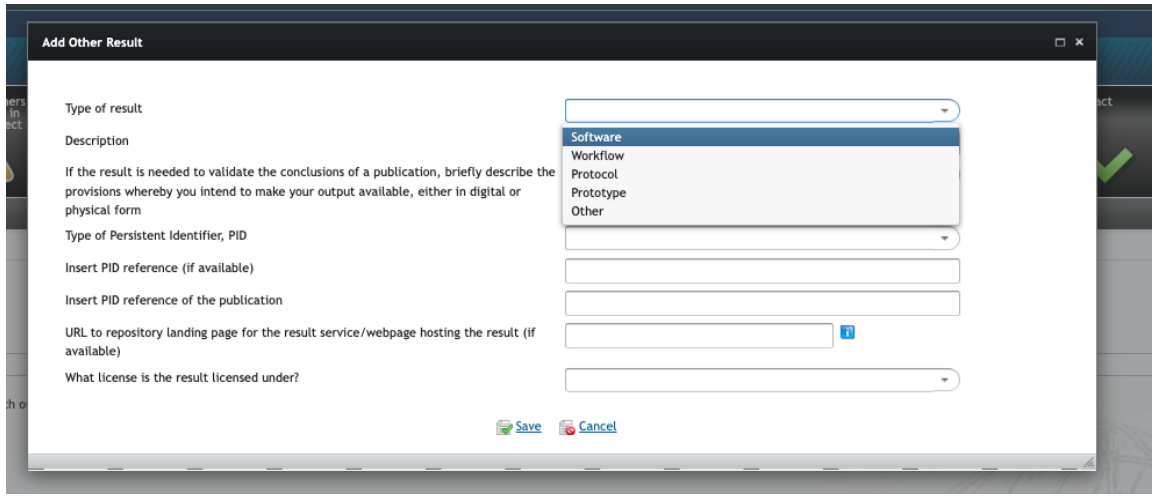
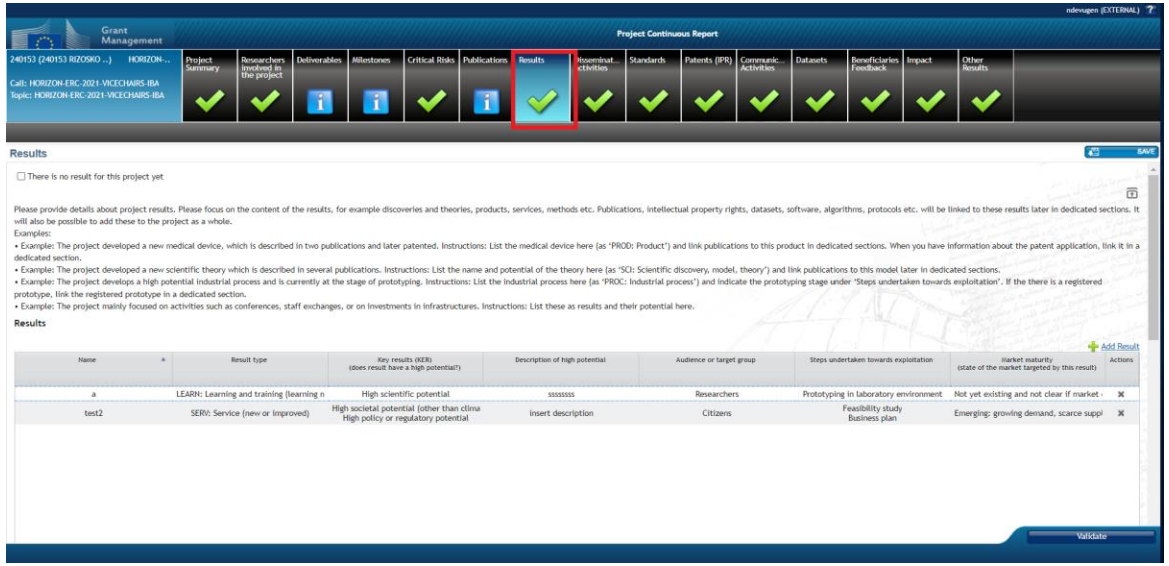
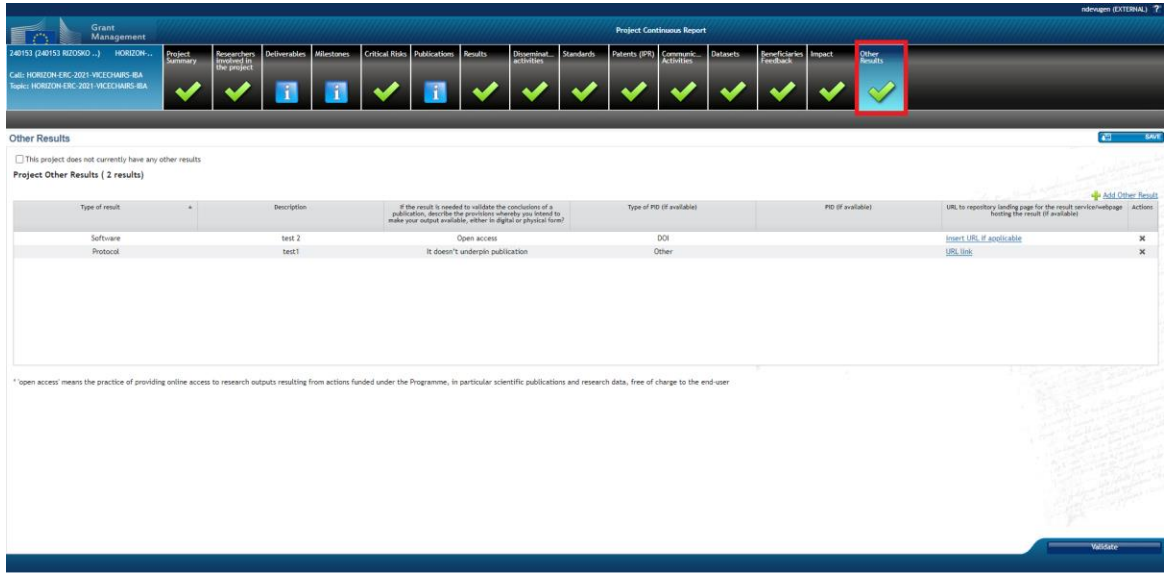
Results vs Other Results

- 'Results' tab focused on the content of the results: discoveries and theories, products, services, methods, etc.
- 'Other Results' tab is for reporting about software, workflows, protocols, prototypes, etc.







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www.openaire.eu

Webinar|
19 March 2024

Horizon Europe grant proposals

Jonathan England

Open Science parts

- PART A – Application form
  - List 5 publications, widely-used datasets, softwares, goods, services or any other achievements relevant to the call
- PART B – Project proposal – technical description
  - Under ‘Excellence’ – ‘1.2 Methodology’ (Open Science, RDM and management of other research outputs)
  - Under ‘Impact’ – ‘2.2 Measures to maximise impact’ (dissemination, exploitation and communication)
  - Under ‘Quality and efficiency of the implementation’ – ‘3.1 Work plan and resources’ and ‘3.2 Capacity of participants and consortium as a whole’

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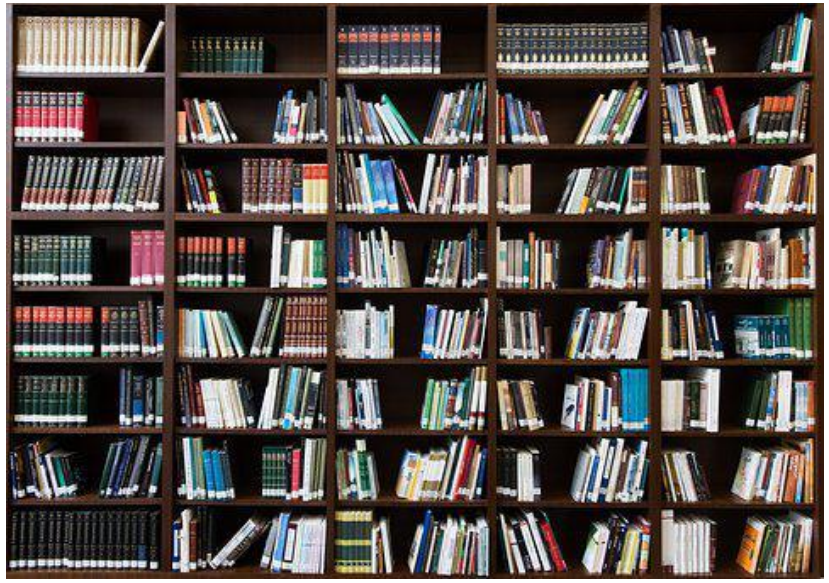
Publications

- Your publications cited should be available in OA (i.e. openly available on a trusted repository)
- Your publications cited will only be evaluated qualitatively (i.e. the Impact Factor of the journal is irrelevant)
- Give insights in where you are hoping to publish (e.g. Open Research Europe, full OA journals)



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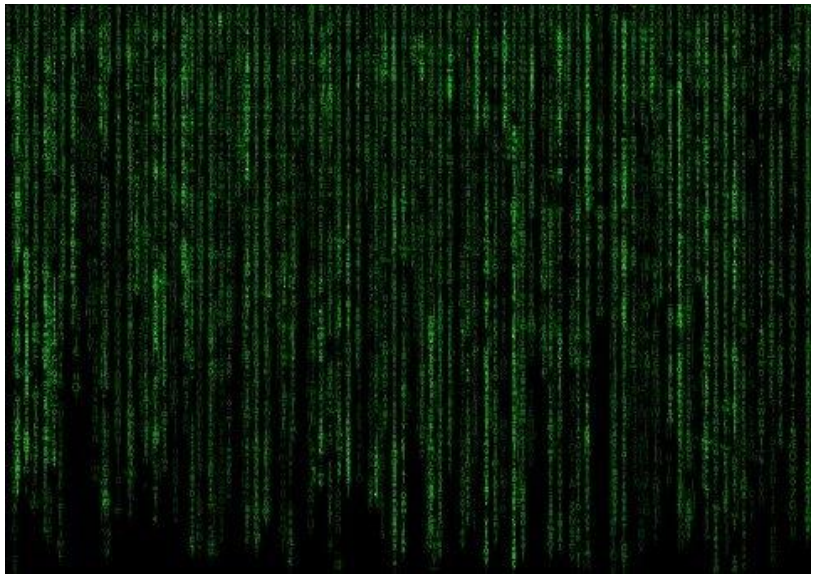
Research Data

- Your data listed should be FAIR, available on a trusted repository and a Persistent Identifier (e.g. DOI) provided
- An official DMP is not needed but the grant proposal does include aspects very similar to a DMP (e.g type and size of data, Persistent Identifiers, Intellectual Property Rights, interoperability, licences, curation, responsabilities
- Distinct Work Package on 'project management' that must include the DMP as a deliverable



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Other aspects eligible in the budget

- “engagement of citizens, civil society and end-users” – citizen science and participation in crowdsourcing activities
- Data curation costs
- Article Processing Charges (hybrid journals are not eligible)

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Writing tips

- Be as specific as possible
- Don’t let the project officer dig for information
- You do not need to explain what Open Access, FAIR data, Open Science, etc. mean. Focus on what concretely you will do

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Special cases

ERC

- No explicit evaluation or requirement to describe Open Science practices; but if included, will (implicitly) positively affect assessment of 'scientific excellence'
- ERC projects do not have scientific work packages or deliverables.
- But now requires a "Research Data Management" WP, with "Data Management Plan" as the one deliverable (type "R – Document, report" with due data M6)

ERC DMP template

European Research Council
Established by the European Commission

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MSCA

- Underlying principles: Open Science, Responsible Research & Innovation
- Award criteria will consider the “soundness of the proposed methodology” **(‘Excellence’ criteria** weighing 50% of the evaluation) which must consider “the quality of Open Science practices”
- **Training activities** and **Career Development Plan** must address key transferable skills “fostering the culture of Open Science, innovation and entrepreneurship” and prepare to the increase in “research collaboration and information-sharing” (e.g. collaborative tools, OA, open data, FAIR data, public engagement, citizen science)

MARIE CURIE **ACTIONS**

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Open Science recommended practices

Evaluation

- Mandatory Open Science practices – score will be lowered for not sufficiently addressing them unless duly justified
- Recommended Open Science practices – **no impact on score** if not addressed but score will be increased if sufficiently addressed
- Open Science practices listed in the template for proposals (section Excellence > Methodology) but is a non-exhaustive list

de San Román (2021). Open Science in Horizon Europe. Train-the-trainer workshop. Zenodo. CC-BY 4.0 https://doi.org/10.5281/zenodo.5549524

Open Science practices

What?	How?	Mandatory in all calls/recommended
Early and open sharing of research	Preregistration, registered reports, preprints, etc.	Recommended
Research output management	Data management plan (DMP)	**Mandatory**
Measures to ensure reproduciblity of research outputs	Information on outputs/tools/instruments and access to data/results for validation of publications	**Mandatory**
Open access to research outputs through deposition in trusted repositories	• Open access to publications • Open access to data • Open access to software, models, algorithms, workflows etc.	• **Mandatory** for peer-reviewed publications • **Mandatory** for research data **but** with exceptions ('as open as possible…') • Recommended for other research outputs
Participation in open peer-review	Publishing in open peer-reviewed journals or platforms	Recommended
Involving all relevant knowledge actors	Involvement of citizens, civil society and end-users in co-creation of content (e.g. crowd-sourcing, etc.)	Recommended

- Open science practices listed in the template for proposals (section excellence>methodology)
- Non-exhaustive list
- Mandatory in all calls: Model Grant Agreement or call requirement; all the rest recommended

European Commission

de San Román (2021). Open Science in Horizon Europe. Train-the-trainer workshop. Zenodo. CC-BY 4.0 https://doi.org/10.5281/zenodo.5549524

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Pre-registration

- Quantitative evaluation of research outputs has pushed towards less responsible research practices and the replication crisis (e.g. data dredging/p-hacking, cherry picking, HARKing [Hypothesising after the results are known])
- Pre-registration = “practice of publishing the plan for a study, including research questions/hypotheses, research design, data analysis before the data has been collected or examined” (FORRT)
- Some research domains have standard procedures in place; e.g. pre-registration of clinical trials, check ECRIN: https://ecrin.org/

https://www.cos.io/initiatives/prereg

Nosek et al. (2018). The preregistration revolution.

https://doi.org/10.1073/pnas.1708274114

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Pre-prints

- Traditional scholarly publishing is usually time-consuming and slow
- Preprints allow authors to share their results ahead of peer-reviewing on preprint servers
- Faster dissemination and broader access to research outputs, opportunities for early feedback
- Visible outputs for early-career researchers, can increase employability

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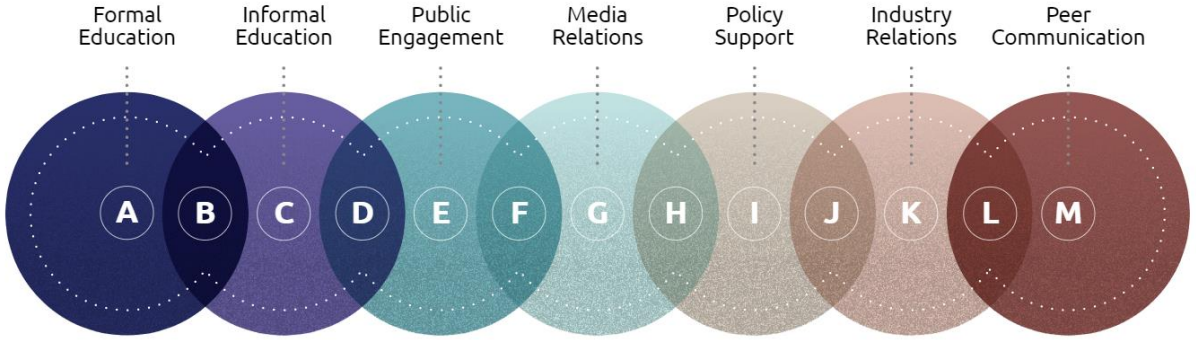
Public engagement

- Open and inclusive research and innovation includes society that can be listened to, awarded relevant input and influence during all stages of the research process (RRI Tools) – public engagement contributes to the democratisation of science
- Increases scientific literacy of the public, improves societal relevance of science, increases the support and uptake of research
- E.g. European Researchers' Night, Science is Wonderful, public talks, talks in schools or cultural centres, popular science books, social media, documentaries, TV shows, school activities, art/science projects



Pompea & Russo (2020). The role of astronomers in the astronomy education ecosystem. https://doi.org/10.48550/arXiv.2011.11350

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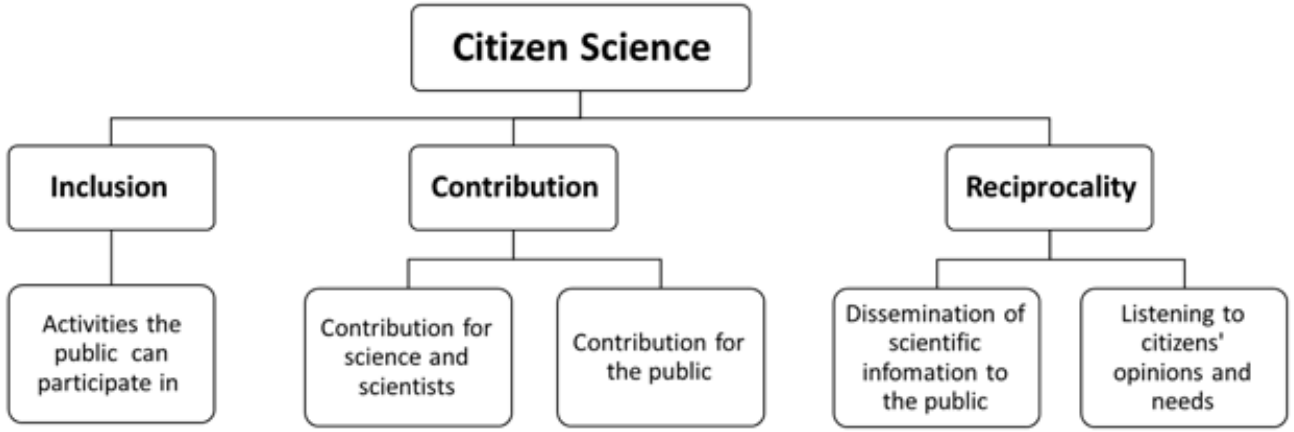
Citizen Science

- Projects that actively involve the general public, in any of the stages of research, acting as collaborators, contributors or project leaders (FORRT)
- Increases scientific literacy of the public, empowers citizens with scientific approaches, improves societal relevance of science, increases the support and uptake of research, explores new pathways for participatory governance
- European Citizen Science Association, EU Citizen Science platform
- E.g. Zooniverse, School Network Alerts Citizens analysing seismograms, in video games (e.g. Borderlands 3)… and many more



Golumbic et al. (2017). CC-BY 4.0. http://doi.org/10.5334/cstp.53

Final tips

Overall tips

- Design an Open Science strategy for your project.
- Include specific provisions in the Consortium Agreement about where publications and data will be deposited and who is responsible for doing this. Who will make sure that all outputs have been deposited in the appropriate repositories?
- Implement your Open Science strategy, report at reviews and provide updates.
- Keep track of issues, discuss the solutions.

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NEXT WEBINAR
Wednesday 03 July 2024 at 10:00 CEST

https://bit.ly/3wSXjJR

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THANKS

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