

PEDR, Open Science and the Data Management Plan

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Plan for Exploitation and Dissemination of Results including communication

- **strategic document** for the beneficiaries helping them to establish the bases for their intellectual property strategy, dissemination and exploitation activities.
- The PEDR follows the evolution of the project from the proposal until the submission of the final project report.
- Draft version in the proposal
- Initial version (deliverable at the beginning of the project):
 - Planned measures to maximize the impact of project results
 - Target groups (e.g. scientific community, end users, financial actors, general public) and proposed channels
 - Communication measures for promoting the project and its findings throughout the full lifespan of the project
 - Policy feedback measures to contribute to policy making
 - But also: a comprehensive and feasible strategy for the management of the intellectual property and a
 convincing justification that exploitation is still in the Union's interest, if it is expected primarily in nonassociated third countries

Updated or confirmed Plan for the Exploitation and Dissemination of Results in the periodic report or as agreed in the GAP.



Plan for Exploitation and Dissemination of Results Table of Content

Executive Summary

- Project in short
- Scope of the Dissemination and Communication Plan

Dissemination Plan

- Dissemination strategy
- Target audience
- Stakeholders and Networks
- Open Science practices
- Data Management

Communication Plan

- Tools and channels
- Dissemination material online and offline
- Messages
- Website
- Partner's websites
- Social Media
- Press and Media
- Intermediaries, influencers
- Utilizing EC channels
- Utilizing national platforms

- Visibility of EU funding
- Networking and collaboration
- Event organisation and participation

Visual Identity

Implementation Plan

- Timeline
- Budget
- KPIs
- Continuity and Document Maintenance
- Distribution of Tasks
- Safety measures

Reporting and Monitoring

- Targets and timeline
- Reporting table instructions

Innovation management

- IPR arrangements and Exploitation routes individual/joint
- Potential geographical coverage and economic size of the target markets

- Potential users, main competitors and competitive advantages
- Analyses on the state of the art
- Analyses on the intellectual property that is needed and will be brought to the project
- Facts and figures on the planned exploitable results and their areas of application and intellectual property protection
- Description of the exploitation roadmap and business model

Annexes

Guidelines for partners

- Communication Toolkit
- Reporting table for partners
- Preliminary list of events
- Newsletter and press release schedule
- List of relevant projects and initiatives
- List of supporting organisations (Lol)
- Dissemination and communication contact points at partners

Open ScienceThe origins

Open Science

 approach based on cooperative work and systematic sharing of knowledge and tools as early and widely as possible

Responsible Research and Innovation (RRI)

- = societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole R&I process to better align both the process and its outcomes with the values, needs and expectations of society.
- Public engagement
- Gender equality
- Fthics
- Open Science
- Science education
- Governance



Open Science The 3 Os

Open Innovation

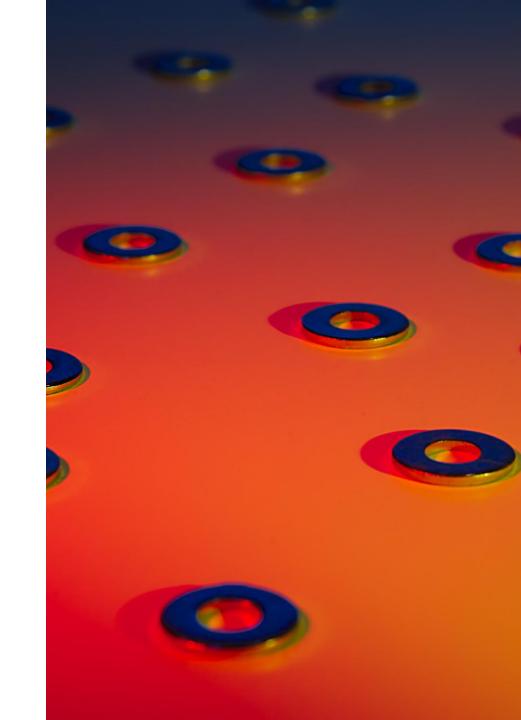
✓ in your methodology for collaboration with stakeholders you highlight how that leads to open innovation

Open Science

- new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools
- ✓ practices like data management

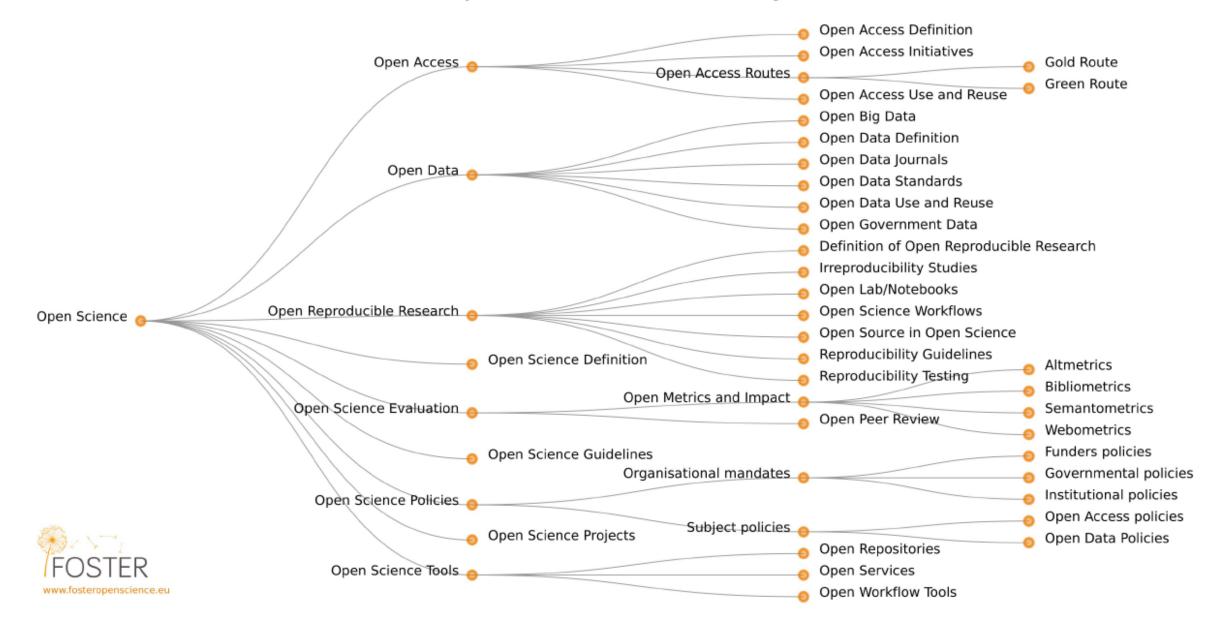
Open to the World

 consider the existing international collaborations, the EU's regional and bilateral agreements



Open Science Taxonomy





Legal obligationsGA Art 17 + Annex 5

Open Access to scientific publications

The beneficiaries must ensure open access to peer-reviewed scientific publications relating to their results. In particular, they must ensure that:

- at the latest at the time of publication, a copy of the published version or the final peer-reviewed manuscript accepted for publication, is deposited in a trusted repository for scientific publications
- immediate open access is provided to the deposited publication via the repository, under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights
- information is given via the repository about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication.

Metadata of deposited publications must be open under a Creative Common Public Domain Dedication (CC o) or equivalent, in line with the FAIR principles.



Legal obligationsGA Art 17 + Annex 5

Research Data Management

The beneficiaries must manage the digital research data generated in the action ('data') responsibly, in line with the FAIR principles and by taking all of the following actions:

- establish a data management plan ('DMP') (and regularly update it)
- as soon as possible and within the deadlines set out in the DMP, deposit the data in a trusted repository
- as soon as possible and within the deadlines set out in the DMP, ensure open access — via the repository — to the deposited data, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CCo) or a licence with equivalent rights
- provide information via the repository about any research output or any other tools and instruments needed to re-use or validate the data.

Metadata of deposited data must be open under a Creative Common Public Domain Dedication (CC o) or equivalent (to the extent legitimate interests or constraints are safeguarded), in line with the FAIR principles.



Legal obligationsGA Art 17 + Annex 5

Additional practices

- Where the call conditions impose additional obligations regarding open science practices
- Where the call conditions impose additional obligations regarding the validation of scientific publications, the beneficiaries must provide (digital or physical) access to data or other results needed for validation of the conclusions of scientific publications
- Where the call conditions impose additional open science obligations in case of a public emergency, the beneficiaries must (if requested by the granting authority) immediately deposit any research output in a repository and provide open access to it under a CC BY licence, a Public Domain Dedication (CC o) or equivalent. As an exception, if the access would be against the beneficiaries' legitimate interests, the beneficiaries must grant non-exclusive licenses —under fair and reasonable condition. This provision applies up to 4 years after the end of the action.



Open ScienceMandatory practices (in line with GA)

- Open access to scientific publications
- Management of research data in line with FAIR principles
- Information about research outputs/tools/instruments needed to validate conclusions of scientific publications or to validate/reuse research data
- **Digital or physical access to the results** needed to validate the conclusions of scientific publications
- Public emergency: immediate open access to all research outputs under open licenses / access under fair and reasonable conditions to legal entities that need the output to address the emergency



Open Science 'Optional' practices (recommended)

- Store or give access to research data on the European Open Science Cloud (EOSC)
- Early and open sharing of research (via preregistration, registered reports, preprints)
- Involving all relevant knowledge actors including citizens, civil society and end users in co-creation, codesign and co-assessment activities
- Output management beyond research data
- Participation in open-peer review



Open Science Evaluation

Excellence

 Methodology: how open science practices are implemented

Capacity of participants and consortium as a whole

How the consortium brings together the necessary disciplinary and interdisciplinary knowledge

Part A

- List up to 5 relevant publications, widely used datasets or other achievements
- Open access expected for publications
- Datasets are expected to be FAIR and 'as open as possible, as closed as necessary'

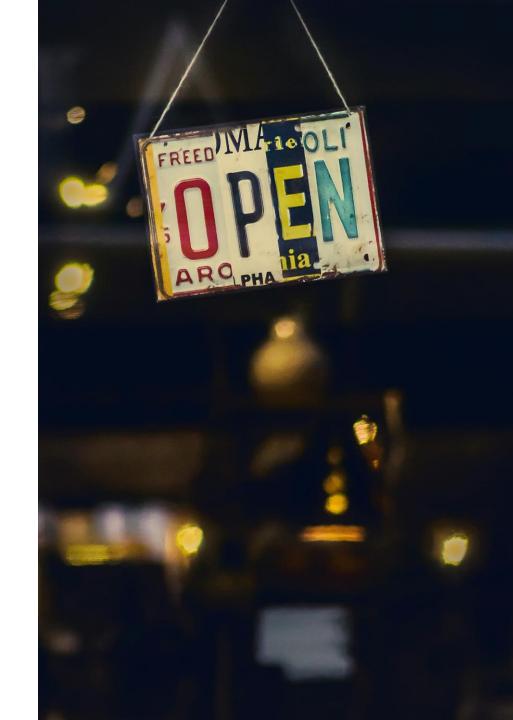


Open access

- online access at no cost for the end user of research outputs (e.g. scientific publications, data, software, algorithms, electronic notebooks etc.)

To consider:

- If scientific peer-reviewed publication are produces, they must be open access under open licenses (e.g. Creative Commons)
- Retain sufficient IPR
 - Retain the copyright on the work and grant, nonexclusive licenses to publishers
 - Put in place institutional policies to ensure copyright retention and compliance with the open access requirements
- Data should be deposited in a trusted repository as soon as possible after production
- 'As open as possible as closed as necessary'



Early and open sharing

= make available research, methodologies, outputs, and findings as soon as possible in the research process.

HOW?

- **Preregistration** in a public repository
- Registered reports: research articles that are peerreviewed and published in 2 stages
- Preprints: scientific manuscripts that are publicly shared prior to peer-review and journal application via preprint platforms

Resources

- ORION
- The Centre for Open Science
- Sherpa Romeo
- Preregistration repositories: OSF, AsPredicted, etc.
- Preprint servers: Zenodo, Preprints, ArXiv, SocArXiv, etc.



Open peer-review

- like peer-review but more transparent and accountable
- Authors and reviewers are aware of each other's identity
- Review reports are published alongside the relevant article
- The wider community is able to contribute to the review process
- Manuscripts are made immediately available in advance of the formal peer-review procedure
- Review or commenting on the final 'version of record' is made possible
- Direct, reciprocal discussion between authors and reviewers and/or between reviewers is allowed and encouraged
- Review can be decoupled from publishing when facilitated by a different organisational entity than the venue of publication (e.g. publishing platforms)



Reproducibility of results

 possibility for the scientific community to obtain the same results as the originators of specific findings.

Practices to increase reproducibility

- Specify the research design and methodologies applied
- Specify how you deal with negative results
- Make prior searches and checks on existing results and data to avoid duplication
- Specify how you are making use or preprints, preregistration
- Detail steps you will take to make your research process and tools transparent
- Mention what steps you will take to ensure validity and quality of the project process and results (e.g. peer review)
- Plan to use the DMP and make sure your data are FAIR



Citizen, civil society and enduser engagement

= refers to **opening of R&I processes to society** to develop better, more innovative and more relevant outcomes and to increase societal trust in the processes and outcomes of R&I

Activities to consider

- Co-design = workshops, focus groups to develop R&I agendas, roadmaps, policies
- Co-creation = involve citizens or end users directly in the development of new knowledge or innovations
- Co-assessment = assisting in monitoring and evaluation of the project progress and ensure interaction with citizens, civil society and end users on quality, utilization and impact of project outputs



Research Data Management The concept

Research Data Management (RDM)

= the **process** within the research lifecycle that includes the data collection or acquisition, organisation, curation, storage, (long-term) preservation, security, quality assurance, allocation of persistent identifiers (PIDs), provision of metadata in line with disciplinary requirements, licencing, and rules and procedures for sharing of data.

Elements to consider in your project's RDM:

- Persistent identifiers (PIDs) to ensure findability of research outputs and data
- Standardised metadata frameworks for the findability of research outputs and their potential reuse
- Trusted repositories for the deposition of and access to publications and research data



Research Data Management Data Management Plan

What is a Data Management Plan (DMP)?

- = your key to good data management
- Describes the data management life cycle
- The template = set of questions
- Living document (!)
- Deliverable 1st version by M6

Register your DMP as non-restricted public deliverable + publish it in journals, platforms or repositories (e.g. RIO, DMPOnline).

Research Data Management To address in your DMP

- Data set description: what kind of data is your project generating or reusing? Estimate the size of the data set
- Standards and metadata: how do you structure your data and what protocols are you using?
- Name and persistent identifier for data sets: unique and persistent identifier and a stable link to directly access the data
- Curation and preservation methodology: how will you ensure the integrity of the data sets and for how much time? How will it be preserved and kept?
- Data sharing methodology: how can the data sets be accessed? Terms of use and license
- Research output management other than data and publications
- Related costs and personnel: data collection, documentation, storage, preservation, availability and reuse, person/team in charge

European Open Science Cloud (EOSC)

- = open trusted virtual cloud to enable researcher to store, share, process, analyze, and reuse research data, publications, and software across disciplines and borders.
- Use cases on <u>EOSC in Practice</u>
- EOSC community and stakeholders on <u>events</u> and <u>news</u> sections
- EOSC-Hub
- <u>Catalogue</u> & <u>Marketplace</u> for services and resources for researchers
- Training

Work programmes may require the use of trusted repositories federated in EOSC for depositing research data







Monitoring and reporting tips

- Partners report on dissemination activities they conducted
- Partners can provide suggestions for future events to attend in the next 3-6 months
- Partners collect any mentions of the project in the media
- Scientific publications are listed in a separate tab
- The final tab always includes target monitoring
- Regularly check the progress towards the targets (ideally, on a 6-monthly basis)

---Partner organisation Author/presenter (from the partner) Others involved (from the consortium) articles published in the popular press 2 SDU articles published in the popular press 3 UU blog post 4 RWTH **Business cards** 5 EM conference participation 6 JR Conference paper 7 SWU contact building 8 PU cooperation and exchange of information 9 VU direct emails 10 VMU discussion 11 UNL exhibitions 12 UNIRI interview launch of the website/wiki 14 leaflet distribution/ other dissemination materials 15 link on partners' websites mailing lists 17 media briefings other 19 poster presentation 21 press releases 22 press/media 23 scientific publications Exploi ... (+) Dissemination activities Web and Press Details

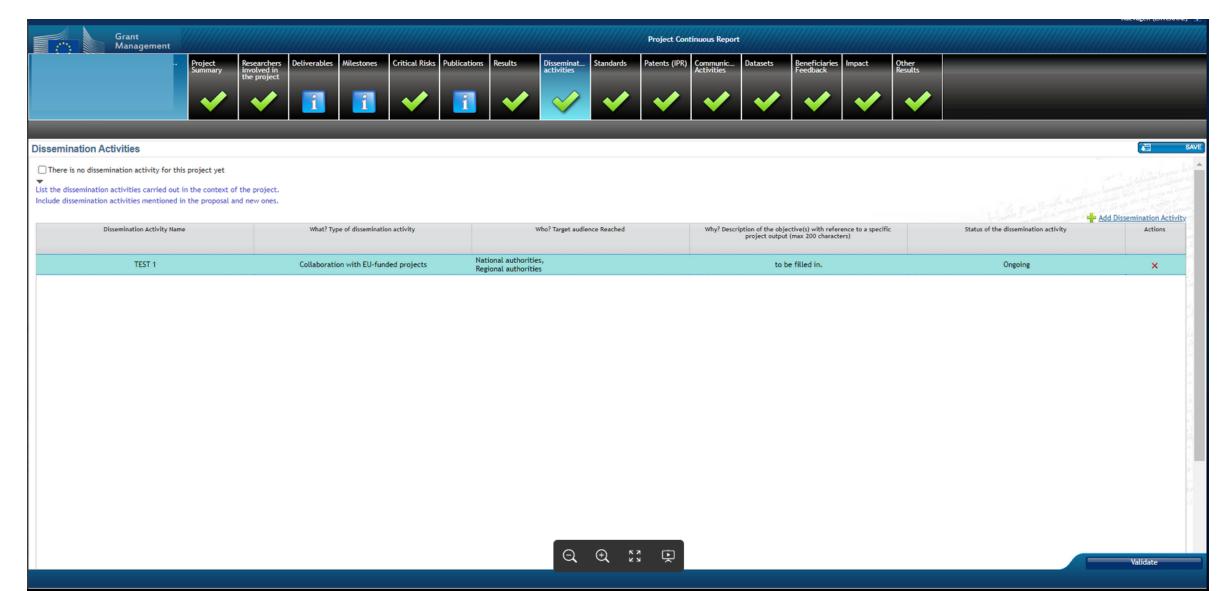
Why is this important?

EC reporting.. and.. Reviews



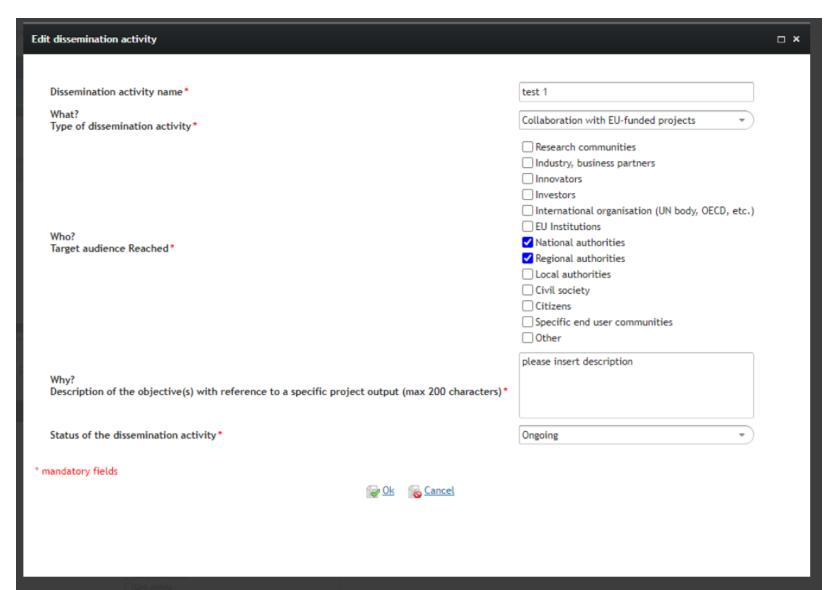
Dissemination activities (1)

Continuous reporting



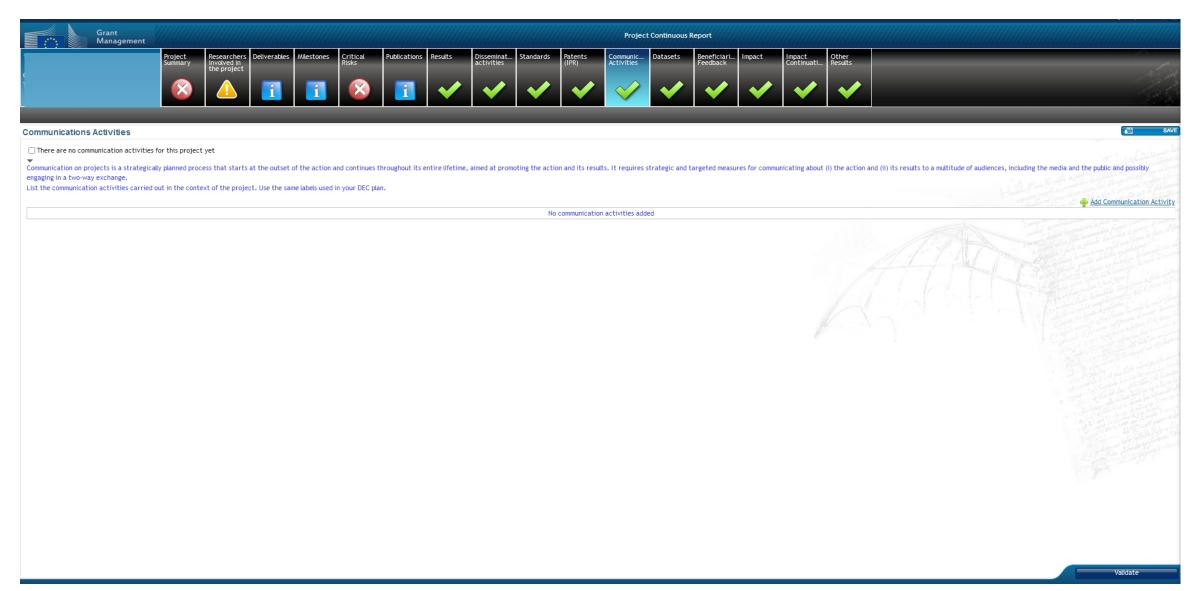


Dissemination activities (2)Continuous reporting



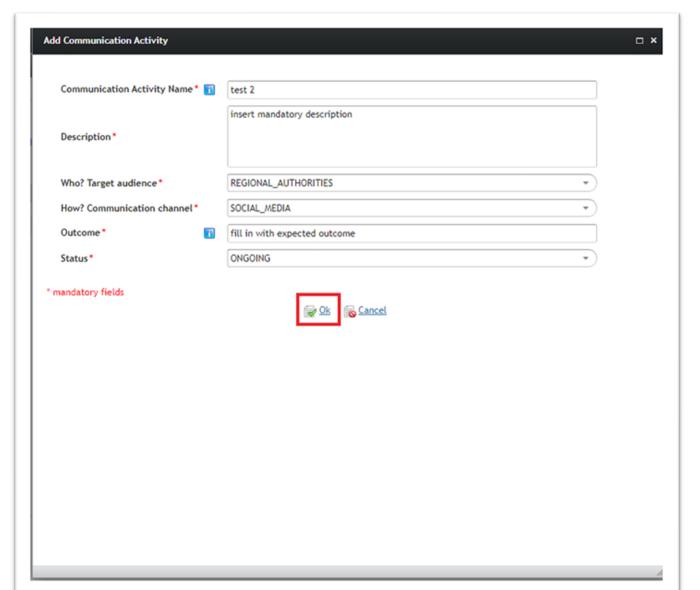


Communication activities (1) Continuous reporting



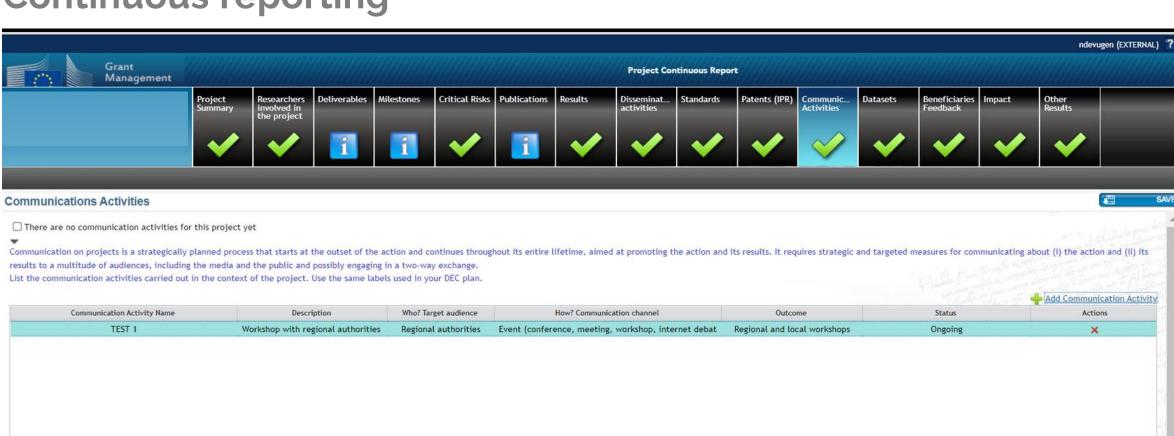


Communication activities (2) Continuous reporting





Communication activities (3) Continuous reporting



Dissemination and communicationInternal system

Dissemination reporting

- Each partner fills in activities they performed
- Recommended every 6 months (the latest)

Communication reporting

- Each partner fills in activities they performed
- Recommended every 3 months (the latest)

Press and media details

• All partners to report any mention of the project externally (interviews, cross-references, promotion...)







Results (1) Continuous reporting



Results

☐ There is no result for this project yet

Please provide details about project results. Please focus on the content of the results, for example discoveries and theories, products, services, methods etc. Publications, intellectual property rights, datasets, software, algorithms, protocols etc. will be linked to these results later in separate tables. It will also be possible to add these to the project as a whole. Examples:

- 1. The project developed a new medical device, which is described in two publications and later patented. Instructions: List the medical device here (as 'PROD: Product') and link publications to this product in dedicated sections. When you have information about the patent application, link it in a dedicated section.
- 2. The project developed a new scientific theory which is described in several publications. Instructions: List the name and potential of the theory here (as 'SCI: Scientific discovery, model, theory') and add relevant publications later in dedicated sections.
- 3. The project develops a high potential industrial process and is currently at the stage of prototyping. Instructions: List the industrial process') and indicate the prototyping stage under 'Steps undertaken towards exploitation'. If the there is a registered prototype, link the registered prototype in a dedicated section.
- 4. The project mainly focused on activities such as conferences, staff exchanges, or on investments in infrastructures. Instructions: List these as results and their potential here.

Results

No results yet

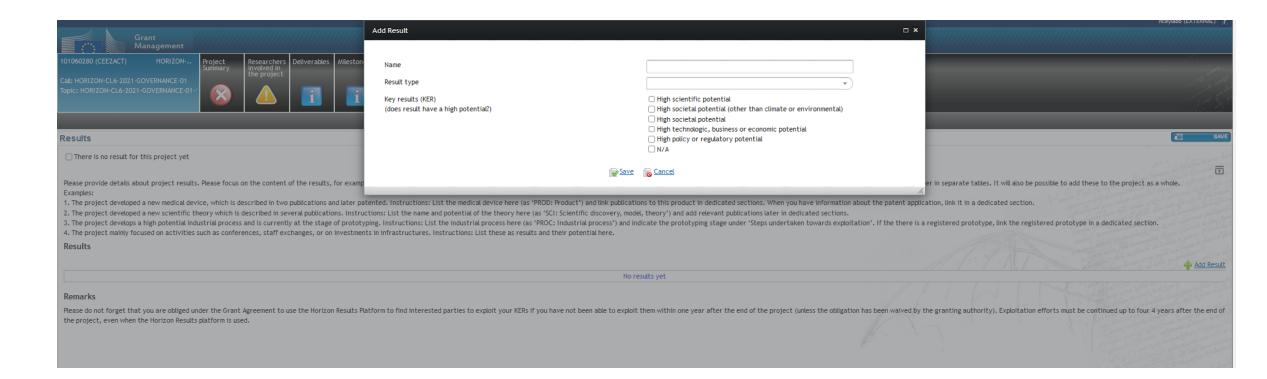
Add Result

Remarks

Please do not forget that you are obliged under the Grant Agreement to use the Horizon Results Platform to find interested parties to exploit them within one year after the end of the project (unless the obligation has been waived by the granting authority). Exploitation efforts must be continued up to four 4 years after the end of the project, even when the Horizon Results platform is used.



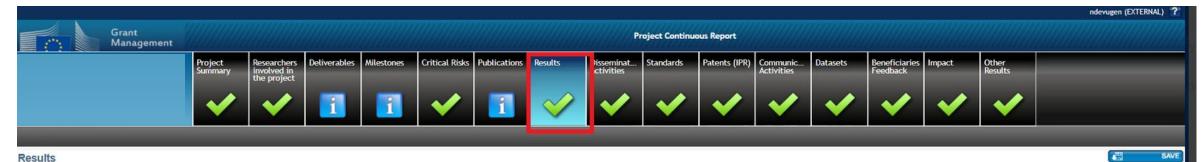
Results (2) Continuous reporting





1

Results (3) Continuous reporting



☐ There is no result for this project yet

Please provide details about project results. Please focus on the content of the results, for example discoveries and theories, products, services, methods etc. Publications, intellectual property rights, datasets, software, algorithms, protocols etc. will be linked to these results later in dedicated sections. It will also be possible to add these to the project as a whole.

Examples:

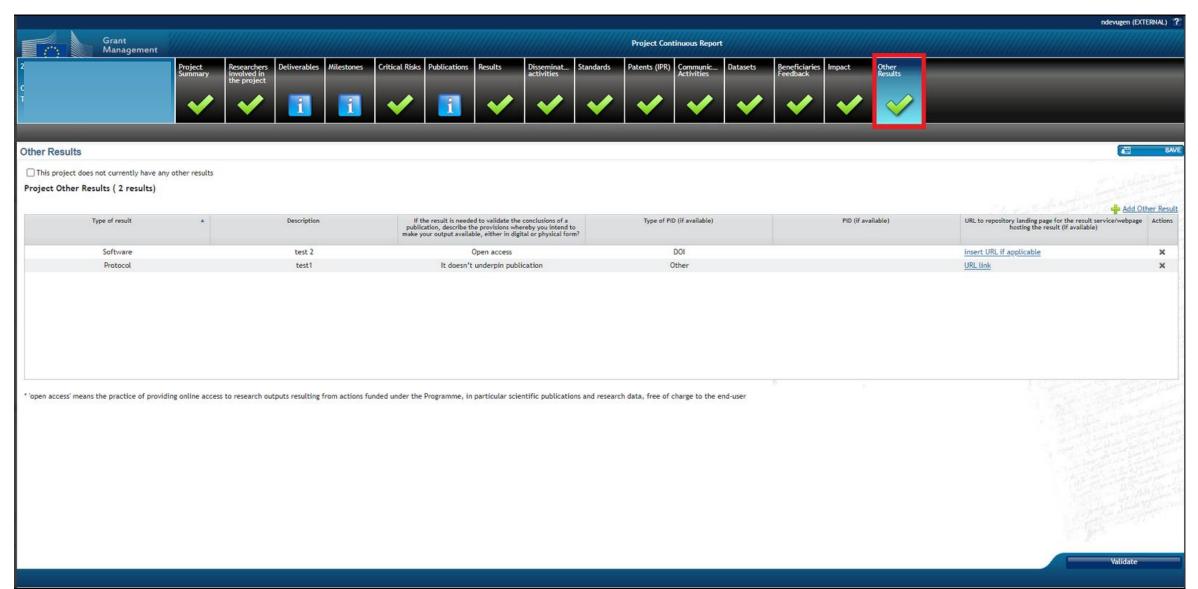
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- Example: The project mainly focused on activities such as conferences, staff exchanges, or on investments in infrastructures. Instructions: List these as results and their potential here.

Results

Actio	Market maturity (state of the market targeted by this result)	Steps undertaken towards exploitation	Audience or target group	Description of high potential	Key results (KER) (does result have a high potential?)	Result type	A	Name
×	Not yet existing and not clear if market	Prototyping in laboratory environment	Researchers	SSSSSSSS	High scientific potential	LEARN: Learning and training (learning n		a
×	Emerging: growing demand, scarce suppl	Feasibility study Business plan	Citizens	insert description	High societal potential (other than clima High policy or regulatory potential	SERV: Service (new or improved)		test2

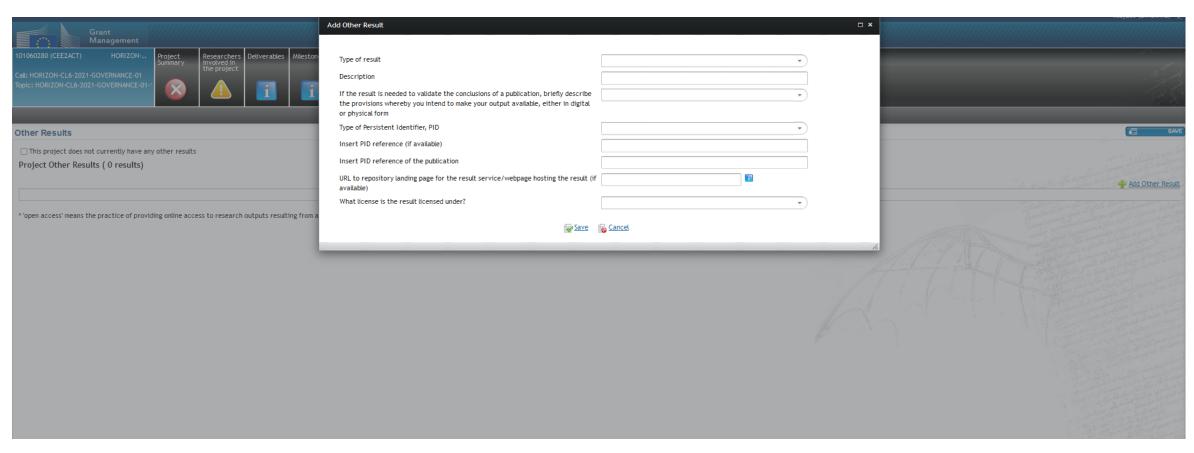


Other results (1) Continuous reporting





Other results (2) Continuous reporting



Tools and platforms

Digital profile

- ORCID (for researchers)
- CRIS (for organizations)
- <u>ImpactStory</u>
- Publons
- Open Science Framework (OSF)

OpenAIRE - Zenodo - Argos

- Putting your work into OpenAIRE-compliant repositories ensures that
 - you comply with H2020 mandate on Open Access
 - saves you time as you can import your project publications into the F&T Portal in one click

Open Research Europe

European Open Science Cloud (EOSC)



Open ScienceSources and guides

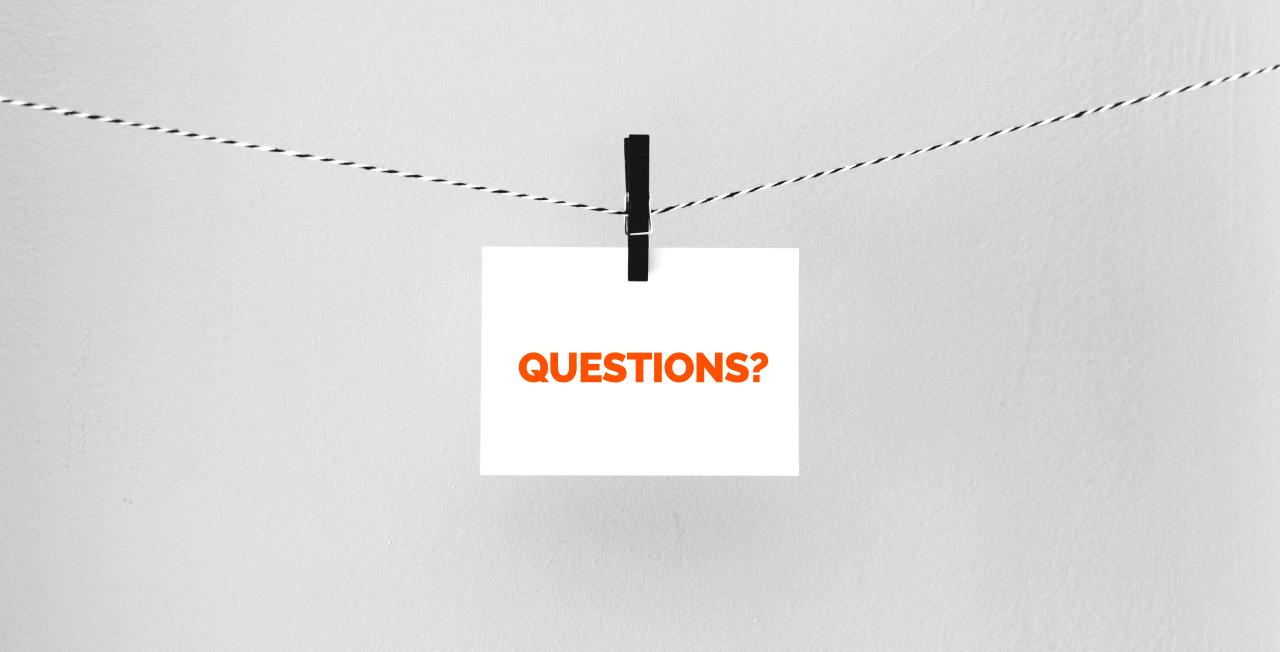
- <u>HE Programme Guide</u>
- OpenAIRE guide: Guiding you in Open Science https://www.openaire.eu/guides
- Research Data Alliance
 - https://www.rd-alliance.org/
 - http://rd-alliance.github.io/metadata-directory/
- Open Science Framework https://osf.io/
- Re3Data https://www.re3data.org/
- GitHub https://guides.github.com/
- Choosing a License https://choosealicense.com/
- FOSTER Open Science <u>https://www.fosteropenscience.eu</u>
- FIT4RRI project https://fit4rri.eu/guidelines/



Research Data Management Sources and guides

- Research data management (RDM) open training materials (Zenodo)
- FOSTER Open Science e-learning
- Data Management Plans
 - DMPonline
 - OneHealth EJP DMP Guide
 - Webinar (video: DOI: 10.5281/zenodo.2564974; slides: DOI: 10.5281/zenodo.2565750)
- EC Guide for FAIR data management in H2020







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