

ReCiPSS

D8.5-Open data management plan

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List of abbreviations

<i>Abbreviation</i>	<i>Explanation</i>
cc	Creative commons
CERN	Conseil Européen pour la Recherche Nucléaire (French: European Laboratory for Particle Physics; Geneva, Switzerland)
DOI	Digital object identifier
DP	Dissemination plan
EC	European Commission
EU	European Union
ODMP	Open Data Management Plan
OpenAIRE	Open Access Infrastructure for Research in Europe
ORCID	Open Researcher Contributor Identification
PP	Projectplace. Project management platform used in the consortium
ReCiPSS	Resource-Efficient Circular Product-Service-Systems

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1. Executive Summary

The project ReCiPSS is dedicated to follow the open access policy as part of the European Horizon 2020 program. For this purpose, all publications like articles, conference contributions and research data related to the project's outcomes that do not fall under confidentiality must be deposited in an open access repository. To achieve widespread dissemination, the results will be available on the ReCiPSS-website, linked to the open repositories *OpenAIRE* and *Zenodo* and distributed at scientific platforms linked via the individual partners' *ORCID* IDs.

This document summarizes the guidelines for publishing research data that result from the project as well as the necessary previous steps that need to be undertaken by each partner to be able to do so. The document differentiates between official documents and data on the one hand, and the representation of this data and the work leading to the results in different scientific social media and repositories on the other hand.

In ReCiPSS, research data will be stored on the *Zenodo* platform, which is integrated with *ORCID* and easily usable with *OpenAIRE*. *Zenodo* is funded by the *European Commission* and enables the public upload of research with open accessibility.

Reports, Journal publications, conference contributions and other written documents need to be published with open accessibility as well. To ease the accessibility after publishing under a suitable license, documents may be uploaded via the institutional repositories of the ReCiPSS partners, and linked to the *OpenAIRE* representation of the project, either from the publishers' open access repository or from the institutional repository. In *OpenAIRE*; both research data and written documents are centrally collected and linked among each other as well as to the responsible researchers.

To make sure the extent of information and collection of publications is consistent through different platforms such as *Mendeley*, *MyScienceWork* or *ResearchGate*, project partners create and use their *ORCID* ID (central, independent identifier) to store, export and import information on their scientific work, especially in the context of the project ReCiPSS.

2. Introduction

This document is a result from the task on managing open data and open access publications in ReCiPSS (Task 8.4), as it lays out the plan for open data management including the two main types of data that are:

1. Written documents, such as reports, journal articles, conference contributions etc.
2. Research data that underlie the written documents and deliverables that result from the project, independent of a specific publication.

In defining a process for handling those two kinds of outcomes, the project consortium seeks to fulfil the demand for publicly accessible and (re)usable publication of results.

2.1. Document Scope

The role of this document is to document the planned proceeding for publication of different kinds of data and documents towards the European Commission and the wider public as well as to be a guide for the project partners. Proceedings proposed and repositories defined in this document may be adjusted or changed in the course of the project due to new developments in the externally given possibilities or internal learnings.

The role of this document is not to make sure data is allowed to be published, no confidentiality clause are violated or the documents to be published fit the quality standards of the project. This document assumes that all relevant consortium-internal coordination and agreements have taken place and all necessary conditions for the publication of data or reports are met.

2.2. Methodology

To create this document, different options for hosting both research data (such as spreadsheets or databases) and written documents were analysed for their possibilities and the integration with each other as well as the compatibility with the chosen central hub for relevant information on the project: *OpenAIRE*. With the possibilities at hand, use cases were developed for different kinds of outcomes and usages of platforms to condense these use cases into a process flow chart.

2.3. Document Structure

This document is structured into three parts:

1. A presentation of the use cases and the resulting requirements towards an open data management process.
2. A presentation of the external services used.
3. Process flowcharts that guide the usage of the services and fulfil the initially formulated requirements.
4. An outlook on next steps and possible adjustments in the development of the open data management plan.

3. Use cases and requirements

The following sections will describe different use cases that require an open data management plan. The use cases serve the purpose of deriving the necessary means for the open data management in the project ReCiPSS, while the description raises no claim to completeness. Additional use of the services described are possible.

3.1. Use case descriptions

3.1.1. *Publication of a deliverable*

The project partners have worked on a deliverable for a specific work package. This deliverable is finalized and submitted to the EC already. Now they want to publish this deliverable, as it is categorized with the dissemination level “public”. They need to have a clear proceeding of where the document should be published and how the public access can be ensured.¹

3.1.2. *Publication of a conference contribution or journal article*

A project partner has worked on a deliverable that is already published through the project’s channels. She now wants to publish the methodology she developed for creating the content of this deliverable as an independent publication in a scientific journal or a conference.² The open data management plan needs to guide the publication with the correct “cc” license. Furthermore, a way needs to be defined that links the publication to the project and other publications resulting from it.

3.1.3. *Publication of research data (spreadsheet) or additional documents like PowerPoint slides*

A project partner published a deliverable report as well as a journal article on developments in ReCiPSS. The published written documents are based on an extensive set of data that were analysed and that need to be known in order to be able to recreate the scientific process. The algorithm for the data analysis was also developed, while it was too long to be included in the publication itself. The partner created a set of PowerPoint slides as a guide to use this data and understand the algorithm. The project partner needs to have a platform that the research data (the spreadsheet with the analysed data, the source code of the algorithm and the PowerPoint slides) can be uploaded to under a “cc” licence and that can be connected to both the journal article and the deliverable report, compatible with *OpenAIRE*.³

3.1.4. *Scientific exchange via a platform*

A project partner published both a deliverable report and a journal article with the respective data underlying the developments. Now, they want to add this information to their

¹ Concerning the publication of data and reports as public deliverables, the consortium ensures that sensitive information is not made public through a mutually defined proceeding: The deliverables are submitted to the EC following the internal review and quality assurance processes. The same draft is then uploaded again in PP to get consent from all partners that there is no sensitive information in it. At least 7 days are given for this review. If no response is received from a partner before the deadline, it is considered that the consent has been given by that particular partner and it is ok to make the deliverable public.

² The same applies for publications that origin from the project and may be independent from a certain deliverable.

³ The same applies for a set of slides presented e.g. at a peer group meeting or a conference as well as any other accompanying documents.

ResearchGate group so that their peers and interest groups are informed on the developments and where to find them. Apart from that, they appreciate the open discussion on such platforms that result from publishing there. They need to have a way of how to deal with such external, private researcher accounts that makes sure the latest data is always visible on all such platforms as well as on *OpenAIRE*. They should furthermore be connected, so that their peers can look up other publications from other partners of the ReCiPSS project.

3.1.5. External search for information about the project

A project partner's colleague heard about ReCiPSS and wants to know what it is about and if there are any current developments. Therefore, they look up the project on *Google* and find the ReCiPSS website with a description on the welcome-page as well as the deliverables listed. They now want to find out more relevant information, such as associated publications, other works and projects of the consortium partners and the data that was worked with. For them, different representations of the project, such as the *OpenAIRE* representation for access to all relevant data and the *LinkedIn* group or the *ResearchGate* group for discussions and further work of the involved researchers, need to be linked to from the project website.

3.1.6. Institutional repositories

Towards the end of a year, the librarian of a project partner's institution asks for the publications in the concluding year to put together the annual institution report. Therefore, publications, which are published under a creative commons open access licence, need to be uploaded to the institutions repository and categorized with the correct keywords. This upload to the institutional repository should also be linked to the *OpenAIRE* representation of the ReCiPSS project.

3.2. Requirements

Requirements that result from the analysis of the described use cases are listed in the following Table 1.

Table 1 Requirements towards the open data management plan

N ^o	Requirement
1	Publicly accessible publication repository for public deliverables
2	Publication guideline including licence for open access
3	Link publications from and on external providers to <i>OpenAIRE</i>
4	Describe where to upload research data, such as spreadsheets or source code
5	Link research data to <i>OpenAIRE</i>
6	Support the scientific exchange on external platforms such as <i>ResearchGate</i>
7	Enable data export and import to ease actuality of data on different platforms via a central source of information
8	Use and connect institutional repositories for written documents such as conference contributions or journal articles
9	Support the website as a central information hub on different repositories and publications

4. External services used

This chapter lists external services, such as research networks, hosting services and repositories that are used to fulfil the requirements described in 3.2.

4.1. OpenAIRE

OpenAIRE is an acronym standing for “Open access infrastructure for research in Europe”. *OpenAIRE* is an EU organisation that provides an open repository to link all research results from EU funded projects. It is part of the Horizon 2020 program (<https://www.openaire.eu/>). To use this repository and be compliant with the necessary open publication requirements, partners should make sure a journal’s or conference’s publication licencing is compatible with the *OpenAIRE* literature guidelines. All relevant information for researchers are given at <https://www.openaire.eu/guides>. The link to the ReCiPSS-project in *OpenAIRE* can be found at <http://s.fhg.de/recipss>.

4.2. Zenodo

Zenodo is a central research data repository funded by the *European Commission (EC)*, *OpenAire* and *CERN* to store any types of research data and datasets up to 50 GB (<https://zenodo.org/>). Besides the purpose of being a place to host large datasets, *Zenodo* also supports the upload of other scientific publications, presentations, videos or other kinds of data related to research. Uploaded data is endowed with a DOI and thus citeable and can be licenced with a cc licence or different models.⁴

4.3. ORCID

ORCID is a non-profit organization aiming to connect researchers and their scientific work. Seeking to make sure that e.g. typos in the name or the organization or changing names and titles during a scientific career do not lead to publications appearing to have been done by different researchers. A persistent digital identifier is used to link publications, projects, proposals etc. to the researcher instead of the name. On the *ORCID* platform, participants can link their publications to their personal information/profile. With an *ORCID* profile, they can also sign in and import their information on other scientific platforms. Using an *ORCID* ID ensures consistent information on all other platforms, when data does not need to be entered manually at each platform, but can be stored in the *ORCID* profile and imported or updated. (<https://orcid.org/>)

4.4. Creative Commons Licence

Creative Commons (cc) is an American non-profit organization that publishes different licence contracts for an author to define the right to use of his output to the public. The organization has released several copyright-licenses known as *Creative Commons* licenses free of charge to the public to use in cases as described in the previous sections. These licenses allow creators to communicate which rights they reserve, and which rights they waive for the benefit of recipients or other creators [1].

⁴ A guide on creative commons and different licences possible for open publication in European research is given at <https://www.openaire.eu/how-do-i-license-my-research-data>.

(<https://www.creativecommons.org>). Publications via *Elsevier* are e.g. open-access published using the creative commons license *CC BY-NC-ND 4.0* usually.⁵

4.5. Institutional repositories

Research organisations and universities usually have their own institutional repository to store research data in (apart from open repositories such as *Zenodo*). For *TU Delft*, *Masaryk University*, *KTH Stockholm* and *Fraunhofer*, the links are provided in Table 2 below. Those repositories should be used in ReCiPSS to store individual publications e.g. in journals at and afterwards link them to *OpenAIRE*.

Table 2 Institutional repositories

Partner	Column Title
TU Delft	https://repository.tudelft.nl/
Masaryk University	https://is.muni.cz/repozitar/?lang=en
KTH	http://kth.diva-por-tal.org/smash/search.jsf?rvn=1&dswid=244
Fraunhofer	http://publica.fraunhofer.de/star-web/ep09/index.htm

⁵ The licence used or offered by publishers such as Elsevier can vary and need not be a cc-license. For ReCiPSS-partners, it is important to verify that the licence offered is compliant with the Open Access definition (compare https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf). OpenAIRE advises to use a CC BY 4.0 license for literary work and a CC0 licence for databases or datasets (compare <https://www.openaire.eu/how-do-i-license-my-research-data>).

5. Process flow chart

To make the anticipated publication process easy to follow and comply with, this chapter organizes the individual steps for project partners into flow charts. The first section will highlight the necessary actions at the start of the project, before a first publication. The second section will highlight the process of publishing different kinds of data and written documents and include steps to be taken regularly throughout the project.

Adding to the tasks of all participants when finishing and publishing foreground, Figure 1 to Figure 3 also show the role of WP8 partners *KTH* and *FHG* to support the open data management plan as laid out in this document.

5.1. Steps at the start of the project

To be able to use the services highlighted in the sections above, research partners need to use *ORCID* as an unambiguous identifier for them and their work. Figure 1 shows the process of creating or updating this *ORCID* ID as a necessary preparatory step before publishing.

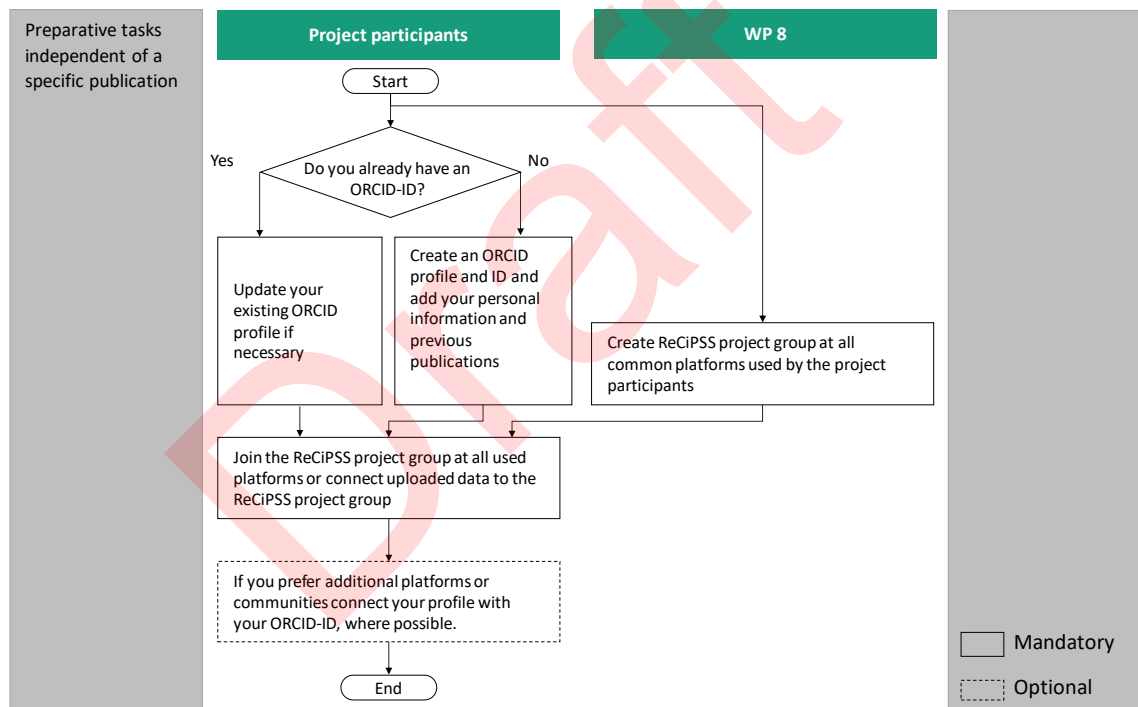


Figure 1 Process flow at project start

5.2. Steps when finishing documents to be published

During the project duration when finishing documents that are to be published, either as a public deliverable, or as a journal article, conference contribution or set of research data, it is important to make sure documents are uploaded at the right place and the connection to created groups and hubs, such as *OpenAIRE* or the project website, is guaranteed. The proceeding to be followed in that case is shown in Figure 2. It distinguishes between *research data or other documents and reports, public deliverables, restricted deliverables and publications via conference proceedings, journals or comparable channels*. For collecting the public deliverables in the same place as e.g. research data, a community at *Zenodo* was created, where public deliverables can be added additional to their representation on the projects

website, so that it can easily be embedded in the website via *OpenAIRE*. The link to this group is <http://s.fhg.de/zenodo>.

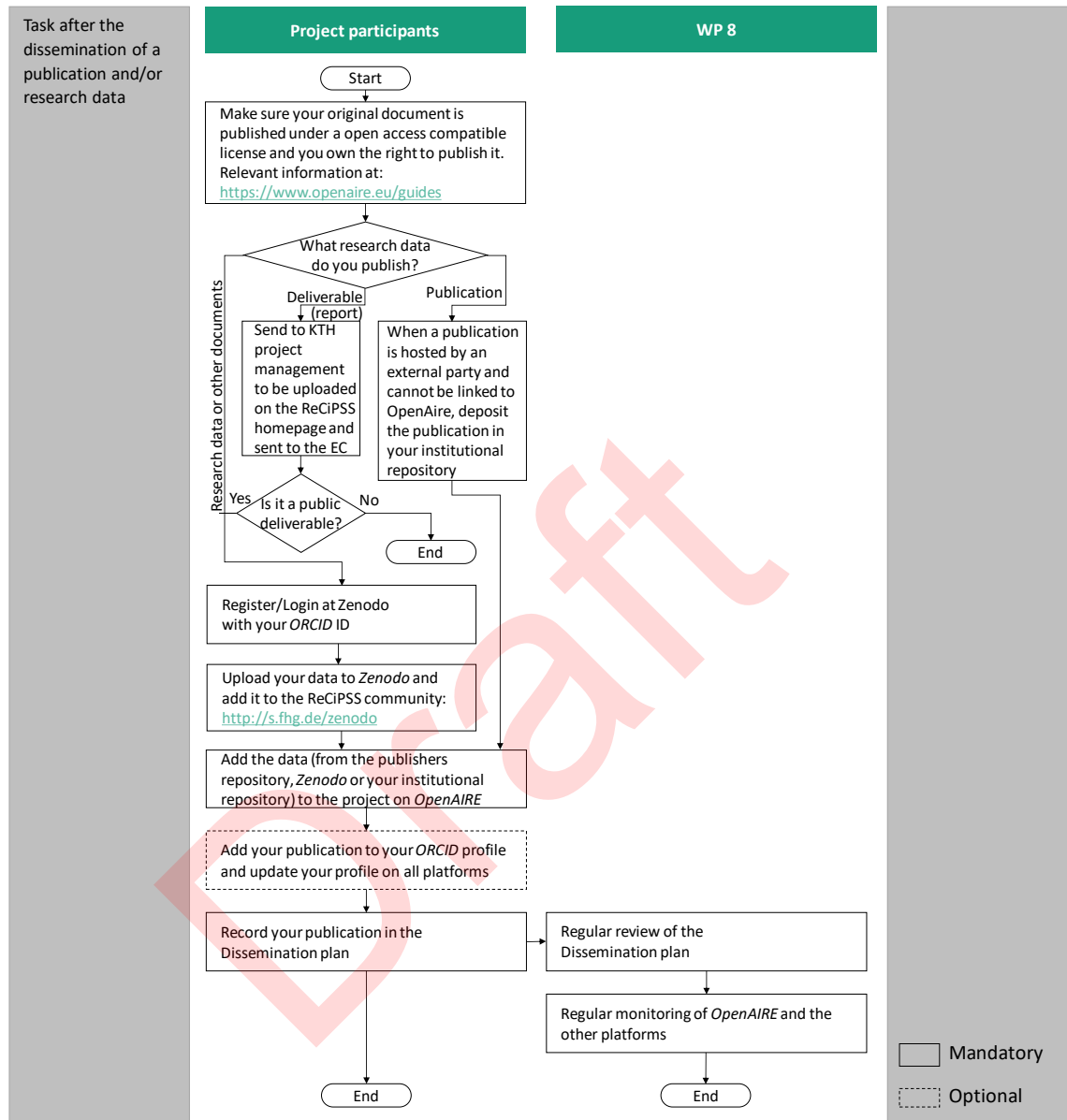


Figure 2 Publication of results – Overview

Apart from this process that can be followed during the project duration when a document or data need to be published, the following Figure 3 shows the task of regular data maintenance at *ORCID* and the open data management plan.

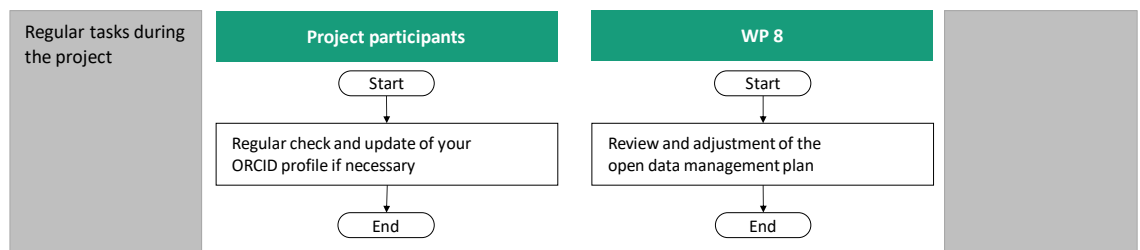


Figure 3 Regular data maintenance



Finally, Figure 4 shows a summarizing chart depicting the different services used and how they interact with each other, so that the ReCiPSS website can be used as a central hub to access all relevant information and publications of ReCiPSS.

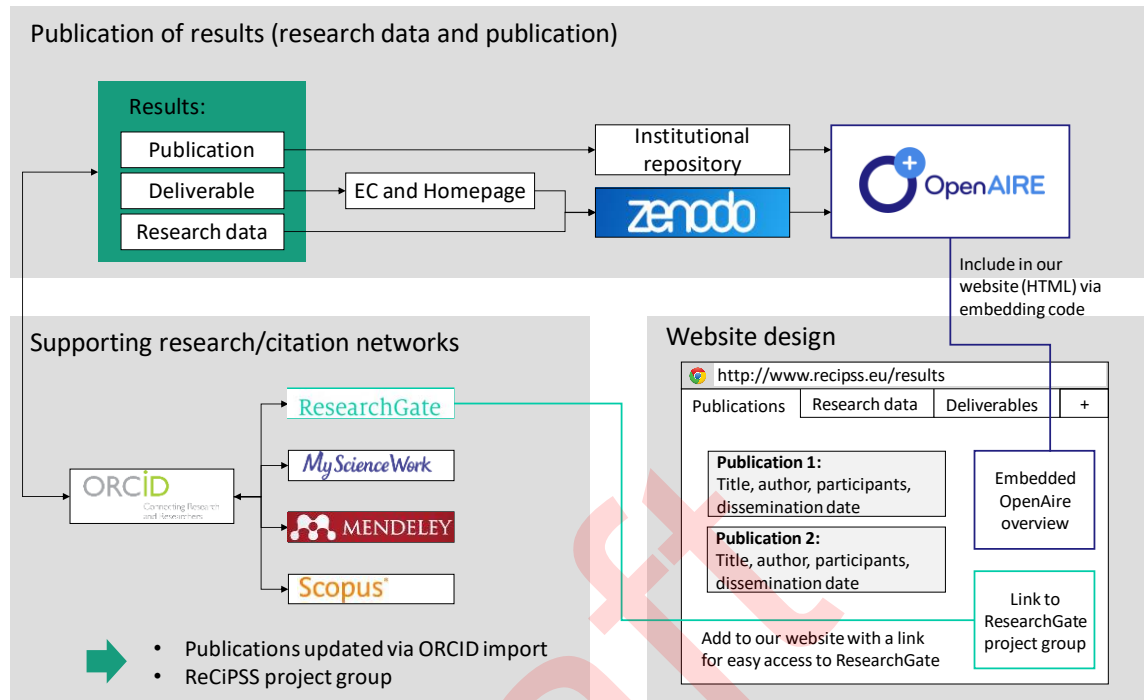


Figure 4 Overview of different data representations and use of services










In the general overview of Figure 4, the website embeds the project overview from *OpenAIRE* and thus grants access to all publications from institutional repositories as well as data hosted on *Zenodo* that is correctly linked to the project. To make sure that besides the project results the discussion in the peer groups via supporting research and citation networks is kept up-to-date, project partners use their *ORCID* ID to synchronize information on all of those platforms. Links to e.g. the project group on *ResearchGate* or relevant researcher profiles can also be centrally collected on the project website along with a register of publications, research data and deliverables as an overview apart from the actual data accessible via *OpenAIRE*.

6. Conclusions

This document outlines the open data management plan to ensure that the ReCiPSS project publishes according to the open access strategy of the *EU Framework Programme for Research and Innovation Horizon 2020*. As mentioned earlier, this initial version of the plan can be adjusted in the course of the project when necessary. Each partner is responsible to consider these guidelines when publishing foreground to disseminate ReCiPSS in best possible way.

The open data management plan, as laid out in this document, fulfils the defined requirements in the following ways depicted in Table 3.

Table 3 Requirement fulfilment

N ^o	Requirement	Service	Fulfilment
1	Publicly accessible publication repository for public deliverables		✓
2	Publication guideline including licence for open access		✓
3	Link publications from and on external providers to <i>OpenAIRE</i>		✓
4	Describe where to upload research data, such as spreadsheets or source code		✓
5	Link research data to <i>OpenAIRE</i>		✓
6	Support the scientific exchange on external platforms such as <i>ResearchGate</i>	 Connecting Research and Researchers	✓
7	Enable data export and import to ease actuality of data on different platforms via a central source of information	 Connecting Research and Researchers	✓
8	Use and connect institutional repositories for written documents such as conference contributions or journal articles		✓
9	Support the website as a central information hub on different repositories and publications		✓

7. References

- [1] https://en.wikipedia.org/wiki/Creative_Commons

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