4AirCRAFT

Air Carbon Recycling for Aviation Fuel Technology

Data Management Plan

DELIVERABLE 6.2

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Document history

Version	Date	Name	Description
v0.1	2021-10-04	Teresa Villuendas (FHa), Vanesa Gil (FHa)	Table of contents and early description.
v0.2	2021-10-15	Vanesa Gil, FHa Teresa Villuendas, FHa	Consolidated draft for revision by ALL partners.
v0.3	2021-10-31	Vanesa Gil, FHa	Final document approved by ALL partners and after Quality Assurance submitted to the EC
v0.4	2023-02-08	Teresa Villuendas, FHa Vanesa Gil, FHa	Disclaimer modified. Acknowledgements and page footer updated.

Contents

List of Figures

List of Acronyms

DMP	Data Management Plan
EC	European Commission
IPR	Intellectual Property Rights
ORDP	Open Research Data Pilot

Executive Summary

This document contains the first version of the Data management Plan (DMP), a draft that aims to ensure accessibility and re-usability of the scientific data/results generated in 4AirCRAFT project framework as part of the Open Research Data Pilot (ODP).

The DMP considers the methodology to be followed considering data sharing as open as possible but as closed as necessary.

Data Management Plan is a “living” document, created at the start of the research project and updated when necessary as the project progresses.

ZENODO platform will be used to share and store data. This repository will assign a DOI to each deposited datasets and an appropriate naming procedure will be followed to make the data better findable

All relevant data to be deposit in the open repository will be uploaded within 3 months after the end of the project. For the open access publications, all the publications will be deposit immediately.

1. Guidelines on data management

This document is developed in the framework of WP6 “Project management and coordination” activities and its policy will be defined in compliance with the “Guidelines on FAIR Data Management in Horizon 2020” and the guidance concerning Open Access and the Open Research Data Pilot (ORDP) at the European Research Council under Horizon 2020.

Data Management Plan (DMP) specifies how research data will be handled both during and after a research project. As far as possible, projects must enable third parties to access, mine, exploit, reproduce and disseminate (free of charge for any user) the research outputs (curated and/or raw data and metadata) generated within the frame of the project. At the same time, projects should provide information about the tools available that are needed to validate results in scientific publications.

This document provides the first version of the Data Management Plan (DMP) and will be updated whenever significant changes in data, policy or consortium occur. Additionally, and update DMP will be delivered during the periodic evaluation and the final version will be provided at the final review of the project.

1.1 Data summary

All the scientific articles, publications, datasets, deliverable reports and other non-sensitive research artifacts generated within 4airCRAFT framework e.g. posters and presentations as research outputs will be collected and deposited in a research data repository.

Format, size and access restrictions will be defined case by cases, however, typically files up to 50 GB will be uploaded and non-sensitive data will be free to use for all research community and other stakeholders.

All scientific-technical work packages are expected to generate experimental data throughout project lifetime. Data and information necessary to access and use it will be deposited. It could include information metadata (details about units of measure, abbreviation or codes used in the dataset, acknowledgement, project acronym, grant number, etc.) and the tools and instruments needed to use the raw data to validate the research.

Data and information are denoted as metadata. Metadata can take many formats, from free text to standardized, structured content. Standard file formats (.xls, .csv, .pdf and/or .txt) will be deposited and standards metadata schema will be considered if required by the repository.

The concept of the free use of research, openly available to the broad public and for all forms of reuse, may conflict with intellectual property rights. Initially the plan is to make certain relevant data available, but the decision might change mid-project, if it is discovered that there is a commercial application and/or plan to file a patent. Therefore, which data the Pilot covers for a specific context will be re-evaluated at Consortium level during the project lifetime and re-defined in an updated DMP. If this is the case, it will be justified why the data or part of the data can`t be shared openly.

1.2 FAIR data

Good data management is the key to conduit leading to knowledge integration and reuse by the community after the data publication process.

Research data should be 'FAIR', that is Findable, Accessible, Interoperable and Re-usable.

A preliminary plan for a subset of data generated is identified in section 2. Within this section it is analysed and justified any possible data affected by Industrial Property Rights (IPRs), third parties' restrictions and any reason to keep the results closed. In any case, the preliminary plan might be re-defined at a later stage as discussed in section 1.1.

1.2.1 Making data findable

ZENODO is the chosen free repository to provide a place to long-term archiving all the sub-set of data, metadata, instruments and tools. This repository will assign a long-lasting reference to each deposited resource (dataset, publication, unpublished report, etc.). The primary purpose of the denoted persistent identifier (PID) is to provide the information required so the datasets and publications can be cited, linked and tracked and it might be connected to a set of metadata. For each file deposited an appropriate naming procedure will be followed to make the data better findable.

To this purpose, data is expected to be shared which data naming proposed in Figure 1.

Moreover, 4AirCRAFT website may be considered in the future as additional repository.

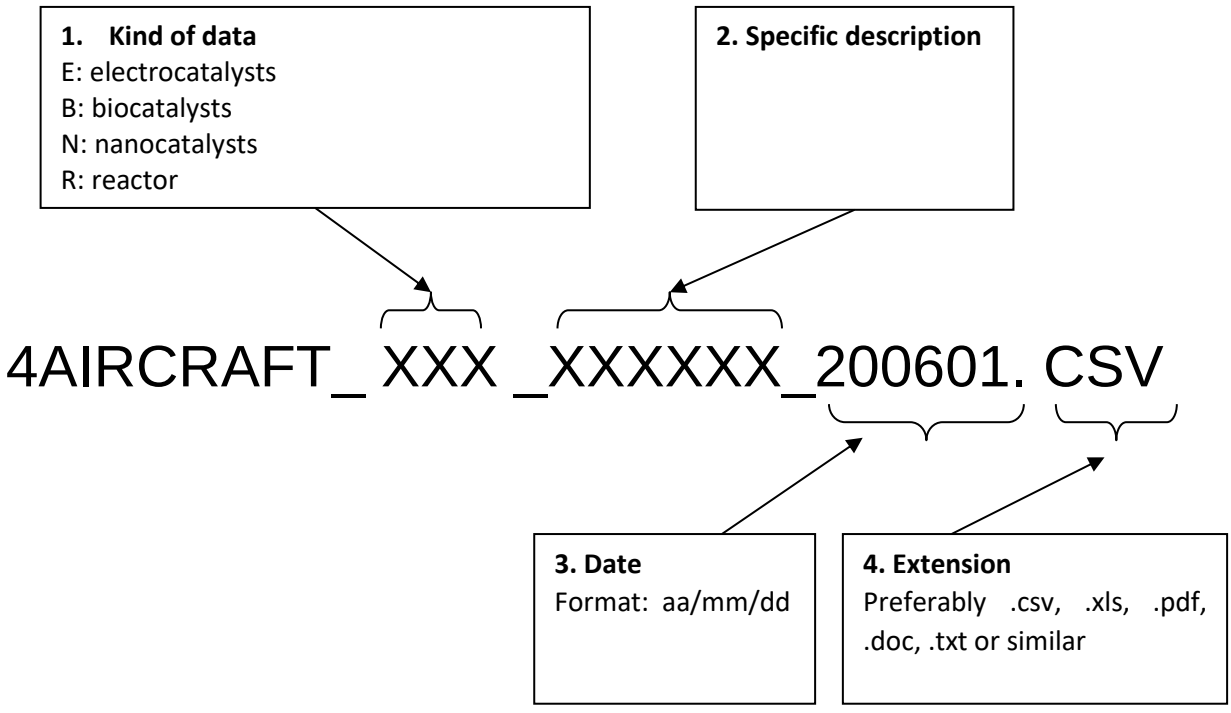

Figure 1. Naming procedure for 4AirCRAFT research data files

1.2.2 Making data openly accessible

During the project, access to the research data will mainly be restricted to 4AirCRAFT Consortium, except for sub-set data published in scientific articles and presentations and posters. In addition, the publications themselves will be deposited in all-purpose open research repository and/or by self-archiving within 1 month after publishing.

All relevant data (and no sensitive) will be archived at the end of the project (within 3 months) to the same open-source repository, so that any researcher, funder, general public, organisation and national government can access to the full relevant output produced in the frame of 4AirCRAFT project.

All data stored in Zenodo will be readable with common and free tools.

Zenodo documentation is available at: http://help.zenodo.org/guides/search

and Zenodo FAQ: http://help.zenodo.org/

1.2.3 Making data interoperable

All data stored will be shared in standard formats, English language and SI base units. If MS Office, pdf viewer or image viewer cannot be used, a text (ASCII) or any other accessible file format will be provided with the dataset that explains where a free reader can be obtained.

Apart from the quality assurance resulted from the data processing, the data files will be as much clear as possible in terms of data labels, graphs, or additional notes when required.

1.2.4 Increase data re-use

Based on the fact that data will be introduced in the ZENODO repository, the data will remain re-usable as long as the repository operates. The level of reuse for each resource (dataset, publications, presentation, etc) will be agreed by defining the license case by case. “How to License Research Data” guide will help to understand data licensing, pros and cons and define the best approach for each specific context.

As a preliminary plan, it is recommended to use the Creative Commons CCO waiver for open access to data, as they allow maximum reusability and interoperability. CC0 enables scientists, educators, artists and other creators and owners of copyright- or database-protected content to waive those interests in their works and thereby place them as completely as possible in the public domain, so that others may freely build upon, enhance and reuse the works for any purposes without restriction under copyright or data-base law.

For some specific cases CCBY license might be also considered as a possibility. This license lets others distribute, remix, adapt, and build upon your work, even commercially, as long as they credit you for the original creation. An example of this kind of license is the CCBYY 4.0 for publications. With this license users will be required to acknowledge the consortium and the source of the data in any resulting publications.

1.3 Allocation resources

Zenodo is a free repository and there is no cost associated with the long-term preservation of the data.

The owners of the datasets, main author in publications, etc.. supported by the coordinator will be responsible for data management and archive.

1.4 Data security

Until a dataset is not fully finalised and ready to publication, each partner will be responsible of their data security. Additionally, and to avoid data lost once is processed by each partner, coordinator (FHA) and the partners involved in each activity will have a copy of the final files deposited.

2. Specific data generated in 4AirCRAFT

Data generated in 4AirCRAFT framework will be published as open as possible, but as closed as necessary, following the EC guidelines for Open Access to scientific publications and research data in Horizon 2020 and aligned to the guidelines established at the Consortium Agreement.

As it was mentioned at the Quality and Knowledge Management Plan (D6.1), the dissemination and exploitation of the results, data testing sets and publications will be performed in a way that ensures the safety of sensitive data, enhances the data' accessibility, exploitability and reuse potential, and supports their long-term preservation.

All partners are committed with dissemination efforts of the results to promote knowledge and outcomes transfer.

Some of the data expected to be generated in 4airCRAFT may be classified in the following lines:

1. Development and characterisation of electrocatalysts
2. Development and characterisation of biocatalysts
3. Development and characterisation of chemo-catalysts
4. Design and development of advanced catalyst carriers and hierarchical structures.
5. Advanced cascade reactor, proof of concept and CFS simulations.
6. Life Cycle Assessment.

Aligned with the specific objectives of 4AirCRAFT in addition to experimental data (data-sets), publications, deliverables reports, presentations and posters, etc… will be the type of outputs the project will also deliver.

3. Ethical aspects

Due to project participants from third countries (Japan and Brazil) a special attention is given to personal data protection and knowledge management.

No personal data is required for the direct development of the research activities of the project however, the project will collect and process various personal data, e.g. website, social media such as Twitter, LinkedIn, mass media, scientific publications, workshops, etc.. In this context, regardless of the approach or channel being used for personal data collection and processing (online or offline), as mentioned in Deliverable *D7.2 NEC-POPD-Ethics requirement* all the knowledge and personal data transferred between EU and non-EU project participants will be carefully documented. Guidelines to ensure compliance with Horizon 2020 ethics rules are stablished in the Grant Agreement too. More specifically, all the participants of the 4AirCRAFT Consortium must give confirmation before any publication (Zenodo/other via).

3.1. IPR: knowledge management

A set of established rules related of knowledge management and intellectual property was documented in the 4AirCRAFT Consortium Agreement (CA). To ensure a correct dissemination of the project outcomes while securing protection of confidential information and patents, it's necessary to outline:

- The ownership of the results.

- Transfer of the results following the procedures of the Grant Agreement.

- Protection through filling of patent applications or other Intellectual Property Rights (IPR) protection measures.

This is also explained at the Deliverable *D6.1 Quality and Knowledge Management Plan* of the project.

4. Conclusions

The Data Management Plan (DMP) aims to provide a structured form of repository for the consultation of data, measurements, facts and know-how gathered during the project, for the benefit of a more systematic progress in science.

To this purpose, every partner is responsible to select and process the data generated within the tasks they are involved to create the files that will be shared with the scientific community.

This work will be carried out following the roadmap given in the DMP, which is intended to be a living document where information can be updated as the project advances and additional needs arise.

References

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