Plan Overview

A Data Management Plan created using DMPonline

Title: PlasmaSolution

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Project abstract:

This action will implement the new Plasma-Enhanced Chemical Solution Deposition (PECSD) technique for coating of wood and wood-based substrates. This technique synergistically employs plasma-chemistry in the gas phase and polymer chemistry in the liquid formulation, thus combining all benefits of conventional surface coatings and plasma-based deposition technologies. The implementation is divided into three main objectives: Objective I: Building the integrated device, Objective II: Optimization of the deposition parameters, and Objective III: Demonstrating the technique’s capability and priming the industrial implementation. These objectives will lead to the generation of data: (I) on the construction, setup, and ongoing improvements of the device, (II) on the experimental protocols for film deposition and the properties of the resulting coatings, and (III) on the effectiveness of the demonstrated applications towards commercialization. Various kinds and forms of data will be generated throughout the project. No previous works on this specific kind of approach are known from the literature, hence no reuse of existing data is foreseen.

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PlasmaSolution - Initial DMP

1. Data summary

Provide a summary of the data addressing the following issues:

- **State the purpose of the data collection/generation**
- **Explain the relation to the objectives of the project**
- **Specify the types and formats of data generated/collected**
- **Specify if existing data is being re-used (if any)**
- **Specify the origin of the data**
- **State the expected size of the data (if known)**
- **Outline the data utility: to whom will it be useful**

Purpose of the data collection

The raw data on plasma-treated and plasma-coated wood substrates will be helpful for readers of our scientific articles, that are to be published, to verify our findings. Further, the data may help to form a more complete view on the effects of different plasma treatments on wood surfaces, and thus might enable to generate a general model covering all different plasma treatments.

Relation to the objectives of the project

The three main objectives of the action are: (I) Building an integrated device, (II) optimizating the parameters of PMMA deposition for exterior use, thereby further improving the understanding of the processes, and (III) demonstrating the technique’s capability and priming the industrial implementation. The published data will therefore include:

(I) construction details and CAD drawings,

(II) coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings, as well as

(III) aging, wheathering and cross-cut tests of the coatings, amongst other measurements, that indicate the industrial usability.

Specify the types and formats of data generated/collected

(I) Construction details, CAD drawings, simulations:

- CAD drawings: SolidWorks; .sldprt, .sldasm, .slddrw / .pdf, .jpg
- Simulations: COMSOL Multiphysics; .mph / .pdf, .jpg

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols: Word; .docx / .txt
- OES spectra: .xls / .pdf
- Tensiometer: KRÜSS Laboratory Desktop; .xls / .mdb
- Goniometer: Attension; .xls / .bmp, .png, .jpg
- FTIR Spectrometer: Spectrum; .xls / .bmp, .png., jpg, .gif, .tif
- SEM microscope: xTmicroscope server; .tif
- Zwick Z100: Testxpert II; .xls files

(III) Aging, wheathering and cross-cut tests of the coatings, amongst other measurements, that indicate the industrial usability:

- Images (Photographs); .jpg, .bmp

No existing data is expected to be re-used.

Origin and expected size of the data (if known)

(I) Construction details, CAD drawings, simulations:

- CAD drawings: proprietory files (SolidWorks) as well as images and PDF; each file will amount to few 100 kB
- Simulations: proprietory files (COMSOL Multiphysics) as well as images and PDF; proprietory files few 100 MB, PDF files few MB

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols: original notes; each file will amount to few 100 kB
- OES spectra: original measurements; each file will amount to few 100 kB
- Tensiometer: original measurements; each file will amount to few 100 kB
- Goniometer: original measurements; each file will amount to few 100 kB
- FTIR Spectrometer: original measurements; each file will amount to few 10 kB
- SEM microscope: original measurements; each file will amount to few MB
- Zwick Z100: Testxpert II: original measurements; each file will amount to few 100 kB

(III) Aging, wheathering and cross-cut tests of the coatings, amongst other measurements, that indicate the industrial usability:

- Image from photo camery; each file will amount to few 100 kB

Outline the data utility: to whom will it be useful

(I) Construction details and CAD drawings:

- CAD drawings: academia and industry for reproduction and utilization for applications
- Simulations: academia and industry for adaption for further applications

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols: academia and industry for adaption and reproduction
- OES, Tensiometer, Goniometer, FTIR, SEM, and Zwick: academia for reproduction and verification

(III) Aging, wheathering and cross-cut tests of the coatings, i.a.: academia for reproduction and verification

2. FAIR data

2.1 Making data findable, including provisions for metadata:

- **Outline the discoverability of data (metadata provision)**
- **Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**
- **Outline naming conventions used**
- **Outline the approach towards search keyword**
- **Outline the approach for clear versioning**
- **Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

Discoverability

All data will be uploaded together with the relating metadata, including project context and labbook entries. These collections will be linked to scientific articles, conference proceedings, reports, and other sources to be published. For this, we will make use of persistent and unique Digital Object Identifiers (DOI) via the data storage facility. A description of available data collections will also be added to the PIs website.

Naming conventions, keywords and versioning

We ascertain that the data will be easily recognized and correlated to experiments via the following naming conventions:

- Raw data: YYMMDD_[experiment]_[technique]_XXX.*
- Processed results: YYMMDD_[experiment]_[technique]_XXX_analysis_ZZZ.*

Herein, symbols represent the following:

YYMMDD - the inverted date of the day the experiment was conducted
[experiment] - a short title for the experimental series
[technique] - a unique denominator for each technique, such as CLSM, SEM
XXX - a running number for individual measurements
ZZZ - a running number for separate processes of analysis

Same naming formats will be used for other data, such as CAD and COMSOL files.

Metadata creation

No standards are known to the PI at the point of the DMP creation. As metadata, we will thus provide:

- Publication date,
- Title,
- Authors including contact information,
- Description,
- Version,
- Language,
- Keywords,
- Grant acknowledgement, and
- References to all publications referring to the dataset.

Further, we will include complete lab notebook excerpts, as well as protocols for measurements and analysis within the dataset.

2.2 Making data openly accessible:

- **Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**
- **Specify how the data will be made available**
- **Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**
- **Specify where the data and associated metadata, documentation and code are deposited**
- **Specify how access will be provided in case there are any restrictions**

Specify which data will be made openly available? If some data is kept closed provide rationale for doing so

- All data used in any publication (journal article, conference contribution, BLOG post etc.) will be made openly available and linked to via DOI from the original publication.

Specify how the data will be made available and where the data and associated metadata, documentation and code are deposited

- Unless provided with better options in special cases (like some publishers offer), we will use Zenogo.org to store data, metadata, and documentation.
- No restrictions will be imposed.

Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?

Although it is not possible to include proprietory software, we will provide suitable open export formats along with a description of the required software to access the data, e.g. Adobe Reader for PDF exports.

2.3 Making data interoperable:

- **Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**
- **Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.

- Where proprietory formats are not open or interoperable, we will use exports in interoperable formats, such as PDF or TXT

Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?

- Not relevant to the technical datasets yielded within this project.

2.4 Increase data re-use (through clarifying licenses):

- **Specify how the data will be licenced to permit the widest reuse possible**
- **Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**
- **Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**
- **Describe data quality assurance processes**
- **Specify the length of time for which the data will remain re-usable**

Specify how the data will be licenced to permit the widest reuse possible

- Data will be licenced as CC-BY.

Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed

- The data will be made available upon accceptance of any publication. In no case is an embargo period foreseen.

Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why

- No restrictions are foreseen, all published data is useable by third parties during the project and after the end of the project.

Describe data quality assurance processes

- Data formats and contents are given by the equipment and software manufacturers.
- Loss of data is avoided through the secure storing procedures.
- Manipulation or loss of raw data is avoided through storing raw files after recording and only processing copies of the datasets, that are stored in a different location.
- Procedures for data recording, storing, handling, and processing are unified via protocols.

Specify the length of time for which the data will remain re-usable

- The data will remain re-usable for at least 20 years, as to the repository's policy.

3. Allocation of resources

Explain the allocation of resources, addressing the following issues:

- **Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**
- **Clearly identify responsibilities for data management in your project**
- **Describe costs and potential value of long term preservation**

Estimate the costs for making your data FAIR. Describe how you intend to cover these costs

Using Zenodo, no costs are foreseen for making our data FAIR.

Clearly identify responsibilities for data management in your project

Responsibilities for data management are taken over by the fellow.

Describe costs and potential value of long term preservation

Since the project's results shall be conserved FAIR-ly, this includes the data used for every publication. Thus, reusibility and cross-usibility of the produced data will be ensured.

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

Address data recovery as well as secure storage and transfer of sensitive data

- Original data will be stored on a network area storage with appropriate security and backup functionalities.
- No sensitive data is foreseen to be recorded during the course of the project.
- Data recovery will be eased by the naming convention.
- Raw data are stored in a folder structure, sorted by year, month, and day. Results of data processing and analysis are grouped in separate folders bearing the names of the correlating experimental series.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

- Not relevant to the technical datasets yielded within this project.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

Currently we don´t use any national, funder, sectorial, or departmental procedures for data management.

PlasmaSolution - Detailed DMP

1. Data summary

State the purpose of the data collection/generation

The data is collected to validate the novel approach and demonstrate the new coating technology. The construction details, protocols, process parameters, and analytical measurements on the produced coatings all aim to fulfil the three objectives.

The raw data on plasma-treated and plasma-coated wood substrates might further be helpful for readers of our scientific articles, that are to be published, allowing them to verify our findings. Thus, publishing all data allows to achieve a more complete transparancy and reproducibility. Furthermore, the data may help to form a more complete view on the effects of different plasma treatments on wood surfaces, and thus might enable to generate a general model covering all different plasma treatments.

Explain the relation to the objectives of the project

The three main objectives of the action are: (I) Building an integrated device, (II) optimizating the parameters of PMMA deposition for exterior use, thereby further improving the understanding of the processes, and (III) demonstrating the technique’s capability and priming the industrial implementation. The created data will therefore include:

(I) construction details and computer-aided design (CAD) assisted drawings,

(II) coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings, as well as

(III) aging, wheathering and adhesion tests of the coatings, amongst other measurements, that indicate the industrial usability.

However, variables and types of the data required to fulfil these three objectives are too complex to be stated in one paragraph. These will be explored in more detail later within this plan.

Specify the types and formats of data generated/collected

(I) Construction details, CAD drawings, simulations:

- CAD drawings: SolidWorks; .sldprt, .sldasm, .slddrw / .pdf, .jpg
- Simulations: COMSOL Multiphysics; .mph / .pdf, .jpg
- EDA constructions: KiCad; .pro, .sch, .kicad_pcb, .net, .gbr / .pdf

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols: Word; .docx / .txt
- Optical Emission Spectroscopy (OES) spectra: .xls / .pdf
- Tensiometer: KRÜSS Laboratory Desktop; .xls / .mdb
- Goniometer: Attension; .xls / .bmp, .png, .jpg
- Fourier-Transform InfraRed (FTIR) Spectrometer: Spectrum; .xls, .txt / .bmp, .png., jpg, .gif, .tif
- Secondary Electron Microscope (SEM): xTmicroscope server; .tif

- Zwick Z100: Testxpert II; .xls files

(III) Aging, wheathering and cross-cut tests of the coatings, amongst other measurements, that indicate the industrial usability:

- Images (Photographs); .jpg, .bmp
- Confocal Laser Scanning Microscopy Olympus Lext: .poir, .rep/ .jpg, .pdf

Specify if existing data is being re-used (if any)

The project pursues a new approach and constructs novel technology in doing so. Therefore, no data exists than can directly be re-used. The construction and design are, however, based upon basic principles and findings from the past. All published findings and data will be linked to those, thus allowing to position the created data within the existing context.

Specify the origin of the data

All data is either created on the computer or recorded from original measurements and experiments. These relate to the three objectives as follows:
(I) Construction details, CAD drawings, simulations:

- CAD drawings: proprietory files (SolidWorks) as well as images and PDF
- Simulations: proprietory files (COMSOL Multiphysics) as well as images and PDF
- KiCad: open file formats (KiCad) as well as PDF and Gerber

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols: original notes
- OES spectra: original measurements
- Tensiometer: original measurements
- Goniometer: original measurements
- FTIR Spectrometer: original measurements
- SEM microscope: original measurements
- Zwick Z100: Testxpert II: original measurements

(III) Aging, wheathering and cross-cut tests of the coatings, amongst other measurements, that indicate the industrial usability:

- Images from photo camera
- Confocal Laser Scanning Microscopy: proprietory file formats (Olympus) as well as PDF and JPG

State the expected size of the data (if known)

(I) Construction details, CAD drawings, simulations:

- CAD drawings:
  - each file will amount to few 100 kB
  - a total of up to 100 MB is expected

- Simulations:
  - proprietory files few 100 MB, PDF files few MB
  - a total of up to 2 GB is expected
- EDA constructions:
  - proprietory files few 100 kB, PDF files few MB
  - a total of up to 100 MB is expected

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols:
  - each file will amount to few 100 kB
  - a total of up to 10 MB is expected
- OES spectra:
  - each file will amount to few 100 kB
  - a total of up to 100 MB is expected
- Tensiometer:
  - each file will amount to few 100 kB
  - a total of up to 100 MB is expected
- Goniometer:
  - each file will amount to few 100 kB
  - a total of up to 100 MB is expected
- FTIR Spectrometer:
  - each file will amount to few 10 kB
  - a total of up to 500 MB is expected
- SEM microscope:
  - each file will amount to few MB
  - a total of up to 1 GB is expected
- Zwick Z100: Testxpert II:
  - each file will amount to few 100 kB
  - a total of up to 100 MB is expected

(III) Aging, wheathering and cross-cut tests of the coatings, amongst other measurements, that indicate the industrial usability:

- Photo camera:
  - each file will amount to few 100 kB
  - a total of up to 100 MB is expected
- CLSM:
  - proprietory files typically 20 MB per measurement, PDF & JPG files few MB
  - a total of up to 100 GB is expected

In summary, a total of max. 105 GB is expected. The existing facilities for data storage at the University of Ljubljana allow to handle and store this data without extra costs.

Outline the data utility: to whom will it be useful

(I) Construction details and CAD drawings:

- CAD drawings: academia and industry for reproduction, utilization for different applications, and to raise the quality of their final products for the end user.
- Simulations: academia and industry for adaption for further applications
- KiCad constructions: academia and industry as well as DIY communities and tech enthusiasts

(II) Coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings:

- Protocols: academia and industry for adaption and reproduction
- OES, Tensiometer, Goniometer, FTIR, SEM, and Zwick: academia for reproduction and verification

(III) Aging, wheathering and cross-cut tests of the coatings, i.a.: academia for reproduction and verification

2.1 Making data findable, including provisions for metadata [FAIR data]

Outline the discoverability of data (metadata provision)

All data will be uploaded together with the relating metadata, including project context and labbook entries. These collections will be linked to scientific articles, conference proceedings, reports, and other sources to be published.

Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?

We will make use of persistent and unique Digital Object Identifiers (DOI) via the data storage facility. A description of available data collections will also be added to the PIs website.

Outline naming conventions used

We ascertain that the data will be easily recognized and correlated to experiments via the following naming conventions:

- Raw data: YYYYMMDD_[experiment]_[technique]_XXX.*
- Processed results: YYYYMMDD_[experiment]_[technique]_XXX_analysis_ZZZ.*

Herein, symbols represent the following:
YYYYMMDD - the inverted date of the day the experiment was conducted
[experiment] - a short title for the experimental series
[technique] - a unique denominator for each technique, such as CLSM, SEM
XXX - a running number for individual measurements
ZZZ - a running number for versioning during separate processes of analysis
Same naming formats will be used for other data, such as CAD and COMSOL files.

Outline the approach towards search keyword

Documentation and notes are centrally stored in text or markdown formats together with the original (raw) data. Findability is ascertained by the naming convention. No additional approach towards search keywords is foreseen to be required, as typical keywords are given by the techniques' unique names.

Outline the approach for clear versioning

Versioning of both, raw data from repeated experiments as well as processed data during analysis, is included in the naming convention via separate running numbers.

Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how

No field-specific recommendations are known to the PI at the point of the DMP creation. As metadata, we will thus provide:

- Publication date,
- Title,
- Authors including contact information,
- Description,
- Version,
- Language,
- Keywords,
- Grant acknowledgement, and
- References to all publications referring to the dataset.

Further, we will include complete lab notebook excerpts, as well as protocols for measurements and analysis within the dataset.

This is fully in line with the repository's policy. Further, the repository stores all metadata in JSON-format according to a defined JSON schema. Metadata is exported in several standard formats such as MARCXML, Dublin Core, and DataCite Metadata Schema in accordance with the OpenAIRE Guidelines.

2.2 Making data openly accessible [FAIR data]

Specify which data will be made openly available? If some data is kept closed provide rationale for doing so

The selection of data for publication is carried out such that quality and reproducibility are ensured, making openly available all data that offers a potential for any kind of reuse. Therefore, all data used in any publication (journal article, conference contribution, BLOG post etc.) will be made openly available and linked to via DOI from the original publication.

Specify how the data will be made available

Unless provided with better options as special offer by publishers, we will use Zenogo.org to store data, metadata, and documentation.

No restrictions will be imposed.

Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?

Although it is not possible to include proprietory software, we will provide suitable open export formats along with a description of the required software to access the data, e.g. Adobe Reader for PDF exports.

Specify where the data and associated metadata, documentation and code are deposited

Specify how access will be provided in case there are any restrictions

No restrictions apply for the access of the data generated in this project.

2.3 Making data interoperable [FAIR data]

Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.

Where proprietory formats are not open or interoperable, we will use exports in interoperable formats, such as JPG and PDF for images, and as textfiles for tables and spectra.

Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?

Not relevant to the technical datasets yielded within this project.

2.4 Increase data re-use (through clarifying licenses) [FAIR data]

Specify how the data will be licenced to permit the widest reuse possible

Unless other needs arise on exception, all data will be licenced as CC-BY.

Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed

The data will be made available upon acceptance of the corresponding publication or completion of the corresponding outreach activity, thus ensuring both quality and findability. All relevant data, i.e. all data that offers any kind of potential for reuse, will be made available no longer than 6 months after the end of this 2-year project.

In no case is an embargo period foreseen for the research data.

Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why

No restrictions are foreseen, all published data is useable by third parties during the project and after the end of the project.

Describe data quality assurance processes

- Data formats and contents are determined through standard high-quality equipment and software manufacturers.
- Loss of data is avoided through the secure storing procedures.
- Manipulation or loss of raw data is avoided through storing raw files after recording and only processing copies of the datasets, that are stored in a different location.
- Procedures for data recording, storing, handling, and processing are unified via protocols.

Specify the length of time for which the data will remain re-usable

The data will remain accesible and re-usable for at least 20 years, as to the repository's policy.

3. Allocation of resources

Estimate the costs for making your data FAIR. Describe how you intend to cover these costs

Using Zenodo, no direct costs are foreseen for making our data FAIR. Due to the specific methodology of data analysis and the publication of results, no extra time is required for data processing; the transition towards an electronic lab notebook further simplifies the data curation. Thus, no additional costs are foreseen specifically for making the data FAIR.

Clearly identify responsibilities for data management in your project

Responsibilities for data management are taken over by the Marie Sklodowska-Curie fellow.

Describe costs and potential value of long term preservation

Since the project's results shall be conserved FAIR-ly, this includes the data used for every publication. Thus, reusibility and cross-usibility of the produced data will be ensured.

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

- Original data is firstly stored in a shared Google drive folder, thus ensuring safe storage and accessibility for all team members.
- CAD files are stored on GitHub and published through Zenodo.
- Long term storage and archiving will be done on a storage area network (SAN) based network drive with appropriate security and backup functionalities, where it remains locally accessible to all colleagues within the department.
- No sensitive data is foreseen to be recorded during the course of the project.
- Raw data are stored in a folder structure, sorted by year, month, and day. Results of data processing and analysis are grouped in separate folders bearing the names of the correlating experimental series. Thus, any influence of the analysis process on the raw data is avoided, while all raw and analysed data remain accessible and findable.
- Data recovery will be eased further through the naming convention.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

Not relevant to the technical datasets yielded within this project.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

Currently we don´t use any specific national, funder, sectorial, or departmental procedures for data management. It is, however, intended to utilize the data management implemented in this project as a blue-print, that is transferred to all activities of the chair, and offered within an internal workshop to the entire department, that is Department of Wood Science and Technology, Biotechnical faculty,

University of Ljubljana.

PlasmaSolution - Final review DMP

1. Data summary

State the purpose of the data collection/generation

Question not answered.

Explain the relation to the objectives of the project

Question not answered.

Specify the types and formats of data generated/collected

Question not answered.

Specify if existing data is being re-used (if any)

Question not answered.

Specify the origin of the data

Question not answered.

State the expected size of the data (if known)

Question not answered.

Outline the data utility: to whom will it be useful

Question not answered.

2.1 Making data findable, including provisions for metadata [FAIR data]

Outline the discoverability of data (metadata provision)

Question not answered.

Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?

Question not answered.

Outline naming conventions used

Question not answered.

Outline the approach towards search keyword

Question not answered.

Outline the approach for clear versioning

Question not answered.

Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how

Question not answered.

2.2 Making data openly accessible [FAIR data]

Specify which data will be made openly available? If some data is kept closed provide rationale for doing so

Question not answered.

Specify how the data will be made available

Question not answered.

Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?

Question not answered.

Specify where the data and associated metadata, documentation and code are deposited

Question not answered.

Specify how access will be provided in case there are any restrictions

Question not answered.

2.3 Making data interoperable [FAIR data]

Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.

Question not answered.

Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?

Question not answered.

2.4 Increase data re-use (through clarifying licenses) [FAIR data]

Specify how the data will be licenced to permit the widest reuse possible

Question not answered.

Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed

Question not answered.

Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why

Question not answered.

Describe data quality assurance processes

Question not answered.

Specify the length of time for which the data will remain re-usable

Question not answered.

3. Allocation of resources

Estimate the costs for making your data FAIR. Describe how you intend to cover these costs

Question not answered.

Clearly identify responsibilities for data management in your project

Question not answered.

Describe costs and potential value of long term preservation

Question not answered.

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

Question not answered.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

Question not answered.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

Question not answered.