**OPEN SCIENCE**

**RESEARCH DATA MANAGEMENT PLAN (DMP)[[1]](#footnote-1)**

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| **Project number** |  |
| **Funder** |  |
| **Project title** |  |
| **Principal investigator (PI)** |  |
| **PI ORCID identifier** |  |
| **Beneficiary institute** |  |
| **Project starting date** |  |
| **Project end date** |  |
| **Project duration** |  |
| **Data manager/contact** |  |
| **DMP 1st version/date** |  |
| **DMP last update[[2]](#footnote-2)/date** |  |

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| **SUMMARY** *(dataset[[3]](#footnote-3) reference and name; origin and expected size of the data generated/collected; data types and formats)* |
| Provide a summary of the data addressing the following aspects:   1. State the purpose of the data collection/generation 2. Explain the relation to the objectives of the project 3. Specify the types and formats of data generated/collected 4. Specify if existing data is being re-used (if any) 5. Specify the origin of the data 6. State the expected size of the data (if known) 7. Outline the data utility: to whom will it be useful |

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| ***Each of the following six issues should be addressed with a level of detail appropriate to the project. Some guiding expressions with explaining guidance help in elaboration. Please note that not all guiding thoughts are to be taken into consideration, depending on the project.***  **1. MAKING DATA FINDABLE** *(dataset description: metadata, persistent and unique identifiers e.g., DOI)* |
| Making data findable, including provisions for metadata:   1. Outline the discoverability of data (metadata provision) 2. 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? 3. Outline naming conventions used 4. Outline the approach towards search keyword 5. Outline the approach for clear versioning 6. Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how   *Guidance*:  The Research Data Alliance provides a [Metadata Standards Directory](http://rd-alliance.github.io/metadata-directory/) that can be searched for discipline-specific standards and associated tools. |

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| **2. MAKING DATA OPENLY ACCESSIBLE** *(which data will be made openly available and if some datasets remain closed, the reasons for not giving access; where the data and associated metadata, documentation and code are deposited (repository?); how the data can be accessed (are relevant software tools/methods provided?)* |
| Making data openly accessible:   1. Specify which data will be made openly available? If some data is kept closed provide rationale for doing so 2. Specify how the data will be made available 3. 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)? 4. Specify where the data and associated metadata, documentation and code are deposited 5. Specify how access will be provided in case there are any restrictions   *Guidance*:  Participating in the open research data management (ORDM) does not necessarily mean opening up all your research data. Rather, the ORDM follows the principle "**as open as possible, as closed as necessary**" and focuses on encouraging sound data management as an essential part of research best practice.  The NRDIO recognises that there are good reasons to keep some or even all research data generated in a project closed. Where data need to be shared under restrictions, explain why, clearly separating legal and contractual reasons from voluntary restrictions.  Note that in multi-beneficiary projects it is also possible for specific beneficiaries to keep their data closed if relevant provisions are made in the consortium agreement and are in line with the reasons for opting out.  The [Registry of Research Data Repositories](http://www.re3data.org/) provides a useful listing of repositories that you can search to find a place of deposit. |

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| **3. MAKING DATA INTEROPERABLE** *(which standard or field-specific data and metadata vocabularies and methods will be used)* |
| Making data interoperable:   1. Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability. 2. 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?   *Guidance*:  Interoperability means allowing data exchange and re-use between researchers, institutions, organisations, countries, etc. (i.e. adhering to standards for formats, as much as possible compliant with available (open) software applications, and in particular facilitating re-combinations with different datasets from different origins). |

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| **4. INCREASE DATA RE-USE** *(what data will remain re-usable and for how long, is embargo foreseen; how the data is licensed; data quality assurance procedures)* |
| Increase data re-use (through clarifying licenses):   1. Specify how the data will be licenced to permit the widest reuse possible 2. Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed 3. 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 4. Describe data quality assurance processes 5. Specify the length of time for which the data will remain re-usable   *Guidance*:  The [EUDAT B2SHARE](https://b2share.eudat.eu/) tool includes a built-in license wizard that facilitates the selection of an adequate license for research data.  Reasons for embargoes may include time to publish or seek patents. If an embargo is sought, specify why and for how long, bearing in mind that research data should be made available as soon as possible. |

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| **5. ALLOCATION OF RESOURCES and DATA SECURITY** *(estimated costs for making the project data open access and potential value of long-term data preservation; procedures for data backup and recovery; transfer of sensitive data and secure storage in repositories for long term preservation and curation)* |
| Explain the allocation of resources, addressing the following aspects:   1. Estimate the costs for making your data FAIR. Describe how you intend to cover these costs 2. Clearly identify responsibilities for data management in your project 3. Describe costs and potential value of long term preservation   *Guidance*:  Note that costs related to open access to research data are eligible as part of the grant (if compliant with the Grant Agreement conditions).  Costs are eligible for reimbursement during the duration of the project under the conditions defined in the Grant Agreement.  Address data recovery as well as secure storage and transfer of sensitive data.  Also consider whether the data is safely stored in certified repositories for long term preservation and curation. |

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| **6. DATA COMPLIANCE** *(data compliance is the formal governance structure in place to ensure an organization complies with laws, regulations, and standards around its data)* |
| Explain legal compliance of the beneficiary institute:   1. Data policy and/or strategy 2. Data governance 3. Describe what legal items (national and EU) and how they are followed concerning data protection   *Guidance*:  Data policy sets broad, high level principles that governs data management, data interoperability and standards, data quality, data protection and information security.  Data governance entails defining, implementing and monitoring strategies, policies and sharing the management and use of data assets.  Main legal items include, e.g., laws on the protection and management of personal data at the national level, and GDPR at the EU level  To what extent the personal data management of the project and/or institute fulfil the requirements prescribed by GDPR? |

**DISCLAIMER**

**It is the responsibility of the Principal Investigator to inform the NRDIO of any ethics issues/concerns regarding the collection, processing, sharing and storage of data in relation to the project.**

1. Template for the Open Science Research Data Management Plan (DMP). The sections should describe how you plan to make the project data Findable, Accessible, Interoperable and Reusable (FAIR). [↑](#footnote-ref-1)
2. DMP is to be regularly updated. [↑](#footnote-ref-2)
3. Several datasets may be included into a single DMP. [↑](#footnote-ref-3)