

Research Data Management Plan: Guidance and Resources 2026

DCU

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Introduction

Research Data Management Plan: Guidance and Resources is a short guide to assist you with creating a Research Data Management Plan (DMP). Research Data Management is an integral part of the research process: it aims to make the research process as efficient as possible and meet expectations and requirements of the university, research funders, and legislation. The DMP describes how research data will be managed during the research lifecycle. This guide takes you through the main sections of a DMP: data collection; documentation and metadata; ethical and legal compliance; storage, backup and security; selection and preservation; data sharing; responsibilities and resources. Each section outlines the key questions to consider and provides guidance on how to address them. Each section also contains a list of selected additional resources as well as links to DCU's supports, services and policies related to research data management. This document was originally produced by a cross-unit working group including the Research Office, the Library and Digital Technology Solutions. It has since been updated by the Research Data Librarian, Gwendolyn O'Connor, with input and guidance from all relevant units.

Section in DMP	Questions to Address in DMP	Guidance
Data Collection	<i>What data will you collect or create?</i>	<p>Give a brief description of the data, including any existing data or third-party sources that will be used, in each case noting its content, type and coverage. Outline and justify your choice of format and consider the implications of data format and data volumes in terms of storage, backup and access.</p> <p>Definition of research data: any information in digital, computer-readable format or paper based that has been collected, observed, generated or created to develop, support or revise theories, practices and findings. Data may be numerical, descriptive, or visual. Data may be raw, abstracted or analysed, experimental or observational.</p> <p>Data Description:</p> <ul style="list-style-type: none">• Give a summary of the data you will collect or create. Consider how your data could

		<p>complement and integrate with existing data, or whether there are any existing data or methods that you could reuse.</p> <p>Volume:</p> <ul style="list-style-type: none"> • Note what volume of data you will or expect to create in MB/GB/TB. Indicate the proportions of raw data, processed data, and other secondary outputs (e.g., reports). • Consider whether the scale of the data will pose challenges when sharing or transferring data between sites; if so, how will you address these challenges? <p>Format:</p> <ul style="list-style-type: none"> • Clearly note what format(s) your data will be in, e.g., plain text (.txt), comma-separated values (.csv), georeferenced TIFF (.tiff, .tiffw). • Explain why you have chosen certain formats. For example, decisions may be based on staff expertise within the host organisation, a preference for open formats, standards accepted by data repositories, widespread usage within the research community, or on the software or equipment that will be used • Using standardised, interchangeable or open formats ensures the long-term usability of data; these are recommended for sharing and archiving <p>File formats and standards:</p> <p>Various disciplines will have their own standards for file formats. The following resources identify preferred and acceptable file formats for various disciplines and types of data:</p> <ul style="list-style-type: none"> • Open Data Handbook: File Formats • Digital Repository of Ireland: Guidance on File Formats
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	<p><i>How will the data be collected or created?</i></p>	<p>If you are creating new data:</p> <ul style="list-style-type: none"> • Explain how the data will be collected and processed/ This should cover methodologies, relevant software, steps for quality assurance, and data organisation. • Briefly state the reasons if the re-use of any existing data sources has been considered but discarded <p>If you are using pre-existing datasets:</p> <ul style="list-style-type: none"> • Explain how data provenance will be documented • State any constraints on re-use of existing data if there are any. <p>Then:</p> <ul style="list-style-type: none"> • Explain how the consistency and quality of data collection will be controlled and documented. This may include processes such as calibration, repeat samples or measurements, standardised data capture, data entry validation, peer review of data or representation with controlled vocabularies. • Indicate how the data will be organised for the project e.g. naming conventions, version control, and folder structures. The better organised your data, the easier it will be to find, understand, and reuse <p>Useful resources and further guidance:</p> <ul style="list-style-type: none"> • CESSDA Data Management Expert Guide: Organise and Document Data (Consortium of European Social Science Data Archive)
<p>Documentation and Metadata</p>	<p><i>What documentation and metadata will accompany the data?</i></p>	<p>The quality of the descriptive information (metadata and documentation) regarding the data has a profound impact on their reusability, so the more documentation and metadata you can provide, the better.</p> <p>Documentation:</p>

		<p>Decisions about the type of data to be collected and the data's scope, quantity and format should be documented. This is likely to change as your DMP is adapted during the research life-cycle. This becomes critical once the data are no longer active and have been transferred to an archive for long-term preservation and sharing if appropriate.</p> <p>Your project documentation should be preserved with your data: Describe the types of documentation that will accompany the data to help secondary users to understand and reuse it. This should at least include basic details that will help people to find the data, including:</p> <ul style="list-style-type: none">• Who created or contributed to the data• Its title and date of creation• Under what conditions it can be accessed <p>Metadata: This is another form of data and is simply 'data about data'. Metadata is descriptive or contextual information which refers to or is associated with another object or resource. In your DMP, you should reflect on the type of metadata that could be included when saving/storing your research data, as applicable to your discipline.</p> <p>For more information on metadata standards:</p> <ul style="list-style-type: none">• You can search the Metadata Standards Catalogue or FAIRsharing for standards relevant or specific to your discipline• Additionally, OpenAIRE Guidelines provide guidance on how to specify access rights, funding information, and related publications, datasets, software etc. for publication repositories, data archives, software repositories.
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<p>Ethics and Legal Compliance</p>	<p><i>How will you manage any ethical issues?</i></p>	<p>Ethical issues affect how you store data, who can see/use it and how long it is kept. Managing ethical concerns may include: anonymisation of data; referral to departmental or institutional ethics committees; and formal consent agreements. You should show in your DMP that you are aware of any issues and have planned accordingly.</p> <p>Does your research involve personal data? Personal data is any information about a living person, where that person is either identified or could be identified, from the data itself or when it is combined with other data. Typical examples of personal data in a research context are:</p> <ul style="list-style-type: none"> • paper based records e.g. research participant files, patient records, consent declarations, interview notes etc. • electronic records e.g. database of participant details, online survey returns, photos, audio & visual recordings, IP addresses, diagnostic / clinical imaging etc. • other e.g. genetic data, biometric data, clinical or medical samples etc. <p><i>Note: Any data that is fully and completely anonymous is not considered to be personal data</i></p> <p>Ensure that Data Protection laws (e.g. GDPR) are complied with and documented in your DMP:</p> <ul style="list-style-type: none"> • gain informed consent for preservation and/or sharing of personal data • Consider anonymisation of personal data for preservation and/or sharing (truly anonymous data are no longer considered personal data) • Consider pseudonymisation of personal data (the main difference with anonymisation is that pseudonymisation is reversible) • Consider encryption which is seen as a special case of pseudonymisation (the encryption key must be stored separately from the data, for instance by a trusted third party) • Explain whether there is a managed access procedure in place for authorised users of personal data
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		<p>Other Ethical concerns may arise when considering:</p> <ul style="list-style-type: none"> • How you store and transfer data, • who can see/use the data and how long it is kept <p><i>Note: You should demonstrate that you are aware of this and have planned accordingly.</i></p> <p>DCU Supports:</p> <p>DCU Research Ethics Committee (DCU REC) provides support and advice, including one-to-one consultations, for researchers going through the ethics review process (see the REC webpages for information on Personal Data and the Research Ethics Process).</p> <p>DCU Data Protection Unit (DCU DPU) assists staff, students, members of the public, and other interested parties in understanding DCU's approach in enduring compliance with data protection legislation. See the DCU DPU Toolkit for Researchers for additional guidance.</p> <p>DCU GDPR Advocates assist with specific queries related to the management of personal data within a research proposal as well as all other matters relating to data protection generally. For a list of GDPR Advocates by Unit please click here.</p>
	<p><i>How will you manage copyright and Intellectual Property Rights issues?</i></p>	<p>Things to consider:</p> <ul style="list-style-type: none"> • Who owns the data? • How will the data be licensed for reuse? • Are there any restrictions on the reuse of third-party data? • Will data sharing be postponed / restricted e.g. to publish or seek patents?

		<p>State who will own the copyright and intellectual property rights (IPR) of any data that you will collect or create, along with the licence(s) for its use and reuse. For multi-partner projects, IPR ownership may be worth covering in a consortium agreement. Consider any relevant funder, institutional, departmental or group policies on copyright or IPR. Also consider permissions to reuse third-party data and any restrictions needed on data sharing.</p> <p>DCU Supports:</p> <p>DCU:Innovate Enterprise is the designated technology transfer office of the University. The DCU:Innovate team is available to provide advice and support in relation to technology transfer, intellectual property, commercialisation and engagement with enterprise activities. Researchers should contact the team for assistance regarding IP considerations in their research proposals and projects.</p> <p>In DCU all IP is managed in line with the National IP Protocol (2019). In a research project each party will own the Foreground IP it creates and Joint Ownership Membership Agreements (JOMAs) are usually put in place between the parties, as needed, for any jointly created IP.</p> <p>DCU:Innovate “Introduction to IP” Guide – see here for more details.</p> <p>DCU:Innovate Template agreements (including non-disclosure agreements and material transfer agreements) – see here for more details.</p> <p>Useful Resources and Further Guidance:</p> <ul style="list-style-type: none">• DCU IP Policy• Creative Commons License Chooser• Creative Common Licenses
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<p>Storage, Backup and Security</p>	<p><i>How will the data be stored and backed up during the research?</i></p>	<p>Describe where the data will be stored and backed up during the course of research activities. This may vary if you are doing fieldwork or working across multiple sites so explain each procedure. Identify who will be responsible for backup and how often this will be performed.</p> <p>Storage:</p> <p>Storing data on laptops, computer hard drives or external storage devices alone is very risky. The use of robust, managed storage provided by university IT teams is preferable. If you choose to use a third-party service, you should ensure that this does not conflict with any funder, institutional, departmental or group policies, for example in terms of the legal jurisdiction in which data is held or the protection of sensitive data.</p> <p>DCU DTS general advice:</p> <p>Your DCU account gives you access to a number of different file storage and file sharing options. You can use these services to save your files, backup your data, and share files with your collaborators. DTS does not recommend storing data on laptops, hard drives, or other external storage devices such as USB sticks. Cloud storage (web based) of research data is recommended by DTS.</p> <p>Encryption options at DCU:</p> <ul style="list-style-type: none"> ● DCU laptops are encrypted automatically by DCU DTS ● Microsoft Office Files ● HEAnet Filesender ● 7 Zip <p>Note that even if your laptop is encrypted it is still not recommended to store data in the laptop and/or email sensitive files from the laptop when sharing data. The most secure option to share data is through cloud based storage options available in DCU (see above).</p>
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	<p><i>How will you manage access and security?</i></p>	<p>Consider the following:</p> <ul style="list-style-type: none"> • Who will have access to the data during the research? • How will you ensure that collaborators can access the data securely? • How will you ensure that collaborators outside of the EU (e.g. where GDPR does not apply) adhere to the same data security requirements as you, members of your research team and EU-based partners? • Is an embargo period needed for all or some of the data? • If creating or collecting data in the field how will you ensure its safe transfer into your main secured systems? <p>If your data is confidential (e.g. personal data not already in the public domain, confidential information or trade secrets), you should outline any appropriate security measures and note any formal standards that you will comply with e.g. ISO 27001.</p> <p>In particular, when dealing with sensitive data you must ensure:</p> <ul style="list-style-type: none"> • The protection of research subjects from harm that might result from unintended disclosure or inappropriate use of confidential data • Adhere to requirements specified in any restricted use agreements <p>Access control</p> <p>Sensitive and confidential data can be protected by regulating or restricting access to and the use of the data. Access controls are usually proportionate to the kind of data and level of confidentiality involved. The access controls for your research data</p>

		<p>are guided by specific requirements in your chosen Archive or Repository, so it is important to familiarise yourself with data access requirements from the outset of your research project.</p> <p>There are different levels of access for data:</p> <ol style="list-style-type: none"> 1. <i>Open data</i> (data can be accessed by any user for any reason, including commercial) 2. <i>Safeguarded data</i> (data that are available only under certain conditions e.g. the user should use the data for teaching or/and research purposes only) 3. <i>Controlled data</i> (suitable for data that may be disclosed, access to data is regulated by a special agreement) 4. <i>Embargo</i> (allows a temporary embargo on the actual data, only description of the dataset is published during the embargo period) <p>Useful resources and further guidance:</p> <ul style="list-style-type: none"> • Research Data Netherlands “Addressing a researcher’s data sharing concerns” • Open AIRE Guide “How to Make Your Data Fair”
<p>Selection & Preservation</p>	<p><i>Which data are of long-term value and should be retained, shared and/or preserved?</i></p>	<p>You should start planning for long term preservation of your data from the outset of your project. You will need to build in preservation planning early on and adjust it to any research outcomes that emerge during the data collection and processing stages.</p> <p>Retention:</p> <ul style="list-style-type: none"> • Indicate what data must be retained or destroyed for contractual, legal, or regulatory purposes. • Indicate what data must be retained or destroyed for contractual, legal, or regulatory purposes. • Indicate how it will be decided what data to keep.

		<p>Sharing:</p> <ul style="list-style-type: none"> • Explain the foreseeable research uses (and/or users) for the data. <p>Preservation:</p> <ul style="list-style-type: none"> • Describe the data to be preserved long-term. • Explain how the data will be prepared for transfer to a trusted digital repository for a long term preservation. <p>Useful resources and further guidance:</p> <ul style="list-style-type: none"> • Open AIRE Guide “Data formats for preservation” • Whyte, A. & Wilson, A. (2010). "How to Appraise and Select Research Data for Curation". DCC How-to Guides. Edinburgh: Digital Curation Centre. Available online: /resources/how-guides
	<p><i>What is the long-term preservation plan for the dataset?</i></p>	<p>Describe where you have selected to store or archive your data. Be sure to factor in costs, how long the data is to be held by the chosen repository, and what steps are needed to prepare the data for preservation. If you do not propose to use an established repository, the data management plan should demonstrate that resources and systems will be in place to enable the data to be curated effectively beyond the lifetime of the grant.</p> <p>Where to deposit research data</p> <ul style="list-style-type: none"> • Where possible, research data should be submitted to a discipline specific recognised repository or otherwise to general, multidisciplinary repositories. • When deciding where to archive your data, consider what repository provides the best preservation services to allow the long-term reuse of the data. <p>For Discipline Specific Repositories:</p> <ul style="list-style-type: none"> • The Registry of Research Repositories (Re3data) is a reliable, searchable database for existing repositories.

		<p>For General Purpose/Multidisciplinary Repositories:</p> <ul style="list-style-type: none"> • Zenodo (multidisciplinary repository) • Open Science Framework (multidisciplinary repository) • Figshare (multidisciplinary repository) <p>Persistent Identifiers</p> <ul style="list-style-type: none"> • Make sure that your data will be associated with a persistent identifier that is available and managed over time and will not change even if the object of preservation is moved or renamed. • Many trusted repositories, like those listed above, will provide a persistent identifier for your data. Persistent Identifiers support reference reliability and readability for both humans and machines.
<p>Data Sharing</p>	<p><i>Why and how will you share the data?</i></p>	<p>Sharing research data can benefit both the public and the research community. There are a number of reasons of why researchers should consider sharing their research data:</p> <ul style="list-style-type: none"> • Increased research impact - those who make use of your data and cite it in their own research will help to increase your impact within your field and beyond it; • Research integrity - publishing your data and citing its location in published research papers can allow your peers to replicate, validate, or correct your results, thereby improving the scientific record; • Long-term preservation of research data - by preparing your data for sharing with others, you will benefit by being able to identify, retrieve, preserve and understand the data yourself in the longer term (after you have lost familiarity with it). • Research and innovation – data created for a specific research project can be re-used and developed further for a different research project, and/or for multi-disciplinary and inter-disciplinary research projects that go beyond a specific discipline • Funder requirements – a growing number of funding bodies both at national and

		<p>international levels have adopted research data policies and mandate researchers funded by them to share research data and outputs to avoid duplication of effort and reduce data collection costs</p> <ul style="list-style-type: none"> • Publisher requirements – increasingly, publishers require data that supports research findings to be deposited in open access repositories when manuscripts are submitted <p>Articulate where, how, and to whom data with acknowledged long-term value should be made available. The methods used to share data will be dependent on a number of factors such as the type, size, complexity and sensitivity of data. If possible, mention earlier examples to show a track record of effective data sharing.</p> <p>FAIR Data Principles:</p> <p>In selecting a research data repository and preparing data for preservation, consider the following questions:</p> <ol style="list-style-type: none"> 1. Is it Findable? i.e. discoverable with metadata, identifiable and locatable by means of a standard identification mechanism 2. Is it Accessible? i.e. always available and obtainable; even if the data is restricted, the metadata is open 3. Is it Interoperable? i.e. both syntactically parseable and semantically understandable, allowing data exchange and reuse between researchers, institutions, organisations or countries 4. Is it Reusable? i.e. sufficiently described and shared with the least restrictive licences, allowing the widest reuse possible and the least cumbersome integration with other data sources. <p>Useful Resources and Further Guidance:</p> <ul style="list-style-type: none"> • Open Research Europe’s research data guidelines • Open AIRE “How to make your data FAIR”
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	<p><i>Are any restrictions on data sharing required?</i></p>	<p>The European Commission’s approach in this regard is: “Research data should be as open as possible, as closed as necessary.”</p> <p>Outline any expected difficulties in sharing data with acknowledged long-term value, along with causes and possible measures to overcome these.</p> <p>There are a number of legitimate reasons for not being able to share some or all research data generated by the research project. Data sharing may be incompatible with:</p> <ul style="list-style-type: none"> ● the obligation to protect results that can reasonably be expected to be commercially or industrially exploited ● the need for confidentiality in connection with security issues ● rules on protecting personal data <p>Or if data sharing:</p> <ul style="list-style-type: none"> ● would mean that the project's main aim might not be achieved ● is not possible because the project will not generate / collect any research data <p>If there are other legitimate reasons for not sharing data, document them in the project’s DMP and provide more details either at the proposal or grant registration stages.</p>
<p>Responsibilities and Resources</p>	<p><i>Who will be responsible for data management</i></p>	<p>A DMP is a living document and should be updated and refined during the lifetime of the project. Funders usually require the submission of the DMP within the first 6 months of the project. Any changes to the initially submitted DMP should be reported in subsequent reports to the funder (e.g. interim report and/or final report).</p> <p>Outline the following:</p> <ul style="list-style-type: none"> ● Who is responsible for implementing the DMP, and ensuring it is reviewed and revised. ● Who will be responsible for each data management activity. ● How responsibilities will be split across partner sites in collaborative research projects.

		<ul style="list-style-type: none"> • How often the plan will be reviewed and updated. <p>Additional Considerations:</p> <ul style="list-style-type: none"> • Individuals should be named where possible. • Will data ownership and responsibilities for RDM be part of any consortium agreement or contract agreed between partners? • What are your obligations if engaged in a project funded by a national or international funder? <p>Depending on the size of your project consider hiring a project manager or appointing a specific person in the project who, alongside their main function, will also have the responsibility of data management in the project. It is also advisable to have a specific task in one of your project's Work Packages (usually included as part of the Project Management Work Package) dedicated to RDM activities. If you are collaborating with multiple partners, make sure to discuss and agree on who will have ownership of the data and how the data will be used and shared after the project ends.</p> <p>DCU Supports and guidance:</p> <ul style="list-style-type: none"> • DCU Research Support's guidance on Irish and international funders' data management requirements (including Research Ireland, HRB, EPA, EU Horizon Europe and Wellcome) • Writing the Data Management Statement in Funding Applications – Workshop offered by DCU Research Support's Grant Writing Workshop Series
	<p><i>What resources will you require to deliver your plan?</i></p>	<p>Carefully consider any resources needed to deliver the plan, e.g. software, hardware, technical expertise, etc. Where dedicated resources are needed, these should be outlined and justified. Data management costs should be justified and included in research proposals' budgets. These costs and their justification need to be written in at application stage and need to be considered at the beginning of the research project to ensure that any</p>

		<p>RDM costs are incurred within the time of the award.</p> <p>Research Data Management costs can include:</p> <ul style="list-style-type: none"> ● Hiring of relevant personnel, part time or full time (support for dedicated data managers and/or data scientists) ● Training in RDM and/or software management ● Storage and computation (dedicated hardware or software; costs to access supercomputers and shared facilities; routine data storage) ● Creation and reuse of data (costs to access data; transcription, anonymization; obtaining informed consent) ● Deposition and Preservation (preparation of data for deposit in an Archive or Repository e.g. transcription, data cleaning, creating metadata; deposition costs for Archives and Repositories; costs for curation and maintenance of data and associated materials beyond the lifetime of the research project and/or grant) <p>Research Data Management costing tools:</p> <ul style="list-style-type: none"> ● Open AIRE Guide “How to identify and assess research data management costs” ● Utrecht University RDM costing tool
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ANNEX 1
Examples of Data Management Plans¹

1. ["TANGO - Estimating Tipping points in habitability of ANtarctic benthic ecosystems under GLObal future climate change scenarios"](#)
An ideal example of a comprehensive, yet concise DMP, using the base DCC (Digital Curation Centre) guidance and template.
2. ["The discovery of viable diagnostic biomarkers for Lewy body dementia using machine learning algorithms"](#)
This DMP includes genetic data and machine learning techniques using the University of Nottingham template.
3. ["Improving Reproducibility in Science \(iRISE\)"](#)
This is a very detailed, comprehensive DMP which documents a mixed-methods approach and multiple research outcomes using the Horizon Europe template.
4. ["UNICA. Building a UNified theory for the development and resilience of Institutions for Collective Action for Europe"](#)
An example of a DMP for a project which includes gathering data via literature review, using the Data Management Plan NWO template.
5. ["Dam Safety Early Warning Systems Using Remote Sensing and IoT"](#)
This is an example of a concise, well structured DMP using the base DCC template.
6. ["DRIFT: Refining Ireland's Glacial History to De-Risk Mineral Exploration"](#)
This DMP includes cosmogenic/radiocarbon dating data and is written using the Health Research Board (HRB) template.

¹ Please note that all Exemplar DMPs are provided openly by their authors and are made available via the Digital Curation Centre's DMPOnline tool.

ANNEX 2 Further Resources

1. [Digital Curation Centre \(DCC\) Guidance](#)

The DCC manages DMPonline and provides a number of resources pertaining to open research and data management.

2. [DCU Data Protection Toolkit for Researchers](#)

Developed by DCU's Data Protection Unit, this toolkit is essential for researchers looking to safely manage data with personal information.

3. [FAIRsharing.org](#)

FAIRsharing is a hub for standards, databases, and policies relevant to FAIR data principles.

4. [OpenAIRE Guides for Researchers](#)

OpenAIRE offers guides on research data management and on complying with Horizon Europe requirements.

5. [Horizon Europe Data Management Plan Template](#)

To prepare the DMP of your project, Horizon Europe makes a DMP template available. The use of this template is recommended but not mandatory.