# EPSRC DMP Template *(With guidance notes)*

### Admin Details

**Plan Name:** EPSRC Data Management Plan

**Principal Investigator / Researcher:**

**Funder:** EPSRC

**Institution:** Royal College of Art

**1. Data Collection**

**1.1 What data will you collect or create?**

***EPSRC Policy Expectations***

*Research data is defined by EPSRC as recorded factual material commonly retained by and accepted in the scientific community as necessary to validate research findings.*

*Although the majority of such data is created in digital format, all research data is included irrespective of the format in which it is created.*

***RCA/DCC guidance: Data description***

*Give a summary of the data you will collect or create, noting the content, coverage and data type, e.g., tabular data, survey data, experimental measurements, models, software, audiovisual data, physical samples, etc.*

*Consider how your data could complement and integrate with existing data, or whether there are any existing data or methods that you could reuse.*

*Indicate which data are of long-term value and should be shared and/or preserved.*

*If purchasing or reusing existing data, explain how issues such as copyright and IPR have been addressed. You should aim to minimise any restrictions on the reuse (and subsequent sharing) of third-party data.*

**1.2 How will the data be collected or created?**

***EPSRC Policy Expectations*** *Plans should be in accordance with relevant standards and community best practice.*

***RCA/DCC guidance: Data collection***

*Outline how the data will be collected and processed. This should cover relevant standards or methods, quality assurance and data organisation.*

*Indicate how the data will be organised during the project, mentioning, e.g., naming conventions, version control and folder structures. Consistent, well-ordered research data will be easier to find, understand and reuse.*

*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.*

*See the DataOne Best Practices for*[*data quality*](https://www.dataone.org/best-practices/quality)*.*

**2. Documentation and Metadata**

**What documentation and metadata will accompany the data?**

***EPSRC Policy Expectations***

*Sufficient metadata should be recorded and made openly available to enable other researchers to understand the potential for further research and re-use of the data.*

*EPSRC recommends that appropriately structured metadata is published (normally within 12 months of the data being generated) and made freely accessible on the internet. In each case the metadata must be sufficient to allow others to understand what research data exists, why, when and how it was generated, and how to access it.*

*Where the research data referred to in the metadata is a digital object, it is expected that the metadata will include use of a robust digital object identifier (For example as available through the* [*DataCite organisation*](http://www.datacite.org/)*).*

*Published research papers should include a short statement describing how and on what terms any supporting research data may be accessed.*

*Think about how much time/effort will be needed to create appropriate supporting documentation/metadata prior to depositing retained data, and ensure you have the resources to cover this aspect.*

***RCA/DCC guidance on Metadata*** *Questions to consider:*

* *How will you capture / create the metadata?*
* *Can any of this information be created automatically?*
* *What metadata standards will you use and why?*

*Metadata should be created to describe the data and aid discovery. Consider how you will capture this information and where it will be recorded e.g. in a database with links to each item, in a ‘readme’ text file, in file headers etc.*

*Researchers are strongly encouraged to use community standards to describe and structure data, where these are in place. The DCC offers a* [*catalogue of disciplinary metadata standards*](http://www.dcc.ac.uk/resources/metadata-standards)*.*

***RCA/DCC guidance on Documentation*** *Questions to consider:*

* *What metadata, documentation or other supporting material should accompany the data for it to be interpreted correctly?*
* *What information needs to be retained to enable the data to be read and interpreted in the future?*

*Describe the types of documentation that will accompany the data to provide secondary users with any necessary details to prevent misuse, misinterpretation or confusion. This may include information on the methodology used to collect the data, analytical and procedural information, definitions of variables, units of measurement, any assumptions made, the format and file type of the data.*

**3. Ethics and Legal Compliance**

**3.1 How will you manage any ethical issues?**

***EPSRC Policy Expectations*** *EPSRC recognises that there are legal, ethical and commercial constraints on release of research data. To ensure that the research process (including the collaborative research process) is not damaged by inappropriate release of data, research organisation policies and practices should ensure that these constraints are considered at all stages in the research process.*

***DCC guidance on Ethical Issues*** *Questions to consider:*

* *Have you gained consent for data preservation and sharing?*
* *How will sensitive data be handled to ensure it is stored and transferred securely?*
* *How will you protect the identity of participants? e.g. via anonymisation or using managed access procedures*

*Investigators carrying out research involving human participants must ensure that consent is obtained to share data. Managing ethical concerns may include: anonymisation of data; referral to departmental or institutional ethics committees; and formal consent agreements. Ethical issues may affect how you store data, who can see/use it and how long it is kept. You should show that you’re aware of this and have planned accordingly.*

*See UKDS guidance on* [*consent for data sharing*](http://ukdataservice.ac.uk/manage-data/legal-ethical/consent-data-sharing.aspx)

**3.2 How will you manage copyright and Intellectual Property Rights (IPR) issues?**

***EPSRC Policy Expectations*** *EPSRC expects those it funds to maximise the impact of their research for the benefit of the UK, including (but not limited to) the efficient recognition, protection and exploitation of intellectual property. Collaboration in EPSRC-funded research by private sector organisations is particularly important in this regard.*

*EPSRC expects that research organisations will make appropriate use of the provisions available in the legislation to guard against inappropriate release of research data which might damage the collaborative research process, and work against the national interests of the UK, In this regard, EPSRC views the use of appropriate confidentiality agreements and publication plans as essential elements of research management strategy.*

***RCA/DCC guidance on IPR Ownership and Licencing*** *Questions to consider:*

* *Who owns the data?*
* *How will the data be licensed for reuse?*
* *If you are using third-party data, how do the permissions you have been granted affect licensing?*
* *Will data sharing be postponed / restricted e.g. to seek patents?*

*State who will own the copyright and IPR of any new data that you will generate. For multi-partner projects, IPR ownership may be worth covering in a consortium agreement. If purchasing or reusing existing data sources, consider how the permissions granted to you affect licensing decisions. Outline any restrictions needed on data sharing e.g. to protect proprietary or patentable data.*

*See the DCC guide:* [*How to license research data*](http://www.dcc.ac.uk/resources/how-guides/license-research-data)*.*

### 4. Storage and Backup

**4.1 How will the data be stored and backed up during the research?**

***EPSRC Policy Expectations*** *When considering where to store your data, please bear in mind that all reasonable steps should be taken to ensure that publicly-funded data is not held in any jurisdiction where the available legal safeguards provide lower levels of protection than are available in the UK.*

***RCA/DCC guidance: Storage & security***

*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. The use of robust, managed storage with automatic backup, for example, that provided by university IT teams, is preferable. Storing data on laptops, computer hard drives or external storage devices alone is very risky.*

*See UK Data Service Guidance on*[*data storage*](https://www.ukdataservice.ac.uk/manage-data/store)*or DataONE Best Practices for*[*storage*](https://www.dataone.org/best-practices/storage)*.*

*Also consider data security, particularly if your data is sensitive e.g., detailed personal data, politically sensitive information or trade secrets. Note the main risks and how these will be managed. Also note whether any institutional data security policies are in place.*

*Identify any formal standards that you will comply with, e.g., ISO 27001. See the DCC Briefing Paper on Information Security Management -*[*ISO 27000*](http://www.dcc.ac.uk/resources/briefing-papers/standards-watch-papers/information-security-management-iso-27000-iso-27k-s)*and UK Data Service guidance on*[*data security*](https://www.ukdataservice.ac.uk/manage-data/store/security)*.*

*The RCA makes available the institutionally managed Google Drive suite of applications. Google Drive data is stored on servers within the EU and has been assessed by the RCA as a safe and appropriate venue for research data. Google Drive allows for files and data to be accessed from multiple devices, so multiple project team members can work on them collaboratively. Google Drive also permits individual permissions so access to sensitive data can be managed as appropriate with internal and external partners. As a Cloud-based online technology, Google Drive removes the risk of data loss as automatic backup of all data is ensured. Furthermore, Google Suite has in-built version control meaning that older versions of the data are retained and backed up, thus guarding against human input error and ensuring retrieval of older versions if necessary. Google Suit undergoes regular independent audits on their data centres, network and operations. This is in compliance with the certified industry standards such as ISO 27001 and 27017.*

**4.2 How will you manage access and security?**

***EPSRC Policy Expectations*** *Where research data is subject to restricted access, research organisations should implement and manage appropriate security controls.*

***RCA/DCC guidance on Data Security*** *See guidance above is section 4.1*

### 5. Selection and Preservation

**5.1 Which data are of long-term value and should be retained, shared, and/or preserved?**

***EPSRC Policy Expectations*** *Data with acknowledged long term value should be preserved and remain accessible and useable for future research.*

*Such research data should be securely preserved for a minimum of 10 years from the date that any researcher ‘privileged access’ period expires or, if others have accessed the data, from last date on which access to the data was requested by a third party.*

***RCA/DCC guidance:*** ***Preservation***

*Describe how you will preserve and share your data, including the length of time they will be kept and the nature of the storage location. The RCA Research Data Management Policy requires that all data needed to validate research findings are kept for a minimum of 10 years. Also indicate if any additional resources or funding will be required to deposit and store the data.*

*Funders generally expect data with long-term value to be preserved and remain accessible, alongside the software and code needed to reproduce your findings. This does not mean that you need to keep all of your data, but you will need to state who will be responsible for choosing and archiving data, as well as documenting the removal of any data that must be destroyed.*

*It is particularly important to preserve data which cannot be remeasured or recreated. Many research funders specify which data need to be preserved, how long for and where they should be deposited. See the DCC guide*[*How to appraise and select research data for curation*](http://www.dcc.ac.uk/resources/how-guides/appraise-select-data)*.*

**5.2 What is the long-term preservation plan for the dataset?**

***EPSRC Policy Expectations*** *EPSRC expects Research Organisations to ensure that researchers have access to and use appropriate research data storage facilities, which may be directly owned and managed by the research organisation, or by a third party, or by a combination of the two, and may be generally known as either an institutional or a subject-based data repository.*

***RCA/DCC guidance: Data repository***

*Long-term preservation and access is generally best managed by using a specialist repository. While you don’t have to specify the repository you will use, you should state the criteria you will use to select it. When considering a repository, you should examine their policies, procedures, metadata standards and any costs that might be incurred. If using a storage facility other than an established repository or data centre, you will need to demonstrate its efficacy and longevity.*

*Some funders specify a data repository, such as*[*UK Data Service ReShare*](http://reshare.ukdataservice.ac.uk/)*,*[*NERC Data Centres*](http://www.nerc.ac.uk/research/sites/data/)*or*[*Archaeology Data Service*](http://archaeologydataservice.ac.uk/)*. Resources such as*[*re3data*](http://www.re3data.org/)*and those provided by* [*BBSRC*](https://bbsrc.ukri.org/research/resources/#datasharing)*or*[*Nature*](https://www.nature.com/sdata/policies/repositories) *can be used to find an appropriate repository. General purpose repositories that you may consider are* [*Zenodo*](https://zenodo.org/) *and* [*Figshare*](https://figshare.com/)*; these are non-discipline specific open access repositories that will ensure the preservation of data for a minimum of 10 years from the last point of access and provide a permanent DOI for the data. Alternatively, RCA researchers can deposit small datasets, particularly those containing textual or visual material, in the RCA Research Repository. All research data selected for long-term preservation should be registered in the RCA Research Data Repository, irrespective of where the data files themselves are deposited. Research data in non-digital formats, and digital data that cannot be made accessible or requires controlled access, should also be registered in the RCA Research Repository. This will increase the discoverability and visibility of the research data.*

### 6. Data Sharing

**6.1 How will you share the data?**

***EPSRC Policy Expectations*** *Researchers are expected to facilitate data preservation and sharing.*

*Publicly-funded research data that is not generated in digital format should be stored in a manner to facilitate it being shared in the event of a valid request for access to the data being received.*

***RCA/DCC guidance:*** ***Data sharing***

*Outline which data you will share and how you will share them, e.g. depositing in a repository, using a secure data service or dealing with data requests individually. The method(s) used will depend upon the size and nature of the data. You should use standards and formats that enable reuse, and ensure data is discoverable through use of accurate metadata and persistent identifiers.*

*The Digital Curation Centre provides useful advice about*[*data appraisal and selection*](http://www.dcc.ac.uk/resources/how-guides/appraise-select-data)*.*

*Whatever form of publishing is used, research data should be licensed to indicate what users may or may not do with the data. Data repositories will indicate what licences are available for the data they house. More information is available from the Digital Curation Centre on* [*how to license research data*](http://www.dcc.ac.uk/resources/how-guides/license-research-data)*.*

*For all Royal College of Art research, a metadata record should be registered in the RCA Research Repository.*

*A Data Access statement should also be included in any publication based upon the research data. A Data Access Statement is a short statement explaining where the data is available, and under what license or access conditions. This helps to further increase the visibility of the data whilst also supporting the validity and reproducibility of your research findings.*

**6.2 Are any restrictions on data sharing required?**

***EPSRC Policy Expectations*** *EPSRC-funded researchers are entitled to a limited period of privileged access to the data they collect to allow them to work on and publish their results. The length of this period will depend on the scientific discipline and the nature of the research.*

*Where access to the data is restricted, the published metadata should give the reason and summarise the conditions which must be satisfied for access to be granted. For example ‘commercially confidential’ data, in which a business organisation has a legitimate interest, might be made available to others subject to a suitable legally enforceable non-disclosure agreement.*

***RCA/DCC guidance on Restrictions on Sharing*** *Most funders allow a delayed release to allow researchers to have exclusive use of their data and to exploit the results of their research. See the RCA page on Research Funder Policies to determine when you need to make your data available. Restrictions on the release of data may be allowed, to protect confidentiality and for other ethical and legal reasons.*

*While restrictions on sharing should be minimised, you should take into account the following when sharing data:*

* *Does your data include confidential and sensitive information?*
* *Have participants given consent for their data to be shared?*
* *Consider what can be done to make sensitive data openly sharable - can these data be anonymised?*
* *Do different parts of your data require different access conditions? These may require separate deposits.*
* *Who will be responsible for controlling access?*

### 7. Responsibilities and Resources

**7.1 Who will be responsible for data management?**

***EPSRC Policy Expectations*** *Research organisations should ensure that effective data curation is provided throughout the full data lifecycle, with ‘data curation’ and ‘data lifecycle’ being* [*as defined by the Digital Curation Centre*](http://www.dcc.ac.uk/digital-curation/what-digital-curation)*.*

*The full range of responsibilities associated with data curation over the data lifecycle should be clearly allocated within the research organisation.*

***RCA/DCC Guidance*** *Questions to consider:*

* *Who is responsible for implementing the DMP, and ensuring it is reviewed and revised?*
* *Who will be responsible for each data management activity?*
* *How will responsibilities be split across partner sites in collaborative research projects?*
* *Will data ownership and responsibilities for RDM be part of any consortium agreement or contract agreed between partners?*

*Outline the roles and responsibilities for all activities e.g. data collection, metadata production, data quality, storage and backup, data curation & data sharing. Consider who will be responsible for ensuring relevant policies will be respected. Individuals should be named where possible.*

**7.2 What resources will you require to deliver your plan?**

***EPSRC Policy Expectations*** *It is appropriate to use public funds to support the preservation and management of publicly-funded research data. To maximise the scientific benefit which can be gained from limited budgets, the mechanisms for managing and providing access to research data should be both efficient and cost-effective in the use of such funds.*

*Research organisations could allocate resources from within their existing public funding streams, whether received from Research Councils as direct or indirect support for specific projects or from higher education funding councils as block grants.*

*Researchers may need to discuss with their research/finance office about how best to ensure the anticipated costs of RDM for their project are met.*

*The EPSRC, together with other UK research funders, provided clarifications on* [*including RDM-related costs in grant proposals*](http://blogs.rcuk.ac.uk/files/2013/07/RCUK-Responses-to-DCC-RDMF-Funder-Questions-.pdf)*.*

***RCA/DCC Guidance*** *Questions to consider:*

* *Is additional specialist expertise (or training for existing staff) required?*
* *Do you require hardware or software which is additional or exceptional to existing institutional provision?*
* *Will charges be applied by data repositories?*

*Carefully consider any resources needed to deliver the plan. Where dedicated resources are needed, these should be outlined and justified. Outline any relevant technical expertise, support and training that is likely to be required and how it will be acquired. Provide details and justification for any hardware or software which will be purchased or additional storage and backup costs*

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*Funding should be included to cover any charges applied by data repositories, for example to handle data of exceptional size or complexity. Also remember to cost in time and effort to prepare data for deposit and ensure it is adequately documented to enable reuse. If you are not depositing in a data repository, ensure you have appropriate resources and systems in place to share and preserve the data.*

*See UKDS guidance on* [*costing data management*](http://ukdataservice.ac.uk/manage-data/plan/costing.aspx)*.*