# BBSRC DMP Template *(With Guidance Notes)*

### Admin Details

**Plan Name:** BBSRC Template

**Principal Investigator / Researcher:**

**Funder:** BBSRC

**Institution:** Royal College of Art

### 1. Data areas and data types

**Outline the volume, type and content of data that will be generated e.g. experimental measurements, models, records and images**

***BBSRC Guidance***

*BBSRC recognises that effective data sharing is already practiced in certain areas and expects this to continue. BBSRC supports, either directly or indirectly, a number of such resources. Data sharing in other areas is also expected where there is a strong scientific case and where it is cost effective.*

*BBSRC has identified a number of areas where there is a particularly strong scientific case for data sharing. These are:*

* *Data arising from high volume experimentation*
* *Low throughput data arising from long time series or cumulative approaches*
* *Models generated using systems approaches*

*BBSRC expects data sharing to take place in these areas.*

***RCA/DCC guidance on Data Description***

*Give a summary of the data you will collect or create, noting the volume, 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.*

### 2. Standards and metadata

**Outline the standards and methodologies that will be adopted for data collection and management, and why these have been selected**

***BBSRC Guidance***

*Standards are fundamental to effective data sharing. These can include standards for administrative processes, as well as for methodologies relating to data management and data formats. Researchers are expected to make use of current guidance and information on best practice.*

*It is expected that, in order to maximise the potential for re-use of data, BBSRC researchers should generate and manage data using existing widely accepted formats and methodologies where available. Data released for sharing should be validated and verified in line with accepted best practice and be of high quality. Data should be accompanied by the contextual information or documentation (metadata) needed to provide a secondary user with any necessary details on the origin or manipulation of the data in order to prevent any misuse, misinterpretation or confusion. Where standards for metadata exist, it is expected that these should be adhered to.*

*BBSRC encourages community development of standards where these do not currently exist or are not widely accepted and provides funding mechanisms for support of this type of activity.*

***RCA/DCC guidance on Data Quality & format***

*What metadata will be provided to help others identify and discover the data?*

*Researchers are strongly encouraged to use community metadata standards where these are in place. The Research Data Alliance offers a*[*Directory of Metadata Standards*](http://rd-alliance.github.io/metadata-directory/)*. Data repositories may also provide guidance about appropriate metadata standards.*

*Consider what other documentation is needed to enable reuse. 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 and software used to collect and/or process the data.*

*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.*

*Clearly note what format(s) your data will be in, e.g., plain text (.txt), comma-separated values (.csv), geo-referenced TIFF (.tif, .tfw).*

*Explain why you have chosen certain formats. Decisions may be based on staff expertise, a preference for open formats, the standards accepted by data centres or widespread usage within a given community.*

*Using standardised, interchangeable or open formats ensures the long-term usability of data; these are recommended for sharing and archiving.*

*See UK Data Service guidance on*[*recommended formats*](https://www.ukdataservice.ac.uk/manage-data/format/recommended-formats)*or DataONE Best Practices for*[*file formats*](https://www.dataone.org/best-practices/document-and-store-data-using-stable-file-formats)*.*

### 3. Relationship to other data

**State the relationship to other data available in public repositories**

***RCA/DCC guidance on Relationship to Existing Data***

*Questions to consider:*

* *What is the relationship to existing data e.g. in public repositories?*
* *How does your data complement and integrate with existing data?*

*Guidance:*

*Consider the relationship between the data that you will capture and existing data available in public repositories or elsewhere.*

### 4. Secondary Use

**Outline the further intended and/or foreseeable research uses for the completed dataset(s)**

***BBSRC Guidance***

*BBSRC supports the view that those enabling sharing should receive full and appropriate recognition by funders, their academic institutions and new users for promoting secondary research.*

*Where data are shared through a third party resource or databases, secondary users should acknowledge the source of data. Where data are shared directly from the originator, depending on the level of usage and collaboration either joint authorship or acknowledgement to the data originator may be appropriate. It is also important to ensure that researchers and their research institutions are protected against claims that application of their data led to wrong conclusions/decisions by others: any use made of any data generated by third parties would not come with a warranty of its quality.*

*Furthermore, BBSRC expects that researchers accessing data have responsibilities to preserve data confidentiality and to observe the ethical and legal obligations pertaining to the data.*

***RCA/DCC guidance on Expected Reuse***

*How might your data be reused in other contexts? Where there is potential for reuse, you should use standards and formats that facilitate this, and ensure that appropriate metadata is available online so your data can be discovered. Persistent identifiers should be applied so people can reliably and efficiently find your data. They also help you to track citations and reuse.*

### 5. Methods for data sharing

**Outline the planned mechanisms for making these data available, e.g. through deposition in existing public databases or on request, including access mechanisms where appropriate**

***BBSRC Guidance***

*BBSRC recognises that different approaches to data sharing will be required in different situations and considers that it is most appropriate for researchers to determine their own strategies for data sharing and outline these within their research grant proposal(s). Applicants should consider where, how, and to whom their data should be made available.*

*In addition, data sharing practices will change as areas of research develop and become more mature. This can be observed by looking at the areas of sequencing (i.e. well established mechanisms in place), microarrays (i.e. standards developed and being implemented) and systems biology (i.e. databases currently not well developed). Consideration should be given to what constitutes good practice in emerging areas of research.*

*It is expected that data sharing strategies will fall into the two broad categories below.*

*Data Sharing via a 3rd Party*

*Data sharing via deposition in an existing database, repository or other community resource is expected where possible and researchers are encouraged to share data through mechanisms affording the widest availability for generating added value and enabling re-use.*

*Researchers are encouraged to use existing infrastructure to facilitate data sharing where possible. BBSRC funds or otherwise supports a number of such resources. Where no such resources exist, applicants may consider sharing data via other third party mechanisms such as journal websites and / or open access repositories, many of which are now able to capture and share data underpinning publications.*

*Direct Data Sharing: from Originator to Others*

*This method of data sharing may be appropriate for areas where suitable third party mechanisms are not available. Researchers are expected to ensure that data are maintained for a period of 10 years after the completion of the research project in suitable accessible formats using established standards where possible such that the data can be made available on request in line with BBSRC guidance on good scientific practice. This may lead to collaboration between the new user and the original data creators, with the responsibilities and rights of all parties agreed at the outset.*

*Other mechanisms for data sharing may be used where appropriate. These could include sharing data within closed communities or a combination of methods for different datasets. Specific access mechanisms could be appropriate for example where there are ethical considerations, a need to protect confidential data, or other reasons for limiting access.*

***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 vidsual 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. Proprietary data

**Outline any restrictions on data sharing due to the need to protect proprietary or patentable data**

***BBSRC Guidance*** *In instances where BBSRC and a commercial partner jointly fund academic research work (for example LINK projects) there may be some restrictions over releasing data. Any such restrictions on data sharing due to co-funding arrangements should be set out in the “statement on data sharing” section of an application and will be considered when a grant application is peer reviewed. Applicants should also ensure they have obtained necessary clearances from relevant collaborators with regards to the content of the proposal including the data sharing plan in line with the BBSRC Research Grants Guide.*

***RCA/DCC guidance: guidance on Restrictions on Sharing***

*Questions to consider:*

* *Are any restrictions on data sharing required? e.g. limits on who can use the data, when and for what purpose.*
* *What restrictions are needed and why?*
* *What action will you take to overcome or minimise restrictions?*

*Outline any expected difficulties in data sharing, along with causes and possible measures to overcome these. Restrictions to data sharing may be due to participant confidentiality, consent agreements or IPR. Strategies to limit restrictions may include: anonymising or aggregating data; gaining participant consent for data sharing; gaining copyright permissions; and agreeing a limited embargo period.*

***RCA/DCC guidance on IPR Ownership and Licensing***

*State who will own the copyright and IPR of any existing data as well as new data that you will generate. For multi-partner projects, IPR ownership should be covered in the consortium agreement.*

*Outline any restrictions needed on data sharing, e.g., to protect proprietary or patentable data.*

*Explain how the data will be licensed for reuse. See the DCC guide on*[*How to license research data*](http://www.dcc.ac.uk/resources/how-guides/license-research-data)*and EUDAT’s*[*data and software licensing wizard*](https://ufal.github.io/public-license-selector/)*.*

### 7. Timeframes

**State the timescales for public release of data**

***BBSRC Guidance***

*The value of data often depends on timeliness. Researchers have a legitimate interest in benefiting from their own time and effort in producing data, but not in prolonged exclusive use of these data. BBSRC expects that all data (with accompanying metadata) should be shared in a timely fashion as soon as it is verified. It is expected that timely release would generally be no later than the release through publication of the main findings and should be in-line with established best practice in the field. Where best practices does not exist release within three years of generation of the dataset is suggested as a guide.*

*The timescale for release for the data may differ for several reasons, depending on the nature of the data. These reasons may include:*

* ***Scientific Area:*** *Researchers are expected to make data available in-line with established practices within the relevant research community. Examples include:* 
  + *Crystallography (Protein Data Bank) - the community has agreed a maximum 12-month delay between publishing the first paper on a structure and making coordinates public for secondary use.*
  + *Sequencing (EMBL Nucleotide Sequence database) – submitted data can be withheld from public access until publication of results but no later.*
  + *Metabolomics (MeT-RO) – Up to a six-month delay in publication can be requested.*
  + *Arabidopsis microarray data (NASC Affymetrix service) – all data are made available after a maximum one-year confidential period.*
* ***Intellectual Property (IP) issues and potential for commercialisation of research outputs:*** *New knowledge generates patentable ideas. BBSRC is also driving a policy of Knowledge Transfer and strongly encourages the commercialisation of IP through various initiatives. BBSRC recognises the need for periods of exclusive use of data but considers that commercialisation of research does not preclude data sharing and should not unduly delay or prevent data sharing. Any IP issues or plans for commercialisation should be highlighted in the case for support of the grant application.*
* ***Length or scope of research project:*** *Data from large studies may be released in waves as they become available or as they are published.*

***RCA/DCC guidance on Timeframe For Data Sharing***

*Questions to consider:*

* *When will you make the data available?*

*Data (with accompanying metadata) should be shared in a timely fashion. It is generally expected that timely release would be no later than publication of the main findings and should be in-line with established best practice in the field. Researchers have a legitimate interest in benefiting from their investment of time and effort in producing data, but not in prolonged exclusive use. Research funders typically allow embargoes in line with practice in the field, but expect these to be outlined up-front and justified.*

### 8. Formats

**State the format of the final dataset**

***RCA/DCC guidance on Data Format***

*Clearly note what format(s) your data will be in, e.g., plain text (.txt), comma-separated values (.csv), geo-referenced TIFF (.tif, .tfw).*

*Explain why you have chosen certain formats. Decisions may be based on staff expertise, a preference for open formats, the standards accepted by data centres or widespread usage within a given community.*

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