# Data Management Planning themes

When developing DMPonline v.4, the Digital Curation Centre conceived a list of themes that are commonly addressed in Data Management Plans. The questions within DMP templates are tagged with these themes, and guidance can be written by theme to allow organisations to apply their advice over multiple templates at once. In collaboration with the DMPTool, we hope to use a refined set of themes to support our objectives around machineactionable Data Management Plans.

**Themes used in DMPonline**

| Theme | DCC guidance | Associated questions |
|---|---|---|
| ID | A pertinent ID as determined by the funder and/or institution. | |
| PROJECT DESCRIPTION | **Questions to consider:**<br>- What is the nature of your research project?<br>- What research questions are you addressing?<br>- For what purpose are the data being collected or created?<br>**Guidance:**<br>Briefly summarise the type of study (or studies) to help others understand the purposes for which the data are being collected or created. | MRC q1.1 |
| RELATED POLICIES | **Questions to consider:**<br>- Are there any existing procedures that you will base your approach on?<br>- Does your department/group have data management guidelines?<br>- Does your institution have a data protection or security policy that you will follow?<br>- Does your institution have a Research Data Management (RDM) policy?<br>- Does your funder have a Research Data Management policy?<br>- Are there any formal standards that you will adopt?<br>**Guidance:**<br>List any other relevant funder, institutional, departmental or group policies on data management, data sharing and data security. Some of the information you give in the remainder of the DMP will be determined by the content of other policies. If so, point/link to them here. | CRUK PRC q6.1<br>MRC q7 |
| EXISTING DATA | **Questions to consider:**<br> - Are there any existing data or methods that you can reuse?<br>- Do you need to pay to reuse existing data?<br>- Are there any restrictions on the reuse of third-party data?<br>- Can the data that you create - which may be derived from third-party data - be shared?<br>**Guidance:**<br>Check to see if there are any existing data that you can reuse, for examples by consulting relevant repositories. When | ESRC q1, ESRC q2<br>NERC Full q10.4 |

| | creating new data sources, explain why existing data sources cannot be reused. | |
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| | If purchasing or reusing existing data sources, explain how issues such as copyright and IPR have been addressed. | |
| | A list of repositories is provided by Databib (http://databib.org) or Re3data (http://www.re3data.org). | |
| RELATIONSHIP TO EXISTING DATA | **Questions to consider:**<br>- What is the relationship to existing data e.g. in public repositories?<br>- How does your data complement and integrate with existing data?<br>**Guidance:**<br>Consider the relationship between the data that you will capture and existing data available in public repositories or elsewhere. | BBSRC q3 |
| DATA DESCRIPTION | **Questions to consider:**<br>- What data will you create?<br>**Guidance:**<br>Give a brief description of the data that will be created, noting its content and coverage. | AHRC q1<br>BBSRC q1<br>EC initial q2<br>NERC outline q5 |
| DATA FORMAT | **Questions to consider:**<br>- What format will your data be in?<br>- Why have you chosen to use particular formats?<br>- Do the chosen formats and software enable sharing and long-term validity of data?<br>**Guidance:**<br>Outline and justify your choice of format e.g. SPSS, Open Document Format, tab-delimited format, MS Excel. 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 and interchangeable or open lossless data formats ensures the long-term usability of data.<br>See UKDS guidance on Recommended formats (http://ukdataservice.ac.uk/manage-data/format/recommended-formats.aspx). | AHRC q2a<br>BBSRC q2, BBSRC q8<br>CRUK standard q1<br>CRUK PRC q1.3<br>ESRC q3<br>EC mid/final-term q5<br>MRC q1.3<br>WT q1 |
| DATA VOLUMES | **Questions to consider:**<br>- Do you have sufficient storage?<br>- Do you need to include costs for additional managed storage?<br>- Will the scale of the data pose challenges when sharing or transferring data between sites?<br>**Guidance:**<br>Consider the implications of data volumes in terms of storage, backup and access. Estimate the volume of data in MB/GB/TB and how this will grow to make sure any additional storage and technical support required can be provided. | AHRC q2a<br>BBSRC q1<br>CRUK standard q1<br>CRUK PRC q1.3<br>ESRC q3<br>MRC q1.3<br>NERC outline q5 |
| DATA TYPE | **Questions to consider:**<br>- What types of data will you create?<br>- Which types of data will have long-term value?<br>**Guidance:** | BBSRC q1<br>CRUK standard q1<br>CRUK PRC q1.2<br>ESRC q3 |

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| | Outline the types of data that are expected to be produced from the project e.g. quantitative, qualitative, survey data, experimental measurements, models, images, audiovisual data, samples etc. Include the raw data arising directly from the research, the reduced data derived from it, and published data. | MRC q1.2<br>STFC q1 |
| DATA CAPTURE METHODS | **Questions to consider:**<br>- How will the data be created?<br>- What standards or methodologies will you use?<br>- How will you structure and name your folders and files?<br>- How will you ensure that different versions of a dataset are easily identifiable?<br>**Guidance:**<br>Outline how the data will be collected/generated and which community data standards (if any) will be used at this stage. Indicate how the data will be organised during the project, mentioning for example naming conventions, version control and folder structures. Consistent, well-ordered research data will be easier for the research team to find, understand and reuse. | AHRC q2c<br>CRUK standard q2<br>EC initial q3<br>MRC q2.1<br>NERC Full q4<br>WT q1 |
| DATA QUALITY | **Questions to consider:**<br>- How will you control data capture to ensure data quality?<br>- What quality assurance processes will you adopt?<br>**Guidance:**<br>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 or recording, data entry validation, peer review of data or representation with controlled vocabularies. | AHRC q2c<br>BBSRC q2<br>CRUK standard q2<br>ESRC q4<br>MRC q2.2<br>NERC Full q7 |
| DOCUMENTATION | **Questions to consider:**<br>- What metadata, documentation or other supporting material should accompany the data for it to be interpreted correctly?<br>- What information needs to be retained to enable the data to be read and interpreted in the future?<br>**Guidance:**<br>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. | AHRC q2c<br>CRUK standard q3<br>CRUK PRC q2.2<br>ESRC q6<br>EC mid/final-term q3<br>MRC q3.2<br>STFC q3 |
| METADATA | **Questions to consider:**<br>- How will you capture / create the metadata?<br>- Can any of this information be created automatically?<br>- What metadata standards will you use and why?<br>**Guidance:**<br>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. | AHRC q2a<br>BBSRC q2<br>CRUK standard q3<br>CRUK PRC q2.2<br>EC initial q3<br>EC mid/final-term q4<br>MRC q3.2 |

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| | 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). | NERC Full q6<br>STFC q3<br>WT q1 |
| DISCOVERY BY USERS | **Questions to consider:**<br>- How will potential users find out about your data?<br>- Will you provide metadata online to aid discovery and reuse?<br>**Guidance:**<br>Indicate how potential new users can find out about your data and identify whether they could be suitable for their research purposes. For example, you may provide basic discovery metadata online (i.e. the title, author, subjects, keywords and publisher). | CRUK PRC q4.2<br>EC mid/final-term q1<br>MRC q5.2<br>WT q4 |
| ETHICAL ISSUES | **Questions to consider:**<br>- Have you gained consent for data preservation and sharing?<br>- How will sensitive data be handled to ensure it is stored and transferred securely?<br>- How will you protect the identity of participants? e.g. via anonymisation or using managed access procedures<br>**Guidance:**<br>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.<br>See UKDS guidance on Consent for data sharing (http://ukdataservice.ac.uk/manage-data/legal-ethical/consent-data-sharing.aspx). | CRUK standard q8<br>ESRC q8<br>WT q5 |
| IPR OWNERSHIP AND LICENCING | **Questions to consider:**<br>- Who owns the data?<br>- How will the data be licensed for reuse?<br>- Will data sharing be postponed / restricted e.g. to seek patents?<br>**Guidance:**<br>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. Outline any restrictions needed on data sharing e.g. to protect proprietary or patentable data.<br>See the DCC guide: How to license research data (http://www.dcc.ac.uk/resources/how-guides/license-research-data). | BBSRC q6<br>CRUK standard q8<br>ESRC q9<br>EC mid/final-term q2<br>NERC Full q10.1, q10.2, q10.3<br>WT q5 |
| STORAGE AND BACKUP | **Questions to consider:**<br>- Where will the data be stored?<br>- How will the data be backed up? i.e. how often, to where, how many copies, is this automated...<br>- Who will be responsible for storage and backup?<br>- Do you have access to enough storage or will you need to include charges for additional services?<br>**Guidance:** | AHRC q2c<br>CRUK PRC q2.1<br>ESRC q5<br>MRC q3.1<br>NERC Full q5 |

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| | Describe how the data will be stored and backed-up to ensure the data and metadata are securely stored during the lifetime of the project. Storing data on laptops, computer hard drives or external storage devices alone is very risky. The use of robust, managed storage with automatic backup, for example that provided by university IT teams, is preferable.<br>See UKDA Guidance on Data storage and backup (http://data-archive.ac.uk/create-manage/storage.aspx) | |
| DATA SECURITY | **Questions to consider:**<br>- What are the risks to data security and how will these be managed?<br>- Will you follow any formal standards?<br>**Guidance:**<br>If your data is sensitive (e.g. detailed personal data, politically sensitive information or trade secrets) you should discuss any appropriate security measures that you will be taking. Note the main risks and how these will be managed. Identify any formal standards that you will comply with e.g. ISO 27001<br>See 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)<br>See UKDS guidance on Data security (http://ukdataservice.ac.uk/manage-data/store/security.aspx) | CRUK PRC q3.1<br>ESRC q5<br>MRC q4.1, MRC q4.2<br>NERC Full q5 |
| DATA SELECTION | **Questions to consider:**<br>- Which data are of long-term value and should be shared and/or preserved?<br>- How will you decide what to keep?<br>**Guidance:**<br>Indicate which data you intend to preserve beyond the period of funding. This should be based on what has long-term value and is economically viable to keep. Consider how long you wish to keep the data and what will happen to it e.g. deposit in a data repository to enable reuse.<br>See the DCC guide: How to appraise and select research data for curation (http://www.dcc.ac.uk/resources/how-guides/appraise-select-data). | AHRC q4a<br>CRUK PRC q2.3<br>MRC q3.3<br>STFC q2, STFC q5 |
| PRESERVATION PLAN | **Questions to consider:**<br>- What is the long-term preservation plan for the dataset? e.g. deposit in a data repository<br>- Will additional resources be needed to prepare data for deposit or meet charges from data repositories?<br>**Guidance:**<br>Researchers should consider how datasets that have long-term value will be preserved and curated beyond the lifetime of the grant. Also outline the plans for preparing and documenting data for sharing and archiving.<br>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. | AHRC q4a<br>CRUK standard q6<br>CRUK PRC q2.3<br>ESRC q6<br>EC initial q5<br>MRC q3.3<br>NERC Full q10.1, q10.2, q10.3<br>STFC q2<br>WT q6 |
| PERIOD OF PRESERVATION | **Questions to consider:**<br>- How long will the data be retained and preserved?<br>**Guidance:** | CRUK PRC q2.3<br>EC mid/final-term q4<br>MRC q3.3 |

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| | This may depend on the type of data. Most research funders expect data to be retained for a minimum of 10 years from the end of the project. For data that by their nature cannot be re-measured, efforts should be made to retain them indefinitely. | STFC q4 |
| DATA REPOSITORY | **Questions to consider:**<br>- Where (i.e. in which repository) will the data be deposited?<br>**Guidance:**<br>Most research funders recommend the use of established data repositories, community databases and related initiatives to aid data preservation, sharing and reuse.<br>An international list of data repositories is available via Databib (http://databib.org/) or Re3data (http://www.re3data.org/). | AHRC q4a<br>BBSRC q5<br>CRUK standard q4<br>CRUK PRC q4.1<br>EC initial q4<br>MRC q5.2<br>STFC q2<br>WT q3 |
| EXPECTED REUSE | Questions to consider:<br>- Who may be interested in using your data?<br>- What are the further intended or foreseeable research uses for the data?<br>Guidance:<br>You should think about the possibilities for reuse of your data in other contexts and by other users, and connect this as appropriate with your plans for dissemination and Pathways to Impact. Where there is potential for reuse, you should use standards and formats that facilitate this. Where possible outline the types of users you expect and estimate numbers. | BBSRC q4<br>STFC q5 |
| METHOD FOR DATA SHARING | **Questions to consider:**<br>- How will you make the data available to others?<br>- With whom will you share the data, and under what conditions?<br>**Guidance:**<br>Consider where, how, and to whom the data should be made available. Will you share data via a data repository, handle data requests directly or use another mechanism? The methods used to share data will be dependent on a number of factors such as the type, size, complexity and sensitivity of data. Mention earlier examples to show a track record of effective data sharing. | AHRC q1, AHRC q4b<br>BBSRC q5<br>CRUK standard q4<br>CRUK PRC q4.1<br>EC initial q4<br>MRC q5.3<br>STFC q7 |
| TIMEFRAME FOR DATA SHARING | **Questions to consider:**<br>- When will you make the data available?<br>- Will you need exclusive use of the data for a limited period?<br>- If you need an embargo, please explain why.<br>**Guidance:**<br>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 | BBSRC q7<br>CRUK standard q5<br>CRUK PRC q4.3, CRUK PRC q4.5<br>MRC q5.4<br>STFC q6<br>WT q2 |

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| | 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. | |
| RESTRICTIONS ON SHARING | **Questions to consider:**<br>- Are any restrictions on data sharing required? e.g. limits on who can use the data, when and for what purpose.<br>- What restrictions are needed and why?<br>- What action will you take to overcome or minimise restrictions?<br>**Guidance:**<br>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. | BBSRC q6<br>CRUK standard q8<br>CRUK PRC q4.4<br>ESRC q7<br>EC initial q4<br>MRC q5.5<br>NERC Full q10.1, 10.2, 10.3, 10.4<br>WT q5 |
| MANAGED ACCESS PROCEDURES | Questions to consider:<br>- Will access be tightly controlled or restricted? e.g. by using data enclaves / secure data services<br>- Will a data sharing agreement be required?<br>- How will the data be licensed for reuse?<br>**Guidance:**<br>Indicate whether external users will be bound by data sharing agreements, licenses or end-user agreements. If so, set out the terms and key responsibilities to be followed. Note how access will be controlled, for example by the use of specialist services. A data enclave provides a controlled secure environment in which eligible researchers can perform analyses using restricted data resources. Where a managed access process is required, the procedure should be clearly described and transparent. | CRUK PRC q4.6, CRUK PRC q4.7<br>ESRC q7<br>MRC q5.6<br>WT q4 |
| RESPONSIBILITIES | **Questions to consider:**<br>- Who is responsible for each data management activity?<br>- How are responsibilities split across partner sites in collaborative research projects?<br>**Guidance:**<br>Outline the roles and responsibilities for all activities e.g. data capture, metadata production, data quality, storage and backup, data archiving & data sharing. Individuals should be named where possible. For collaborative projects you should explain the co-ordination of data management responsibilities across partners.<br>See UKDS guidance on data management roles and responsibilities (http://ukdataservice.ac.uk/manage-data/plan/roles-and-responsibilities.aspx). | AHRC q3<br>CRUK PRC q5.1<br>ESRC q10<br>MRC q6<br>NERC Full q3 |
| RESOURCING | **Questions to consider:**<br>- What additional resources are needed to deliver your plan?<br>- Is additional specialist expertise (or training for existing staff) required?<br>- Do you have sufficient storage and equipment or do you need to cost in more?<br>- Will charges be applied by data repositories?<br>- Have you costed in time and effort to prepare the data for sharing / preservation? | AHRC q2b, AHRC q3, AHRC q4b<br>EC initial q5<br>NERC Full q8<br>STFC q8<br>WT q7 |

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| | **Guidance:**<br>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 that may be charged by IT services.<br>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.<br>See UKDS guidance on costing data management (http://ukdataservice.ac.uk/manage-data/plan/costing.aspx) | |

## Appendix 2: Funder questions for DMPs *(as of July 2016)*

*Please note that in most cases, funders do not number their DMP questions. Where they do this, numbering has been retained. In the other cases, the question numbers are applied by us for referencing in Appendix A.*

### AHRC

| No. | Question | Theme(s) |
|-----|----------|----------|
| 1 | Summary of Digital Outputs and Digital Technologies | Data description<br>Method for data sharing |
| 2a | Standards and Formats | Data format<br>Data volumes<br>Metadata |
| 2b | Hardware and Software | Resourcing |
| 2c | Data Acquisition, Processing, Analysis and Use | Data capture methods<br>Data quality<br>Documentation<br>Storage and backup |
| 3 | Technical Support and Relevant Experience | Responsibilities<br>Resourcing |
| 4a | Preserving Your Data | Preservation plan<br>Data selection<br>Data repository |
| 4b | Ensuring Continued Access and Use of Your Digital Outputs | Method for data sharing<br>Resourcing |

### BBSRC

| No. | Question | Theme(s) |
|-----|----------|----------|
| 1 | Data areas and data types – the volume, type and content of data that will be generated e.g. experimental measurements, records and images | Data description<br>Data type<br>Data volume |
| 2 | Standards and metadata – the standards and methodologies that will be adopted for data collection and management, and why these have been selected | Data format<br>Metadata<br>Data quality |
| 3 | Relationship to other data available in public repositories | Relationship to existing data |
| 4 | Secondary use – further intended and/or foreseeable research uses for the completed dataset(s) | Expected reuse |
| 5 | Methods for data sharing – planned mechanisms for making these data available e.g. through deposition in existing public databases or on request, including access mechanisms where appropriate | Method for data sharing<br>Data repository |
| 6 | Proprietary data – any restrictions on data sharing due to need to protect proprietary or patentable data | IPR ownership and licensing<br>Restrictions on sharing |
| 7 | Timeframes – timescales for public release of data | Timeframe for data sharing |
| 8 | Format of the final dataset | Data format |

**CRUK**

**Standard template**

| No. | Question / theme | Theme(s) |
|-----|------------------|----------|
| 1 | The volume, type, content and format of the final dataset | Data format<br>Data volume<br>Data type |
| 2 | The standards that will be utilised for data collection and management | Data capture methods<br>Data quality |
| 3 | The metadata, documentation or other supporting material that should accompany the data for it to be interpreted correctly | Documentation<br>Metadata |
| 4 | The method used to share data | Method for data sharing<br>Data repository |
| 5 | The timescale for public release of data | Timeframe for data sharing |
| 6 | The long-term preservation plan for the dataset | Preservation plan |
| 7 | Any reasons why there may be restrictions on data sharing, for example commercialisation, proprietary data and confidentiality | Restrictions on sharing<br>IPR ownership and licensing<br>Ethical issues |

**Population Research Committee template**

| No. | Question | Theme(s) |
|-----|----------|----------|
| 0 | State the title of the project/programme | n/a |
| 1.1 | Type of study | n/a |
| 1.2 | Types of data | Data type |
| 1.3 | Format and scale of the data | Data format<br>Data volume |
| 2.1 | Managing, storing and curating data | Storage and backup |
| 2.2 | Metadata standards and documentation | Metadata<br>Documentation |
| 2.3 | Data preservation strategy and standards | Preservation plan<br>Period of preservation<br>Data selection |
| 3.1 | Main risks to data security | Data security |
| 4.1 | Mechanism for sharing | Method for data sharing<br>Data repository |
| 4.2 | Discovery by potential users of the research data | Discovery by users |
| 4.3 | The study team's exclusive use of the data | Timeframe for data sharing |
| 4.4 | Restrictions or delays to sharing, with planned actions to limit these | Restrictions on sharing |
| 4.5 | Milestones for sharing | Timeframe for data sharing |
| 4.6 | Governance of access | Managed access procedures |
| 4.7 | Regulation of responsibilities of users | Managed access procedures |
| 5.1 | Outline responsibilities for data management | Responsibilities |
| 6.1 | Relevant policies | Related policies |
| 7.1 | Author and contact details | n/a |

**ESRC**

| No. | Question | Theme(s) |
|---|---|---|
| 1 | Provide an explanation of the existing data sources that will be used by the research project with references | Existing data |
| 2 | Provide an analysis of the gaps identified between the currently available and required data for the research | Existing data |
| 3 | Provide information on the data that will be produced or accessed by the research project | Data volume<br>Data type<br>Data format |
| 4 | Describe the procedures for quality assurance that will be carried out on the data collected, at the time of data collection, data entry, digitisation and data checking | Data quality |
| 5 | Describe the data back-up procedures that you will adopt to ensure the data and metadata are securely stored during the lifetime of the project | Storage and backup<br>Data security |
| 6 | Outline your plans for preparing, organising and documenting data. | Preservation plan<br>Documentation |
| 7 | If you expect obstacles to sharing your data, explain which and the possible measures you can apply to overcome these. | Restrictions on sharing<br>Managed access procedures |
| 8 | Make explicit mention of the planned procedures to handle consent for data sharing for data obtained from human participants and/or how to anonymise data to make sure that data can be made available and accessible for future scientific research. | Ethical issues |
| 9 | Please state who will own the copyright and IPR of any new data that you will generate. | IPR ownership and licensing |
| 10 | Outline responsibilities for data management within research teams at all partner institutions | Responsibilities |

## European Commission (Horizon 2020)

### Initial DMP

| No. | Question | Theme(s) |
|---|---|---|
| 1 | Data set reference and name | n/a |
| 2 | Data set description | Data description |
| 3 | Standards and metadata | Data capture methods<br>Metadata |
| 4 | Data sharing | Method for data sharing<br>Restrictions on sharing<br>Data repository |
| 5 | Archiving and preservation (including storage and backup) | Preservation plan<br>Resourcing |

### Mid-term and Final-review DMP

| No. | Question | Theme(s) |
|---|---|---|
| 1 | Are the data and associated software produced and/or used in the project discoverable (and readily located), identifiable by means of a standard identification mechanism (e.g. Digital Object Identifier)? | Discovery by users |
| 2 | Are the data and associated software produced and/or used in the project accessible and in what modalities, scope, licenses? | IPR ownership and licensing |

| No. | Question | |
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| 3 | Are the data and associated software produced and/or used in the project assessable for and intelligible to third parties in contexts such as scientific scrutiny and peer review? | Documentation |
| 4 | Are the data and associated software produced and/or used in the project useable by third parties even long time after the collection of the data? | Preservation plan<br>Metadata |
| 5 | Are the data and associated software produced and/or used in the project interoperable allowing data exchange between researchers, institutions, organisations, countries, etc? | Data format |

## MRC

| No. | Question | Theme(s) |
|-----|----------|----------|
| 0 | Proposal name | n/a |
| 1.1 | Type of study | Project description |
| 1.2 | Types of data | Data type |
| 1.3 | Format and scale of the data | Data format<br>Data volume |
| 2.1 | Methodologies for data collection / generation | Data capture methods |
| 2.2 | Data quality and standards | Data quality |
| 3.1 | Managing, storing and curating data | Storage and backup |
| 3.2 | Metadata standards and data documentation | Metadata<br>Documentation |
| 3.3 | Data preservation strategy and standards | Preservation plan<br>Period of preservation<br>Data selection |
| 4.1 | Formal information/data security standards | Data security |
| 4.2 | Main risks to data security | Data security |
| 5.1 | Suitability for sharing | n/a |
| 5.2 | Discovery by potential users of the research data | Discovery by users<br>Data repository |
| 5.3 | Governance of access | Method for data sharing |
| 5.4 | The study team's exclusive use of the data | Timeframe for data sharing |
| 5.5 | Restrictions or delays to sharing, with planned actions to limit these | Restrictions on sharing |
| 5.6 | Regulation of responsibilities of users | Managed access procedures |
| 6 | Responsibilities | Responsibilities |
| 7 | Relevant policies on data sharing and data security | Related policies |
| 8 | Author of this Data Management Plan (Name) and contact details | n/a |

## NERC

## Outline plan

| No. | Question | Theme(s) |
|-----|----------|----------|
| 1 | Project Title | n/a |
| 2 | Principal Investigator(s)/Grant Holder | n/a |
| 3 | Will the grant produce data Y/N? | n/a |
| 4 | Nominated Data Centre(s) | n/a |
| 5 | Briefly list likely datasets that the project will produce. If the total is likely to be larger than 1TB please indicate. | Data description<br>Data volume |

## Full plan

| No. | Question | Theme(s) |
|---|---|---|
| 1 | Project Information | n/a |
| 2 | Organisation | n/a |
| 3 | Roles and Responsibilities | Responsibilities |
| 4 | Data Generation Activities | Data capture methods |
| 5 | In-Project Data Management Approach | Storage and backup Security |
| 6 | Metadata and Documentation | Metadata |
| 7 | Data Quality | Data quality |
| 8 | Exceptions or Additional Services | Resourcing |
| 9 | Data Management Plan Information | n/a |
| 10 | New datasets | n/a |
| 10.1 | Digital information | IPR ownership and licensing Restrictions on sharing Preservation plan |
| 10.2 | Hardcopy records | IPR ownership and licensing Restrictions on sharing Preservation plan |
| 10.3 | Physcial collections & samples | IPR ownership and licensing Restrictions on sharing Preservation plan |
| 11 | Third party / existing datasets | Existing data Restrictions on sharing |


## STFC

| No. | Question | Theme(s) |
|---|---|---|
| 1 | Specify the types of data the research will generate | Data type |
| 2 | Specify which data will be preserved and how | Data selection Preservation plan Data repository |
| 3 | Specify the software and metadata implications | Metdata Documentation |
| 4 | Specify for how long the data will be preserved | Period of preservation |
| 5 | Specify and justify which data will have value to others and should be shared | Data selection Expected reuse |
| 6 | Specify and justify the length of any proprietary period | Timeframe for data sharing |
| 7 | Specify how data will be shared | Method for data sharing |
| 8 | Specify and justify any resources required to preserve and share the data | Resourcing |


## Wellcome Trust

| No. | Question | Theme(s) |
|---|---|---|
| 1 | What data outputs will your research generate? | Data format Data type Metadata |
| 2 | When do you intend to share your data? | Timeframe for data sharing |
| 3 | Where will your data be made available? | Data repository |

| 4 | How will your data be accessible to others? | Managed access procedures<br>Discovery by users |
|---|---|---|
| 5 | Are any limits to data sharing required? | Restrictions on sharing<br>Ethical issues<br>IPR ownership and licensing |
| 6 | How will key datasets be preserved? | Preservation plan |
| 7 | What resources will you require to deliver your plan? | Resourcing |