#### iridium project output

iridium **post-award research data management plan template and guidance**

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| Partner Institutions | Not applicable |
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#### Research data management plan completion: support for researchers

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|  | Background |
|  | Research data management (RDM) is the practice of looking after research data and covers all research disciplines. It includes all aspects of maintaining, sharing, backing up and keeping data secure. It allows the researcher to keep on top of their data throughout its lifecycle and ensures it can retain an impact beyond the scope of its own project.Research data management is important to keep data in good order and the research process efficient. Having a research management plan in place will provide a means to keep on top of your data from the start of your research and will save time in the long run. Many funders will require a research data management plan from the grant holder and this can be an integral part of an application. More widely it is important to benefit the research community at large allowing your data to have a greater impact and ensure it reaches an appropriate audience.Data is anything that has been produced or created during research. Primary data is data created through the research. Data sets can also contain data that has been created by other researchers. Data can be created through observation or experimental methods. It can also be generated through simulation models. ‘Data’ does not mean only numerical results (quantitative data), it also encompasses material used in all disciplines and can include photographs, sculptures, letters, speeches or music (qualitative data).For an overview of RDM and data management planning the Digital Curation Centre (DCC) provides detailed best practice information (<http://www.dcc.ac.uk/resources/data-management-plans>). Research Data MANTRA is an online training package that provides an introductory guide (<http://datalib.edina.ac.uk/mantra/>) to the topic.This document has been developed for two reasons. 1. To help those looking to use the iridium project draft template, for projects that do not have a mandated Funder specific template, on the DCC DMPonline system (<https://dmponline.dcc.ac.uk/>), on which this guidance is based.
2. The template has a number of specific questions on numerous areas of RDM. You can use this guide to refine your own plans for specific funders with their own templates or just to enhance your own daily practices.

There are a number of external links provided in the document for most questions. These links are given for information purposes only and direction to additional reading. If you have any queries, including practical implementation in the University, please contact rdm@ncl.ac.uk.For more information about RDM authored by the iridium project: <http://research.ncl.ac.uk/rdm> |
| **1** | **Introduction and context** |
| **1.1** | **Introduction and Context** |
|  | DCC 1.2: Short description of the project's fundamental aims and purpose |
|  | Digital Curation Centre DMP Online Guidance:Information summarised from the main body of your research proposal will help potential re-users understand the purposes your data has been collected or created for, and they are unlikely to have access to your proposal. Briefly summarise what you set out to discover and how that is likely to affect the kind of data you collect or create and how. |
|  | DCC 10.2: Glossary of terms |
|  |  |
| **1.1.1** | **Describe how you have considered the draft Newcastle University RDM institutional policy and any Faculty/research group guidelines, together with any other policy-related dependencies:** |
|  | Newcastle University information:* Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>)
* Newcastle University research policies: (<http://www.ncl.ac.uk/res/resources/Polices%20Forms%20and%20Guidance/Policies.htm>)

Useful External Links:Funder’s RDM policies: <http://www.dcc.ac.uk/resources/policy-and-legal/funders-data-policies> (note the funders generally have a RDM template on the DMPonline system) |
| **1.1.2** | **Document the RDM advice you have sought on planning your proposed project, including any consultation with projects using similar methods** |
|  | Newcastle University information:* Did you make enquiries via the specific pilot email address (rdm@newcastle.ac.uk) that supports research data management at Newcastle University?

Support is specifically available from the following sources including:* Information Systems and Services (ISS):
	+ IT support for research: <http://www.ncl.ac.uk/itservice/research-it-support/>
	+ Research information management: <http://www.ncl.ac.uk/itservice/research-info/>
* Research and Enterprise Services (RES):
	+ Help and resources for research funding: <http://www.ncl.ac.uk/res/research/guidance/index.htm>
	+ RES support services: <http://www.ncl.ac.uk/res/about/office/>
* Library?
* Within your Faculty?
	+ Research Funding Development Managers: <http://www.ncl.ac.uk/fundingtoolkit/about/staff/research.htm>
* Elsewhere in the University?

Other organisations?Useful External Links:Practical guide to get started from DCC: <http://www.dcc.ac.uk/resources/how-guides/develop-data-plan#Steps to get started>Digital Curation Centre website: <http://www.dcc.ac.uk/resources/how-guides/develop-data-plan#Advice> UK Data Archive website: <http://www.data-archive.ac.uk/create-manage/planning-for-sharing/data-management-checklist> MANTRA Research Data Management Training (part of the University of Edinburgh): <http://datalib.edina.ac.uk/mantra/datamanagementplans.html> Research data lifecycle (UK Data Archive): <http://www.data-archive.ac.uk/create-manage/life-cycle> Research data lifecycle (Digital Curation Centre): <http://www.dcc.ac.uk/resources/curation-lifecycle-model> Rural Economy and Land use Programme: <http://relu.data-archive.ac.uk/data-sharing/planning/guidance> (an example of good practice)Australian National Data Service: <http://ands.org.au/guides/data-management-planning-awareness.html> MIT Libraries- Data planning checklist: <http://libraries.mit.edu/guides/subjects/data-management/checklist.html>Managing Geospatial Electronic Records: <http://www.ciesin.columbia.edu/ger/GuideToManagingGERv1Final.pdf> (opens as PDF) |
| **2** | **Data Types, Formats, Standards and Capture Methods** |
| **2.1** | **Data Types, Formats, Standards and Capture Methods** |
|  | DCC 2.1: Give a short overview description of the data being generated or reused in this research |
|  | Digital Curation Centre DMP Online Guidance:When describing the type of content to be created, you may wish to refer to the RIN data types as a way of classifying what you will create: Scientific experiments; Models or simulations; Observations; Raw data; Derived data; Canonical or reference data. (See "To Share or not to Share: Publication and Quality Assurance of Research Data Outputs", Research Information Network, 2008) (<http://www.rin.ac.uk/our-work/data-management-and-curation/share-or-notshare-research-data-outputs>) You should also consider the implications of data volumes: do you have sufficient storage? Will the scale of the data pose challenges when sharing or transferring data between sites?Points to consider:* Is your data Qualitative and/or Quantitative?
* Is your research primary or secondary?
* How will your data be analysed? e.g. using online systems, local installations, manual processes involving paper records. Please include the names of specific software you will be using.
* Examples may include:
* Electronic data
* Lab books
* Images/photographs – digital
* Images/photographs – non digital
* Textual descriptions

Useful External Links:File formats & software: <http://data-archive.ac.uk/create-manage/format/formats> Suggested file formats for long-term preservation and access: <http://www.data-archive.ac.uk/create-manage/format/formats-table><http://www.nationalarchives.gov.uk/documents/selecting-file-formats.pdf> (opens as a pdf)<http://libraries.mit.edu/guides/subjects/data-management/formats.html> (note: American)File formats and standards: <http://datalib.edina.ac.uk/mantra/fileformatsandtransformations.html> |
|  | DCC 2.3.4: What criteria and/or procedures will you use for Quality Assurance/Management? |
|  | Digital Curation Centre DMP Online Guidance:Quality management mechanisms may include: documentation, calibration, validation, monitoring, transcription metadata, peer-review.Useful External Links:Quality Assurance: <http://www.data-archive.ac.uk/create-manage/format/quality> UK Data Archive’s own quality control procedures: <http://www.data-archive.ac.uk/curate/archive-quality> (these could be used as an example for your own research if you are not using the UK Data Archive)Organising data: <http://datalib.edina.ac.uk/mantra/organisingdata.html>  |
|  | DCC 2.5.1: Are the datasets which you will be capturing/creating self-explanatory, or understandable in isolation? |
|  | Digital Curation Centre DMP Online Guidance:You may wish to consider this from the perspective of a typical reader of a journal for your discipline.Useful External Links:Information about different levels of data documentation can be found at:<http://data-archive.ac.uk/create-manage/document>Importance of data documentation: <http://datalib.edina.ac.uk/mantra/documentationandmetadata.html>DCC guide to citing datasets (helps to show how data should be presented): <http://www.dcc.ac.uk/news/new-dcc-guide-citing-datasets> File formats & software: <http://data-archive.ac.uk/create-manage/format/formats> |
|  | DCC 2.5.2: If you answered No to DCC 2.5.1, what contextual details are needed to make the data you capture or collect meaningful? |
|  | Digital Curation Centre DMP Online Guidance:Think about what kind of documentation is needed for others to understand your data. This may include: a description of the data capture methods, explanation of data analysis, details of who has worked on the project and performed each task, etc.Guidance:- JISC Digital Media Introduction to Metadata (http://www.jiscdigitalmedia.ac.uk/crossmedia/advice/an-introduction-tometadata/)- UKDA Guidance on Data Documentation and Metadata (http://www.dataarchive.ac.uk/sharing/metadata.asp)Useful External Links:Information about different levels of data documentation can be found at:<http://data-archive.ac.uk/create-manage/document>Importance of data documentation: <http://datalib.edina.ac.uk/mantra/documentationandmetadata.html>DCC guide to citing datasets (helps to show how data should be presented): <http://www.dcc.ac.uk/news/new-dcc-guide-citing-datasets> File formats & software: <http://data-archive.ac.uk/create-manage/format/formats> |
|  | DCC 2.5.3: How will you create or capture these metadata? |
|  | Digital Curation Centre DMP Online Guidance:You may wish to address the balance between automatic and manually created metadata. Creating documentation takes time so consider whether anything you’re already creating can be used e.g. publications, websites, progress reports, etc. Also note where information about the data will be recorded e.g. in a database with links to each item, in a ‘readme’ text file, in file headers / under properties in Word or PDF. Guidance:- DCC Briefing Paper on Annotation (http://www.dcc.ac.uk/resources/briefingpapers/introduction-curation/annotation)Useful External Links:Metadata guidance: <http://www.dcc.ac.uk/resources/curation-reference-manual/completed-chapters/metadata> Basic advice on documentation and how and when to use metadata: <http://datalib.edina.ac.uk/mantra/documentationandmetadata.html> Using metadata standards: <http://www.dcc.ac.uk/resources/briefing-papers/standards-watch-papers/using-metadata-standards> “What are Metadata Standards”: <http://www.dcc.ac.uk/resources/briefing-papers/standards-watch-papers/what-are-metadata-standards> Guidelines on documenting data with NVIVO9: [http://data-archive.ac.uk/media/262066/ukda-datamanagement-nvivo.pdf](http://data-archive.ac.uk/create-manage/document/overview) (opens as pdf) |
|  | DCC 2.5.4: What form will the metadata take? |
|  | Digital Curation Centre DMP Online Guidance:Where appropriate, give details of the standards used. Using standards such as Dublin Core and TEI <http://dublincore.org/tools/> can make your data interoperable, so consider what others in your field have used or follow data centre recommendations. Using controlled vocabularies for description will also help improve consistency.Guidance:- DCC Briefing Paper on Metadata Standards (http://www.dcc.ac.uk/resources/briefing-papers/standards-watchpapers/what-are-metadata-standards)Useful External Links:Metadata guidance: <http://www.dcc.ac.uk/resources/curation-reference-manual/completed-chapters/metadata> “What are Metadata Standards”: <http://www.dcc.ac.uk/resources/briefing-papers/standards-watch-papers/what-are-metadata-standards>Metadata and documentation guide: <http://datalib.edina.ac.uk/mantra/documentationandmetadata.html>Introduction to metadata: <http://data-archive.ac.uk/create-manage/document/overview>  |
| **2.1.1** | **Which file formats will you use, and why?** |
|  | Useful External Links:Suggested file formats for long-term preservation and access: <http://data-archive.ac.uk/create-manage/format/formats><http://data-archive.ac.uk/create-manage/format/formats-table><http://www.dcc.ac.uk/resources/curation-reference-manual/completed-chapters/file-formats> <http://datalib.edina.ac.uk/mantra/fileformatsandtransformations.html><http://assets.okfn.org/tmp/opendatamanual/appendix/file-formats.html#html><http://www.openformats.org/main> |
| **3** | **Ethics and Intellectual Property** |
| **3.a** | **Ethics** |
| **3.a.1** | **Have you completed a Newcastle University ethics application?** |
|  |  [YES] [NO] [NOT APPLICABLE]**REFERENCE NUMBER**:The University requires all projects to be ethically approved (<http://www.ncl.ac.uk/res/research/ethics_governance/ethics/>).Are there any ethical issues or sensitivities around your data that will impact on your management of the research data generated by the project?Useful External Links:Ethics: <http://data-archive.ac.uk/create-manage/consent-ethics/legal>  |
| **3.b** | **Intellectual Property** |
| **3.b.1** | **Intellectual Property** |
|  | DCC 3.2.1: Will the dataset(s) be covered by copyright or the Database Right? If so give details in DCC 3.2.2, below. |
|  | Digital Curation Centre DMP Online Guidance:Guidance:- DCC Legal Watch Paper on the Database Right (http://www.dcc.ac.uk/resources/briefing-papers/legal-watch-papers/iprdatabases)Useful External Links:Copyright Right: <http://www.copyrightservice.co.uk/copyright/p01_uk_copyright_law> Database Right: <http://www.ipo.gov.uk/types/copy/c-otherprotect/c-databaseright.htm>UK data archive about copyright right: <http://data-archive.ac.uk/create-manage/copyright/copyright-ownership>“Copyright, Use and Liability”: <http://www.dcc.ac.uk/about-us/about-site/website-terms-use/copyright-use-liability> Copyright section with background and examples: <http://data-archive.ac.uk/create-manage/copyright>The Copyright and Intellectual Property law overview: <http://www.jisclegal.ac.uk/LegalAreas/CopyrightIPR.aspx>IP advice and how it can affect research data: <http://datalib.edina.ac.uk/mantra/dataprotection.html> European Union IPR helpdesk: <http://www.iprhelpdesk.eu/home>   |
|  | DCC 3.2.2: If you answered Yes to DCC 3.2.1, Who owns the copyright and other Intellectual Property? |
|  | Digital Curation Centre DMP Online Guidance:For multi-partner projects, this may be worth covering in a consortium agreement. Ideally, this should address the risk of movement of staff between institutions mid-project.Newcastle University information:* Section 4 of Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states that unless explicitly agreed the University owns the intellectual property rights, including copyright.
* Commercial and Intellectual Property policies: <http://www.ncl.ac.uk/res/resources/Polices%20Forms%20and%20Guidance/Policies.htm>
* Consult the standard Newcastle University contract of employment.

Other Information:The funder who has approved your project will have specific policies covering copyright and other Intellectual Property. For example, section GC 21 Exploitation and Impact of the Research Council UK Terms and Conditions of Research Council fEC Grants (<http://www.rcuk.ac.uk/research/Pages/grantstcs.aspx>), states, noting potential exceptions, that ‘Unless stated otherwise, the ownership of all intellectual assets, including intellectual property, and responsibility for their application, rests with the organisation that generates them.’Useful External Links:“Data Protection, Rights and Access” has slides on intellectual property (from page 15): <http://datalib.edina.ac.uk/mantra/dataprotection.html>  |
|  | DCC 3.2.3: If you answered Yes to DCC 3.2.1, How will the dataset be licensed? |
|  | Digital Curation Centre DMP Online Guidance:Any restrictions on use should be justified, and a timeframe for data release outlined to assure the funder of wider public benefit where possible. For example will there be: delays in releasing data while you seek a patent? Planned embargo periods / right of first use to secure publications? Prevention of data sharing due to terms of commercial partnership agreements?Guidance:- DCC Legal Watch Paper on Creative Commons (http://www.dcc.ac.uk/resources/briefing-papers/legal-watch-papers/creativecommons-licensing)- DCC Legal Watch Paper on Science Commons (http://www.dcc.ac.uk/resources/briefing-papers/legal-watch-papers/sciencecommons)Useful External Links:This guide may help you decide how to license your dataset: <http://www.dcc.ac.uk/resources/how-guides/license-research-data> Tutorial recommended by the DCC on Licensing on IPR: <http://www.youtube.com/watch?v=5BWqgVpcHCs> (although this is aimed at open educational resources projects it may be useful for a more general audience)How to license research data: <http://www.dcc.ac.uk/resources/how-guides/license-research-data> Overview of various open data licenses: <http://datalib.edina.ac.uk/mantra/preservation.html> If you are considering open licensing of your data, perhaps as a condition of your grant: you may wish to review Licensing Open Data A Practical Guide: <http://www.discovery.ac.uk/files/pdf/Licensing_Open_Data_A_Practical_Guide.pdf> (opens as a pdf) |
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| **4** | **Access, Data Sharing and Re-Use** |
| **4.1** | **Access, Data Sharing and Re-use** |
|  | DCC 4.1.1: Are you under obligation or do you have plans to share all or part of the data you create/capture? |
|  | Digital Curation Centre DMP Online Guidance:Any restrictions on use should be justified, and a timeframe for data release outlined to assure the funder of wider public benefit where possible. For example will there be: delays in releasing data while you seek a patent?Planned embargo periods / right of first use to secure publications?Prevention of data sharing due to terms of commercial partnership agreements?Guidance:- DCC Legal Watch Paper on Creative Commons (http://www.dcc.ac.uk/resources/briefing-papers/legal-watch-papers/creativecommons-licensing)- DCC Legal Watch Paper on Science Commons (http://www.dcc.ac.uk/resources/briefing-papers/legal-watch-papers/sciencecommons)Newcastle University information:* Does your project involve third parties? If yes, section 7 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states a clear agreement regarding research data management and sharing should be put in place before any project start date.
* You may wish to consult with:
	+ Legal Services: <http://www.ncl.ac.uk/res/about/office/intellectual/index.htm>
	+ Grants & Contracts team (HASS/SAgE): <http://www.ncl.ac.uk/res/about/office/research/grants.htm>
	+ Grants & Contracts team (Joint Research Office/Medical Sciences): <http://www.ncl.ac.uk/res/about/office/research/joint.htm>

Useful External Links:Data protection, right & access: <http://datalib.edina.ac.uk/mantra/dataprotection.html> and <http://datalib.edina.ac.uk/mantra/preservation.html>Access control of data: <http://data-archive.ac.uk/create-manage/consent-ethics/access-control>Data sharing guide: <http://data-archive.ac.uk/create-manage/planning-for-sharing>Data sharing best practise: <http://data-archive.ac.uk/media/376934/murg_best_practice_vvde28sep2012.pdf> (opens as pdf)Copyright when sharing data: <http://data-archive.ac.uk/create-manage/copyright/share>Data management and sharing plan: <http://www.dcc.ac.uk/resources/how-guides/develop-data-plan>Data Sharing, Preservation and Licensing: <http://datalib.edina.ac.uk/mantra/preservation.html>How to share your data: <http://data-archive.ac.uk/create-manage/planning-for-sharing/how-to-share-data>Creative Commons guide to making data open: <http://opendatacommons.org/guide/> Open Access Infrastructure for Research in Europe: <http://www.openaire.eu/> |
|  | DCC 4.1.3: If you answered Yes to DCC 4.1.1, How will you make the data available? |
|  | Digital Curation Centre DMP Online Guidance:Here you will want to explain how the data will be shared e.g. will they be deposited in a data centre, will you forward copies on request to interested parties, etc. Also consider how potential users will find out about your data, e.g. will you publish details of your research, present at conferences, blog about your findings, promote your research outputs on a website? etc.Useful External Links:Data protection, right & access: <http://datalib.edina.ac.uk/mantra/dataprotection.html> and <http://datalib.edina.ac.uk/mantra/preservation.html>Access control of data: <http://data-archive.ac.uk/create-manage/consent-ethics/access-control>Data sharing guide: <http://data-archive.ac.uk/create-manage/planning-for-sharing>Data sharing best practise: <http://data-archive.ac.uk/media/376934/murg_best_practice_vvde28sep2012.pdf> (opens as pdf)Copyright when sharing data: <http://data-archive.ac.uk/create-manage/copyright/share>Data management and sharing plan: <http://www.dcc.ac.uk/resources/how-guides/develop-data-plan>Data Sharing, Preservation and Licensing: <http://datalib.edina.ac.uk/mantra/preservation.html>How to share your data: <http://data-archive.ac.uk/create-manage/planning-for-sharing/how-to-share-data>Creative Commons guide to licensing data: <http://opendatacommons.org/guide/> Open Access Infrastructure for Research in Europe: <http://www.openaire.eu/> |
|  | DCC 4.1.4: If you answered Yes to DCC 4.1.1, When will you make the data available? |
|  |  |
|  | DCC 4.1.5: If you answered Yes to DCC 4.1.1, What is the process for gaining access to the data? |
|  | Digital Curation Centre DMP Online Guidance:Ways of accessing data include: downloading from a data centre; requesting direct from the researcher; downloading from a Web page.Useful External Links:Access control of data: <http://data-archive.ac.uk/create-manage/consent-ethics/access-control> Data protection, right & access: <http://datalib.edina.ac.uk/mantra/dataprotection.html> and <http://datalib.edina.ac.uk/mantra/preservation.html>Access, Data, Sharing and Reuse PDF: <http://www.dcc.ac.uk/training/train-trainer/disciplinary-rdm-training/access-use-and-reuse/access-use-and-reuse> |
|  | DCC 4.1.6: If you answered Yes to DCC 4.1.1, Will access be chargeable? |
|  |  |
|  | DCC 4.2.3: Are there any embargo periods for political/commercial/patent reasons? |
|  | Newcastle University information:* Commercial and Intellectual Property policies: <http://www.ncl.ac.uk/res/resources/Polices%20Forms%20and%20Guidance/Policies.htm>
* Commercialising Intellectual Property: <http://www.ncl.ac.uk/res/enterprise/ip/commercialise_ip.htm>
* Commercialising your research tools: <http://www.ncl.ac.uk/res/enterprise/ip/commercialising_researchtools.html>
* Enterprise teams: <http://www.ncl.ac.uk/res/about/office/enterprise/>
 |
|  | DCC 4.2.4: If you answered Yes to DCC 4.2.3, Please give details. |
|  |  |
|  | DCC 4.3.1: Which groups or organisations are likely to be interested in the data that you will create/capture? |
|  | Digital Curation Centre DMP Online Guidance:There is a push for publicly funded data to be of wide benefit, so it may help to show that you envisage your data being of use beyond your group, or even beyond your discipline. |
|  | DCC 4.3.2: How do you anticipate your new data being reused? |
|  | Digital Curation Centre DMP Online Guidance:Explain how the data will be developed with future users in mind, i.e. are your choices of formats, technologies and metadata appropriate to these audiences? |
|  | DCC 5.3.2: How will you implement permissions, restrictions and/or embargoes? |
|  | Digital Curation Centre DMP Online Guidance:You may wish to give details of any policies in place governing making copies of data.Useful External Links:Data Archive: Access control and licensing: <http://data-archive.ac.uk/create-manage/consent-ethics/access-control>Checklist for governing access on reuse of data: <http://www.dcc.ac.uk/resources/curation-lifecycle-model> |
| **4.1.1** | **Are there issues of consent, confidentiality (including commercial), anonymisation and other ethical considerations?** |
|  | Useful External Links:Consent: <http://www.data-archive.ac.uk/create-manage/consent-ethics/consent> Confidentiality (including commercial): <http://www.data-archive.ac.uk/create-manage/consent-ethics/legal?index=4> Data protection, right & access: <http://datalib.edina.ac.uk/mantra/dataprotection.html> (slides 5-6)Anonymisation:<http://www.data-archive.ac.uk/create-manage/consent-ethics/anonymisation>Data protection, right & access: <http://datalib.edina.ac.uk/mantra/dataprotection.html> (slides 11-12)Any other ethical consideration:Useful External Links:Confidentiality, consent, and anonymisation: <http://datalib.edina.ac.uk/mantra/dataprotection.html> Data Licensing: <http://www.dcc.ac.uk/resources/how-guides/license-research-data> |
| **4.1.2** | **What are the main risks to data security/confidentiality?** |
|  | Newcastle University Information:* Sections 3.7 and 9 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) provide details of the data security policy and where support is available.
* Please contact rdm@newcastle.ac.uk for further information and support.
* Newcastle University’s Information Security webpages: <http://www.ncl.ac.uk/itservice/security/>
* Newcastle University research policies: (<http://www.ncl.ac.uk/res/resources/Polices%20Forms%20and%20Guidance/Policies.htm>)
* Newcastle University guide to keeping data secure: <http://www.ncl.ac.uk/itservice/security/Keeping_Information_Secure_Jan_2012.pdf> (opens as a pdf)
* Newcastle University encryption: <http://www.ncl.ac.uk/itservice/security/encryption/>

Useful External Links:Data Security: <http://www.data-archive.ac.uk/create-manage/storage/security> Working off campus: <http://www.ncl.ac.uk/itservice/software/ras/> and <http://www.ncl.ac.uk/itservice/software/rds/>Security risks in relation to storage: <http://datalib.edina.ac.uk/mantra/storageandsecurity.html> Confidentiality, consent, and anonymisation: <http://datalib.edina.ac.uk/mantra/dataprotection.html> Data encryption: <http://data-archive.ac.uk/create-manage/storage/encrypt> |
| **4.1.3** | **What will be the responsibilities of data sets users (for example as detailed in a ‘Statement of Agreement’)?** |
|  | Newcastle University information:* You may wish to consult with:
	+ Legal Services: <http://www.ncl.ac.uk/res/about/office/intellectual/index.htm>
	+ Grants & Contracts team (HASS/SAgE): <http://www.ncl.ac.uk/res/about/office/research/grants.htm>
	+ Grants & Contracts team (Joint Research Office/Medical Sciences): <http://www.ncl.ac.uk/res/about/office/research/joint.htm>
 |
| **5** | **Short-Term Storage and Data Management** |
| **5.1** | **Short-Term Storage and Data Management** |
|  | DCC 5.1.1: Where (physically) will you store the data during the project's lifetime? |
|  | Digital Curation Centre DMP Online Guidance:Storing data on laptops alone is very risky: backed-up network drives are far preferable.Guidance:- UKDA Guidance on Data Storage (http://www.dataarchive.ac.uk/sharing/datastorage.asp)Newcastle University Information:* Information Systems and Services (ISS):
	+ Condor: <http://www.ncl.ac.uk/itservice/condor/aboutcondor/>
	+ Virtual Research Environment: <http://www.ncl.ac.uk/itservice/vre/>
* Any specific Faculty/local storage:
* Non-digital storage:

Useful External Links:Datacite repository suggestions: <http://www.datacite.org/repolist> UK Data Archive repository suggestions: <http://www.data-archive.ac.uk/curate/trusted-digital-repositories> Secure storage advice: <http://datalib.edina.ac.uk/mantra/storageandsecurity.html> Issues affecting data storage: <http://data-archive.ac.uk/create-manage/storage> Storing Data: <http://data-archive.ac.uk/create-manage/storage/store-data>Introduction to repositories: <http://www.dcc.ac.uk/resources/briefing-papers/introduction-curation/digital-repositories>DCC digital repository: <http://www.dcc.ac.uk/resources/briefing-papers/introduction-curation/digital-repositories#2> |
|  | DCC 5.1.2: What media will you use for primary storage during the project's lifetime? |
|  | Newcastle University Information:* Information Systems and Services (ISS)
	+ Filestore: <http://www.ncl.ac.uk/itservice/service-catalogue/core/filestore/>
	+ Virtual Research Environment: <http://www.ncl.ac.uk/itservice/vre/>
* Any specific Faculty/local storage?
* Non-digital storage?
 |
|  | DCC 5.2.1: How will you back-up the data during the project's lifetime? |
|  | Digital Curation Centre DMP Online Guidance:Remember to consider all of the costs of backup, e.g. logging storage locations, version control, and of recovering data from the backup. These time/staff costs will far exceed the price of the storage device. If these are set against the risks of the device failing, becoming lost, destroyed or unusable, a centralised backup service is more likely to be justifiable. This service may be provided by your institution; you may also choose to incorporate off-site storage for additional protection, or arrange your own backup regime.Guidance:- UKDA Guidance on Data Backup (http://www.dataarchive.ac.uk/sharing/backup.asp)Newcastle University Information:* Information Systems and Services (ISS): http://www.ncl.ac.uk/itservice/filestore/home-folder/
* Any specific Faculty/local back up procedures?
* Non-digital storage?

Useful External Links:Backing up data: <http://www.data-archive.ac.uk/create-manage/storage/back-up>Backing up data: <http://datalib.edina.ac.uk/mantra/storageandsecurity.html>  |
|  | DCC 5.2.2: How regularly will back-ups be made? |
|  | Digital Curation Centre DMP Online Guidance:This may be something you choose to leave to your institutional or departmental support, but it's worth recording the information here.Useful External Links:Backing up data: <http://www.data-archive.ac.uk/create-manage/storage/back-up>Backing up data: <http://datalib.edina.ac.uk/mantra/storageandsecurity.html>  |
|  | DCC 5.2.3: Who is responsible for backup? |
|  |  |
|  | DCC 5.3.1: How will you manage access restrictions and data security during the project's lifetime? |
|  | Digital Curation Centre DMP Online Guidance:This may be managed via various levels of password protection.Guidance:- DCC Briefing Paper on Information Security Management (http://www.dcc.ac.uk/resources/briefing-papers/standards-watchpapers/information-security-management-iso-27000-iso-27k-s)- UKDA Guidance on Data Security (http://www.dataarchive.ac.uk/sharing/security.asp)Newcastle University Information:* Information Systems and Services (ISS):
	+ <http://www.ncl.ac.uk/itservice/security/>
	+ <http://www.ncl.ac.uk/itservice/security/datadeviceprotection/>
	+ <http://www.ncl.ac.uk/itservice/security/encryption/>

Useful External Links:Secure access to data: <http://datalib.edina.ac.uk/mantra/storageandsecurity.html>  |
| **5.1.1** | **What is the anticipated (‘ballpark’ figure) of data volume that will be collected? Will this vary after processing?** |
|  | Newcastle University Information:If you would like to discuss how best to calculate your anticipated data volume, please email rdm@ncl.ac.uk.  |
| **5.1.2** | **Has the back-up process been tested and successfully validated?** |
|  |  |
| **6** | **Deposit and Long-Term Preservation** |
| **6.1** | **Deposit and Long-term preservation** |
|  | DCC 6.1: What is the long-term strategy for maintaining, curating and archiving the data? |
|  | Digital Curation Centre DMP Online Guidance:Here you will want to demonstrate consultation between data creators and the relevant repositories / data centres to secure an appropriateplace of deposit. Give details on the rationale for choosing this particular place of deposit. (N.B. Funders may require data to be offered to a particular data centre on completion of the project.) If there isn’t anywhere you can deposit, explain how you will address sustainability e.g. by choosing open standards, or note how your institution can support you to store and manage the data in the longer term. Remember that you can consult institutional archivist(s) and records managers in formulating long-term retention plans.Guidance:- DCC Briefing Paper on Digital Preservation (http://www.dcc.ac.uk/resources/briefing-papers/introduction-curation/digitalpreservation)- JISC Briefing Paper on Digital Preservation (http://www.jisc.ac.uk/media/documents/publications/digitalpreservationbp.pdf)Newcastle University Information:* Section 11 of the Newcastle draft policy (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states: ‘the University requires that the data is kept 10 years from the last citation. After this point the data will be reviewed and either retained or destroyed. Any destruction will be in accordance with legal and funder requirements.’
* Section 10 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states the Principal Investigator is responsible for the . This section also gives an outline of the archiving options and also how the inform the University of where the data is being stored
* It is advised you check the terms and conditions of your grant funding letter to confirm the exact terms as some funders may have conditions that are beyond the Newcastle policies and procedure that will need to be followed.
* The University has the ISS Research Data Warehouse <http://www.ncl.ac.uk/itservice/filestore/researchdatawarehouse/> for large amounts of data.

Useful External Links: List of repositories: <http://www.dcc.ac.uk/resources/external/repositories> Long term preservation: <http://datalib.edina.ac.uk/mantra/preservation.html> Advice on preservation: <http://www.dcc.ac.uk/digital-curation/planning-preservation> Curation reference manual: <http://www.dcc.ac.uk/resources/curation-reference-manual> Link to a preservation template that can be used to outline preservation policies: <http://www.dcc.ac.uk/resources/policy-and-legal> DCC “Preservation Strategies” chapter: <http://www.dcc.ac.uk/resources/curation-reference-manual/completed-chapters/preservation-strategies> Long-term storage: <http://data-archive.ac.uk/create-manage/storage/store-data>  |
|  | DCC 6.2.1: Will or should data be kept beyond the life of the project? |
|  | Newcastle University Information:* Section 11 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states: ‘The University requires that the data is kept 10 years from the last citation. After this point the data will be reviewed and either retained or destroyed. Any destruction will be in accordance with legal and funder requirements.’
* It is advised that you check the terms and conditions of your grant funding letter to confirm the exact terms

Useful External Links:Link to a preservation template that can be used to outline preservation policies: <http://www.dcc.ac.uk/sites/default/files/Preservation%20policy%20template.pdf>  |
|  | DCC 6.2.2: If you answered Yes to DCC 6.2.1, How long will or should data be kept beyond the life of the project? |
|  | Digital Curation Centre DMP Online Guidance:Your funding body or institution may specify time-spans for retention. If not, general guidance is given in the RCUK Code of Good Research Conduct which says that "data should normally be preserved and accessible for ten years, but for projects of clinical or major social, environmental or heritage importance, for 20 years or longer."Newcastle University Information:* Section 11 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states: ‘The University requires that the data is kept 10 years from the last citation. After this point the data will be reviewed and either retained or destroyed. Any destruction will be in accordance with legal and funder requirements.’
* It is advised that you check the terms and conditions of your grant funding letter to confirm the exact terms

Useful External Links:Link to a preservation template that can be used to outline preservation policies: <http://www.dcc.ac.uk/sites/default/files/Preservation%20policy%20template.pdf>  |
|  | DCC 6.2.3: If you answered Yes to DCC 6.2.1, What data centre/ repository/ archive have you identified as the long-term place of deposit? |
|  | Digital Curation Centre DMP Online Guidance:Your funder may have a preferred place of deposit.Newcastle University Information:* The University has the ISS Research Data Warehouse <http://www.ncl.ac.uk/itservice/filestore/researchdatawarehouse/> for large amounts of data. National Data Centres: <http://research.ncl.ac.uk/rdm/policyandgovernance/nationaldatacentres/>

Useful External Links:List of repositories: <http://www.dcc.ac.uk/resources/external/repositories> Deposit data advice: <http://data-archive.ac.uk/deposit> Link to a preservation template that can be used to outline preservation policies: <http://www.dcc.ac.uk/sites/default/files/Preservation%20policy%20template.pdf> |
|  | DCC 6.2.7: Will transformations be necessary to prepare data for preservation and/or data sharing? |
|  | Digital Curation Centre DMP Online Guidance:Examples of transformation may include data cleaning/anonymisation where appropriate, or migration to another file format.Useful External Links:<http://www.data-archive.ac.uk/create-manage/document/overview> Advice on data transformations: <http://datalib.edina.ac.uk/mantra/fileformatsandtransformations.html>  |
|  | DCC 6.2.8: If you answered Yes to DCC 6.2.7, what transformations will be necessary to prepare data for preservation / future re-use? |
|  | Digital Curation Centre DMP Online Guidance:Examples of transformation may include data cleaning/anonymisation where appropriate, or migration to another file format.Useful External Links:Advice on data transformations: <http://datalib.edina.ac.uk/mantra/fileformatsandtransformations.html> Link to a preservation template that can be used to outline preservation policies: <http://www.dcc.ac.uk/sites/default/files/Preservation%20policy%20template.pdf>Documentation: <http://www.data-archive.ac.uk/create-manage/document/overview>  |
|  | DCC 6.3.3: Will you include links to published materials and/or outcomes? |
|  | Useful External Links:Citing datasets and linking to publications: <http://www.dcc.ac.uk/resources/how-guides/cite-datasets> |
|  | DCC 6.3.4: If you answered Yes to DCC 6.3.3, please give details. |
|  |  |
|  | DCC 6.3.5: How will you address the issue of persistent citation? |
|  | Digital Curation Centre DMP Online Guidance:You may wish to refer to Digital Object Identifiers (DOIs), Persistent URLs, etc.Guidance:- DCC Briefing Paper on Persistent Identifiers (http://www.dcc.ac.uk/resources/briefing-papers/introductioncuration/persistent-identifiers)- The Digital Object Identifier System (http://www.doi.org/) |
|  | DCC 6.4.1: Who will have responsibility over time for decisions about the data once the original personnel have gone? |
|  | Digital Curation Centre DMP Online Guidance:This is likely to be either an institutional library or repository, or some other data custodian (e.g. a data centre.)Newcastle University Information:* Section 11 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states: ‘The University requires that the data is kept 10 years from the last citation. After this point the data will be reviewed and either retained or destroyed. Any destruction will be in accordance with legal and funder requirements.’
* It is advised that you check the terms and conditions of your grant funding letter to confirm the exact terms
 |
| **6.1.1** | **What is your deletion policy? Will data sets be deleted? When, by whom and how will they be identified?** |
|  | Newcastle University Information:* Section 11 of the Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states: ‘The University requires that the data is kept 10 years from the last citation. After this point the data will be reviewed and either retained or destroyed. Any destruction will be in accordance with legal and funder requirements.’
* It is advised that you check the terms and conditions of your grant funding letter to confirm the exact terms
* ISS Data Disposal guidance: <http://www.ncl.ac.uk/itservice/security/Keeping_Information_Secure_Jan_2012.pdf>

Useful External Links:UK Data Archive: <http://data-archive.ac.uk/create-manage/storage/data-disposal>  |
| **6.1.2** | **What is the anticipated (‘ballpark’ figure) of data volume that will be archived?** |
|  | Newcastle University Information:* Section 9 of Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states ‘where project data needs are significant (over 0.5 TB) and funder requirements allow additional resource should be costed into the project at the grant application stage. For requirements outside of this please consult RES.’
 |
| **7** | **Resourcing** |
| **7.1** | **Resourcing** |
|  | DCC 7.1: Outline the staff/organisational roles and responsibilities for data management |
|  | Digital Curation Centre DMP Online Guidance:This could include: data management time allocations; project management of technical aspects; training requirements; storage and backup; contributions of non-project staff, etc. Individuals should be named where possible. Continue in an Annex if necessary.Newcastle University Information:* Section 3.2 of Newcastle University draft RDM Institutional policy and Code of Good Practice (<http://www.ncl.ac.uk/res/assets/documents/DraftResearchDataManagementPolicyPrinciplesandCodeofGoodPractice.pdf>) states the Principal Investigator (PI) at Newcastle is responsible for the practical and operations of the research data throughout the lifecycle of the project.

Other Information:Examples of who may have responsibilities for your data include (see section 3 of the above policy and Code of Good Practice for further information):* Principal Investigator (PI)
* Research active Staff
* Research active postgraduates
* Project Team Members
* Research & Enterprise Services (including Legal, Joint Research Office & University Research Office)
* Library
* ISS (inc. Governance Office)
* Head of Academic Units
* University Research Committee

Useful External Links:Different positions necessary for digital curation: <http://www.dcc.ac.uk/resources/roles>“Roles and Responsibilities”: <http://data-archive.ac.uk/create-manage/planning-for-sharing/roles-responsibilities> |
|  | DCC 7.2: How will data management activities be funded during the project's lifetime? |
|  | Digital Curation Centre DMP Online Guidance:This should cover (e.g.) payments to service providers within institutions, payments to external data centres for hosting data, income derived from licensing data, etc). It is also important to remember to build costs of inproject data management into the project budget. (N.B. Some funders state explicitly that they will meet the cost of preparing data for deposit, so remember to include this in your time and budget allocation too!)Newcastle University Information:* Costing and internal application process: <http://www.ncl.ac.uk/res/research/application/index.htm>
* Help and resources for research funding: <http://www.ncl.ac.uk/res/research/guidance/index.htm>

Useful External Links:Activity based data management costing tool (designed for the social sciences): <http://data-archive.ac.uk/media/247429/costingtool.pdf>  |
|  | DCC 7.3: How will longer-term data management activities be funded after the project ends? |
|  | Digital Curation Centre DMP Online Guidance:This should cover (e.g.) payments to service providers within institutions, payments to external data centres for hosting data, income derived from licensing data, etc). It is also important to remember to build costs of inproject data management into the project budget.Newcastle University Information:* Costing and internal application process: <http://www.ncl.ac.uk/res/research/application/index.htm>
* Help and resources for research funding: <http://www.ncl.ac.uk/res/research/guidance/index.htm>
 |
| **7.2** | **Describe how funding for RDM has specifically been costed into funding application (where appropriate).** |
|  | Newcastle University Information:* Costing and internal application process: <http://www.ncl.ac.uk/res/research/application/index.htm>
* Help and resources for research funding: <http://www.ncl.ac.uk/res/research/guidance/index.htm>
 |
| **8** | **Adherence and Review** |
| **8.1** | **Adherence and Review** |
|  | DCC 8.1.1: How will adherence to this data management plan be checked or demonstrated? |
|  |  |
|  | DCC 8.1.2: Who will check this adherence? |
|  |  |
|  | DCC 8.2.1: When will this data management plan be reviewed? |
|  |  |
|  | DCC 8.2.2: Who will carry out reviews? |
|  |  |
| **9** | **Actions Required** |
| **9.1** | **Actions Required** |
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| **Action** | **Responsibility** | **Review Date** |
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