

Research Data Management Plan („HeRDMO“ version)

1. General information about the project and involved persons

1) <i>General information</i> • Name of project: • ID of project (if any): • Principle investigator: • Academic discipline:
2) <i>Who is responsible for daily research data management (storage, backup)?</i> • Myself alone. • My research group's data manager. • Our departmental IT staff.
3) <i>Who will be responsible for the evaluated research data after completing the project?</i> • At this stage, I have no idea. • I'll take my data with me and maintain responsibility. • I hope the journal will maintain access to the supplementary information files associated with my article. • The University / Institute will assume long-term responsibility for the data I have chosen to preserve in its data archive.

2. Digital data during the project

1) <i>What kind of digital data will be worked with during the project?</i> • <i>Electron microscopy data of cell membrane proteins.</i> • <i>Video field recordings of avian behaviour, and their quantitative analysis.</i> • <i>Pictures / multidimensional visualisation or models</i> • <i>Audio or video recordings</i> • <i>Texts</i> • <i>Tables</i> • <i>Databases of ...</i> • <i>Software XY</i> • <i>Device-specific data</i> • <i>Experiment (with short description)</i> • <i>Inquiry of persons (with short description)</i> • <i>Simulation / modeling (with short description)</i> • <i>Software code (with short description)</i>
2) <i>Which file formats will be used?</i> • <i>Text formats</i>

● <i>Table formats</i> ● <i>Graphic formats</i> ● <i>Other</i> ● <i>---</i> ● <i>Device-specific file format XY</i> ● <i>Proprietary format XY</i> ● <i>SPSS data</i> ● <i>MS Office software</i> ● <i>PDF</i> ● <i>TIFF</i> ● <i>MP3</i> ● <i>Zeiss confocal 3D image format</i>
3) <i>Is digital data already being used? If any, where did the data arise from?</i> ● <i>No</i> ● <i>Data from data archive XY (URN, DOI?)</i> ● <i>Data from previous project XY</i> ● <i>Data from supplement of journal XY (URN, DOI?)</i> ● <i>Study XY, author YZ</i> ● <i>Experiment XY, author YZ</i> ● <i>Data of cooperation partner XY</i> ● <i>Data is in the public domain / is under licence through ODbL / via contract XY</i> ● <i>Data is allowed to be multiplied / cited with naming / is charged / is only for personal use</i>
4) <i>How is the quality assurance maintained throughout the data research and processing?</i> ● <i>Implementation of the guidelines of trade association XY</i> ● <i>Internal guidelines, see also ...</i> ● <i>Disciplinary standards, see also ...</i>
5) <i>How frequently will your research data be backed up for short-term data security?</i> ● <i>Nightly: data files stored on departmental servers are automatically backed up.</i> ● <i>Weekly, using the University's automated backup service.</i>
6) <i>How is sensitive data handled?</i> ● <i>No sensitive data</i> ● <i>Anonymization</i> ● <i>Pseudonymization</i> ● <i>Access protection on software level</i> ● <i>Access protection on hardware level</i>

3. Metadata

1) <i>How and eventually with which software will the data in the proposal be documented during generation, processing and evaluating?</i> ● <i>Device XY of producer YZ generates data</i> ● <i>Processing of raw data with program XY</i> ● <i>Evaluation with specific programs XY</i> ● <i>Analog lab notebook / file system</i> ● <i>The only description will be the filenames on my hard drive.</i> ● <i>The only description will be the column and row labels in my spreadsheets.</i> ● <i>The data will be described in handwritten notes in my lab notebook.</i> ● <i>I will save metadata describing the data files in electronic form.</i>
2) <i>What metadata will be created and how will the metadata be generated and saved?</i> ● <i>In case metadata standards do not exist in your discipline, please outline what type of metadata will be created and how.</i> ● <i>Instrument metadata are automatically included in each data file.</i> ● <i>The only metadata will be the title and short textual description that I will manually complete in the web submission form, when depositing each dataset in the University's data repository.</i> ● <i>My data descriptions will be saved in spreadsheets or word processor documents.</i> ● <i>Rich metadata conforming to a Minimal Information Standard appropriate to my research field will be recorded at the time of data acquisition, using a metadata entry form, and will thus be available as a metadata file to accompany my datasets during submission of the data to a data repository.</i>
3) <i>Which technical hardware infrastructure will be needed for the research data and metadata management in the current project?</i> ● <i>Notebook</i> ● <i>Lab computer</i> ● <i>Institutional server</i> ● <i>Hard drives, RAID, Tape-Library, etc.</i> ● <i>My research group's cloud-based secure research data file store</i> ● <i>Raw video recording on digital video tapes on the shelf above my desk</i>
4) <i>Which software infrastructure will be needed for data research and metadata management in the current project?</i> ● <i>Versioning tool like (Git, SVN etc.)</i> ● <i>Questionnaire response data will be stored on my laptop in a Microsoft Office Access 2007 database.</i> ● <i>Edited videos on my laptop. Numerical analyses in a spreadsheet (Microsoft Office Excel 2007 format) on my laptop.</i>

4. Storage, Archiving and Publication

1) <i>How much storage capacity (in TB) will presumably be needed during the accomplishment of the project?</i> ● <i>From 1 GB to 1000 TB</i>
2) <i>How much storage capacity (in TB) will presumably be needed for long-term preservation?</i> ● <i>From 1 GB to 1000 TB</i>
3) <i>What are the criteria for the selection of the research data, that needs to be deposited?</i> ● <i>Only final data, because ...</i> ● <i>Only raw data, because ...</i> ● <i>All data, because ...</i> ● <i>Weighing up individually</i> ● <i>Effort / expense / reproducibility</i> ● <i>Importance / reusability</i> ● <i>Prof. XY decides</i>
4) <i>Which data produced and/or used in the project will be made openly available as the default?</i> ● <i>If certain data sets cannot be shared (or need to be shared under restrictions), explain why, clearly separating legal and contractual reasons from voluntary restrictions.</i> ● <i>Final data</i> ● <i>Raw data</i> ● <i>Software code</i> ● <i>All data</i>
5) <i>How will the data be made accessible (e.g. by deposition in a repository) / Where will your research data be archived for long-term preservation?</i> ● <i>Selected data will be included in the figures and tables of research papers published by my research group, but we have no plans to archive and publish the full datasets.</i> ● <i>As supplementary files attached to my journal articles on the publisher's website.</i> ● <i>In the University's archive ORA-Data, run by the library service.</i> ● <i>In appropriate genomics databases run by the European Bioinformatics Institute.</i>
6) <i>What metadata will be published with the data to make them interpretable and reusable?</i> ● <i>I will expect users to be able to interpret the column and row labels in my spreadsheets.</i> ● <i>The dataset will be described in the journal article we will publish, but will have no other metadata beyond those required by the repository for data citation: Author, Date, Title, Source, Identifier.</i> ● <i>An XML metadata file created in conformance with a Minimal Information standard will be submitted to the repository as part of the data package, along with the data files.</i> ● <i>A metadata record will be created in "Hessen-Data".</i>
7) <i>What methods or software tools are needed to access the data?</i> ● <i>Is documentation about the software needed to access the data included?</i> ● <i>Is it possible to include the relevant software (e.g. in open source code)?</i>

8) *Who owns the copyrights / user's rights of the data resulting from the project?*

- *Originator are following persons: X, Y*
- *The university XY owns the usage rights*
- *Our cooperation partner owns the usage rights*

9) *With whom will the data be shared except the project members?*

- *With nobody, because e.g. data security or other reasons forbid it:*
 - i. *We intend to make a patent application, and must avoid prior disclosure.*
 - ii. *Don't want to make locations of members of endangered species available to poachers.*
 - iii. *The research data are confidential because of the arrangement my research group has made with the commercial partner sponsoring our research.*
 - iv. *My data form part of a long-term study upon which my research group is entirely reliant for its on-going research publications and academic reputation. We only share this with trusted colleagues.*
 - v. *Confidential human patient data.*
 - vi. *Questionnaire data collected in confidence from individuals – anonymized averaged data will be published.*
- *Members of my research group and trusted external collaborators.*
- *Anyone who asks for them.*
- *Everyone, by publishing the data online, since our research community is committed to the rapid sharing of research results (with / without e.g. one year embargo period).*
- *We wait for a data publication, until the journal article describing our results has been published.*

10) *At which point will your research data be moved to a secure archive for long-term preservation and publication?*

- *Our research data are already securely stored in an institutional data server.*
- *Upon completion of each set of experiments.*
- *When my research group leader decides it is appropriate.*
- *Immediately after publication of my thesis.*
- *Upon submission of our Nature paper, so that the data are available for reviewers.*