Data Management Plan

Do these situations seem familiar?

☐ Have you ever looked at data that you produced a while ago and been unable to make sense of it?

☐ Have you ever lost several days of work because your data had not been backed up properly?

☐ Did you ever have to extract numbers by hand from a graph in some poorly made paper?

☐ Have you found it difficult to understand a data set that someone else gave you?

☐ Did you ever download a data set from the internet only to discover that it was completely different from what you expected?

☐ Have you ever found your own data to be inconsistent, incomplete or simply unreadable?

A Data Management Plan will help you to

✓ make your grant proposal more successful.

✓ identify technical, legal and ethical challenges right at the beginning of your project.

✓ structure and organise your research data so you`ll always be able to find what you need.

✓ avoid data loss and double work.

✓ promote your work by making your data FAIR: Findable, Accessible, Interoperable and Reusable.

✓ follow the Code of Conduct for Research Integrity.

✓ ensure that you are in compliance with current legislation and requirements from funding agencies and publishers.

✓ increase the scientific impact of your research by publishing data that underpin your results.

What is a Data Management Plan?

A Data Management Plan (DMP) contains details on how you will handle your research data and covers all aspects of the research data life cycle.

DMP Templates

Templates for DMP's are available to researchers at DTU in the tool "DMP Online".

A general template developed by DTU Library is available in DMP Online, as well as templates required for H2020 funded projects.

The template will help you address the relevant questions about: "Data collection", "Data storage", "Documentation", "Data sharing" and "Long-term preservation".

Tools and guidance

DTU Library provides tools, systems and guidance to support you with data management:

Use DMP Online as your online tool with templates for writing data management plans: *dmponline.deic.dk*

Watch the eLearning on research data management: *vidensportal.deic.dk/da/RDMELearn*

Use the guide on DTU Inside: *www.inside.dtu.dk/en/medarbejder/forskning-innovation-og-raadgivning/forskningsdata*

Publish and make your research data visible in DTU Data: *data.dtu.dk*

Ask questions to *datamanagement@dtu.dk*

DTU Library

DATA COLLECTION

Research data can take many forms, depending on the type of research they are used for - e.g. observational data, experimental data, simulation data or processed data - and come in a variety of different types and formats - such as tables, documents, audio and video recordings, methods, algorithms and software, real-time data, big data, smart data and many, many more.
Some data might be sensitive or confidential and require special care.

- What type of data will be collected?
- How will the data be collected?
- Which file formats are the data in?
- What are the estimated amounts of data?
- How will the data be structured?
- Are there any limitations on the use of existing data?
- Are there any ethical or legal issues to be considered?

DATA STORAGE

DTU provides the IT infrastructure for storage and backup of data. However, in some cases special solutions might be needed, in particular when the amounts of data are very large or when additional security requirements must be fulfilled.
Frequent and reliable backups are crucial at any stage of the research project.

- Where are the raw data and results stored?
- How are the data backed up?
- How do you manage access to data?
- How are data shared within the project?
- How do you guarantee the protection of sensitive data?

DOCUMENTATION

Documentation means adding value to the data and making it usable in a broad sense. Any file or data set should contain metadata describing its origin, i.e. when, where, how and by whom it was created.
Good documentation is a prerequisite for making research reproducible and complying with the Danish Code of Conduct for Research Integrity.

- How will the data be versioned?
- Do metadata standards exist in your field?
- What metadata will be included?
- How will the metadata be generated?
- How will the data be documented?
- How will the data be comprehensible to other users?
- How will reproducibility of results be ensured?

DATA SHARING

Research data are very valuable and of high interest to others in the scientific community and society at large. Methods should be transparent and the outcomes should be made available for everyone. Sharing data will enable reuse and stimulate new research projects. Data sets can be published in DTU Data and can - in the same way as regular articles - receive recognition, be cited, and thereby increase the visibility of your work.

- Which data will be shared?
- Which tools/software are needed to view/visualise/analyse the data?
- Which data cannot be shared?
- Who will have access to the data?
- When will data be shared?
- Where will data be shared?
- How will the data be made discoverable?
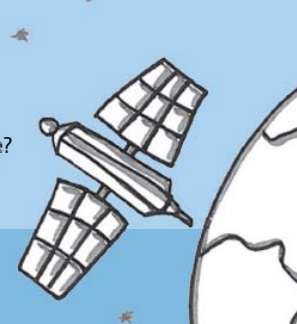
LONG-TERM PRESERVATION

There is a high risk of losing data when a project finishes or the researcher who collected the data leaves the institution. This means a waste of time, money and knowledge. Choosing which data should be preserved for a longer time and making sure that it is readable and understandable is a major challenge but also a rewarding investment.

- Which criteria will be used to select the data that should be archived for preservation and long-term access?
- Where will data be archived?
- How will you guarantee readability of data?
- Which data must be destroyed?
- Who will be responsible for long-term preservation?
- How long should the data be preserved?
- How will long-term preservation be financed?