DMP in 1-2-3

An introduction to data management plans

Link to presentation:

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NTNU University Library
27.04.2026

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Outline

OPEN SCIENCE NTNU

Part 1: (10:00-10:55)

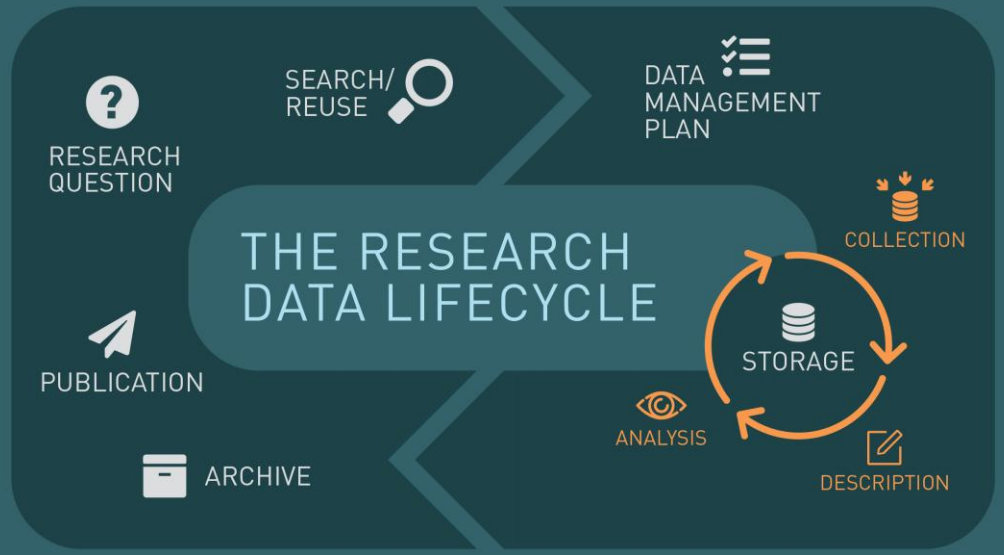
- What is a data management plan (DMP)?
- Why do you need one for your project?
- What should your DMP contain? (the “six core requirements” from Science Europe)

Part 2: (11:00-11:30)

- Demo of FAIR Wizard Norway

What is a data management plan (DMP)?

- A formal document describing how research data will be handled **during** and **after** a research project
- Identifies key strategies to ensure research data are high quality and secure, and where possible – accessible and reusable
- A “living” document (revise and update)
- No absolute right answers – be specific and justify your choices



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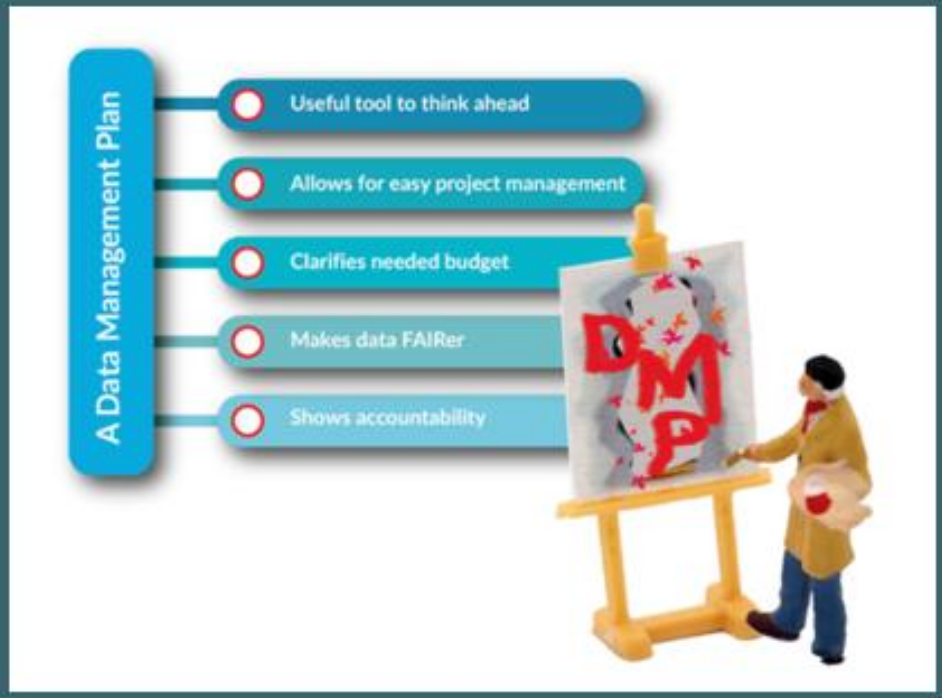
DMP: A useful tool for your project

- Requirement from funders and institutions (EU, RCN, NTNU …)

But also:

- Helps you with planning and organizing your project
- Helps you identify possible data management challenges
- Makes it easier to anticipate data management costs
- Helps you ensure that privacy and security is maintained
- A tool for making data FAIR and open (if possible)



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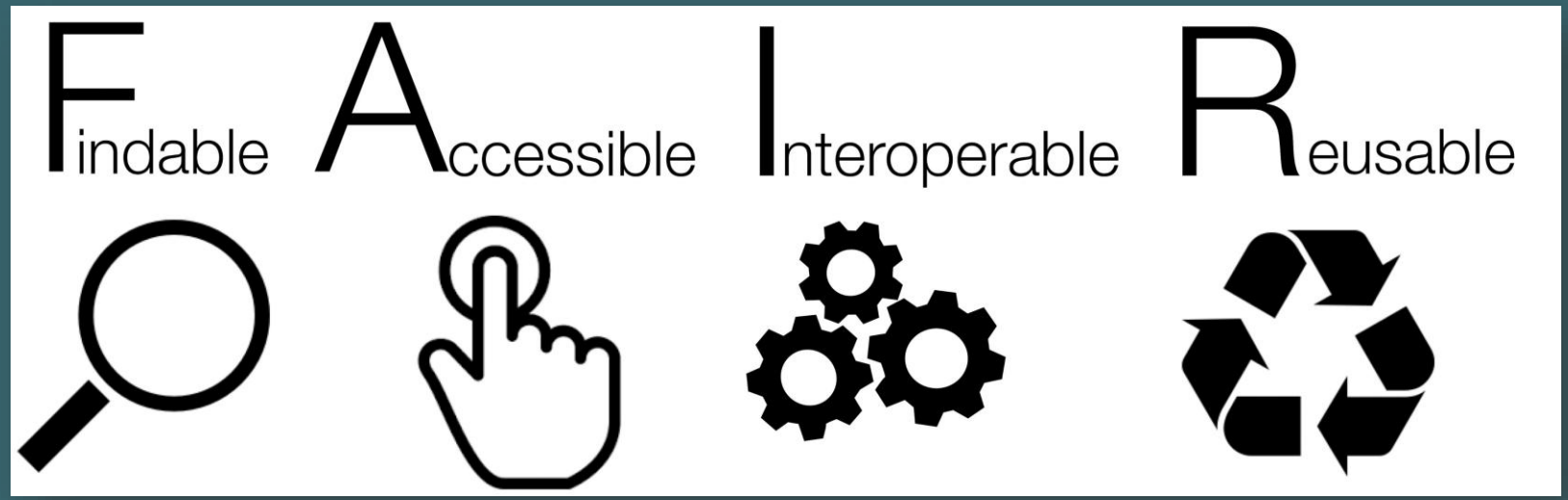
The Expert Guide on Data Management by CESSDA ERIC

FAIR Data

“The FAIR principles describe how research outputs should be organised so they can be more easily accessed, understood, exchanged and reused” (OpenAIRE)



What should a DMP contain?

- "Core Requirements"(Science Europe):

1. Data description and collection or re-use of existing data
2. Documentation and data quality
3. Storage and backup during the research process
4. Legal and ethical requirements, codes of conduct
5. Data sharing and long-term preservation
6. Data management responsibilities and resources

Use a DMP online tool!

- Fill out the DMP online according to your desired template (e.g. that specified by your research funding organisation)
- In built guidance on how to fill out the various sections
- Options for working collaboratively
- Export the DMP to word, pdf or other file format
- Machine readable DMP
- Integration with repositories

DMP ONLINE

Demo at the end!

FAIR Wizard Norway

DMP in 1-2-3

Data description and collection or re-use of existing data

- **How will new data be collected or produced and/or how will existing data be re-used?**
- **What data (for example the kinds, formats, and volumes) will be collected or produced?**

How will new data be collected or produced and/or how will existing data be re-used?

- What data will you collect or create?
- What methods/software/equipment will be used to collect or produce data?
- Can you re-use any existing data? Are there any restrictions regarding reuse (licenses, copyright etc.)?
- Why are you **NOT** re-using existing data?

Re-use of data

- Where can you find data?
  - BASE (Bielefeld Academic Search Engine)
    - www.base-search.net
  - DataCite
    - search.datacite.org
  - Elsevier Data Search
    - datasearch.elsevier.com
  - Google Dataset Search
    - https://datasetsearch.research.google.com/
- Registry of Research Data Repositories
    - re3data.org

EMBL-EBI: Our impact

We collaborate with scientists and engineers all over the world, and provide the infrastructure needed to share data openly in the life sciences.

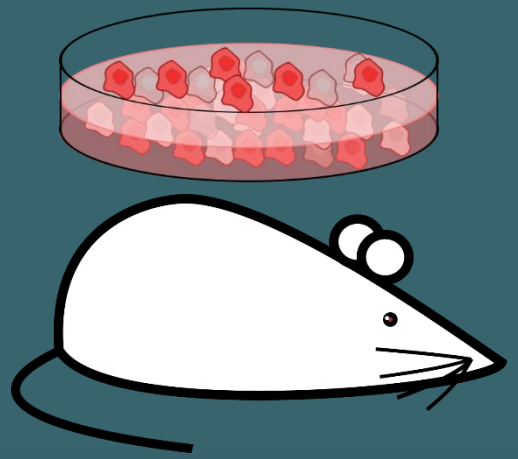
390 Petabytes
of raw data storage

81 million
web requests made to our websites on an average day

What data (for example the kinds, formats, and volumes) will be collected or produced?

- What kinds/types of data are we talking about? (images, sound recordings, tables, texts, videos etc.)
- Which formats? (pdf, xls, doc, txt, rdf, csv etc.).
- How much? (MB, GB, TB …)?

Before collect data: classify it



Meteorologisk institutt

GEONORGE

NTNU Policy for classification of Information Assets (see: Confidentiality assessment)

NTNU's Data Collection guide

Interview with //recording// of sound and/or video

	Public	Internal	Confidential	Highly Confidential
Zoom and Teams	OK (1)	OK (1)	NO	NO
Webex - Confidential digital interview	--	--	OK	NO
Nettskjema-Diktafon App	OK	OK	OK (2)	OK (2)
External dictaphone	OK	OK (3)	OK (3)	NO (4)

(1) You can use the integrated record function, but you have to make sure that the recorded file is stored and processed according to the relevant guidelines. See also the Data Storage Guide.

(2) The Dictaphone app has to be set up to collect and store data directly in TSD (Services for sensitive data). Note that user payment applies for TSD.

(3) *Requires good procedures for transfer of recordings to secure storage and deletion of files from the dictaphone.*

(4) A complete classification of information s
Data @NTNU.

Survey tools

For the collection of data with digital surveys for research and student projects, Nettskjema is recommended. For the collection of confidential (data), Nettskjema must be set up to collect and store data directly in TSD. UiO provides user guides for Nettskjema, and Research Data @NTNU can also offer advice, guidance and help.

Documentation and data quality

- **What metadata and documentation (for example the methodology of data collection and way of organising data) will accompany the data?**
- **What data quality control measures will be used?**

How will data be organised and documented?

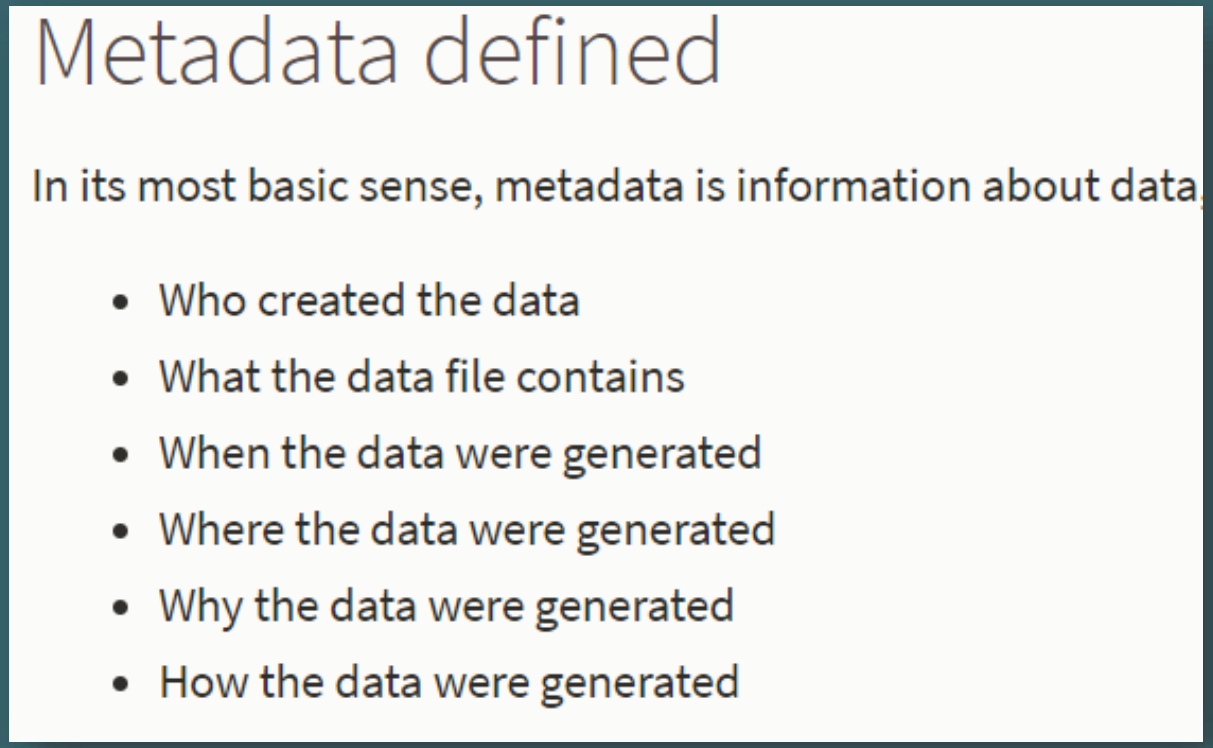
Logical and **consistent** file naming and folder structures prevent confusion and make files easy to find:

- Descriptive but concise: include meaningful information, like project name, data type
- Include version numbers or date, in a consistent format: YYYY-MM-DD
- Avoid special characters: hypens (-) and underscores (_) are ok

What other information is needed to understand the data and enable reuse? E.g. protocols, definitions of variables, units of measurement, instrument calibration etc.

- Capture all this – and explain how files are named and structured - in a “ReadMe” file
- This will save you a lot of time later!

Metadata: data used to define or describe other data



(Stanford Libraries, Creating Metadata)

- Metadata standards: standardized ways of defining of describing other data
- Dublin Core is a generic list of standardized elements for describing digital resources like a dataset
- Darwin Core is used for biodiversity data
- DDI (Data Documentation Initiative) is often used for social sciences
- The Research Data Alliance (RDA) provides a Metadata Standards Catalog

Dublin Core: the default

Element	Description
Title	A name given to the resource, either supplied by the individual assigning metadata or from the object. Example: "A Pilot's Guide to Aircraft Insurance"
Creator	Entity responsible for making the resource. Example: "Duncan, P. A."
Subject	The topic of the resource, typically represented using keywords. Example: "Colonial medicine"
Description	An account of the resource. Example: "Illustrated guide to airport markings and lighting signals for airports with low visibility conditions."
Publisher	An entity responsible for making the resource available. Example: "The University of Texas Press"
Contributor	An entity responsible for making contributions to the resource (e.g. editor, transcriber, illustrator). Example: "Austin Citizen Photograph"

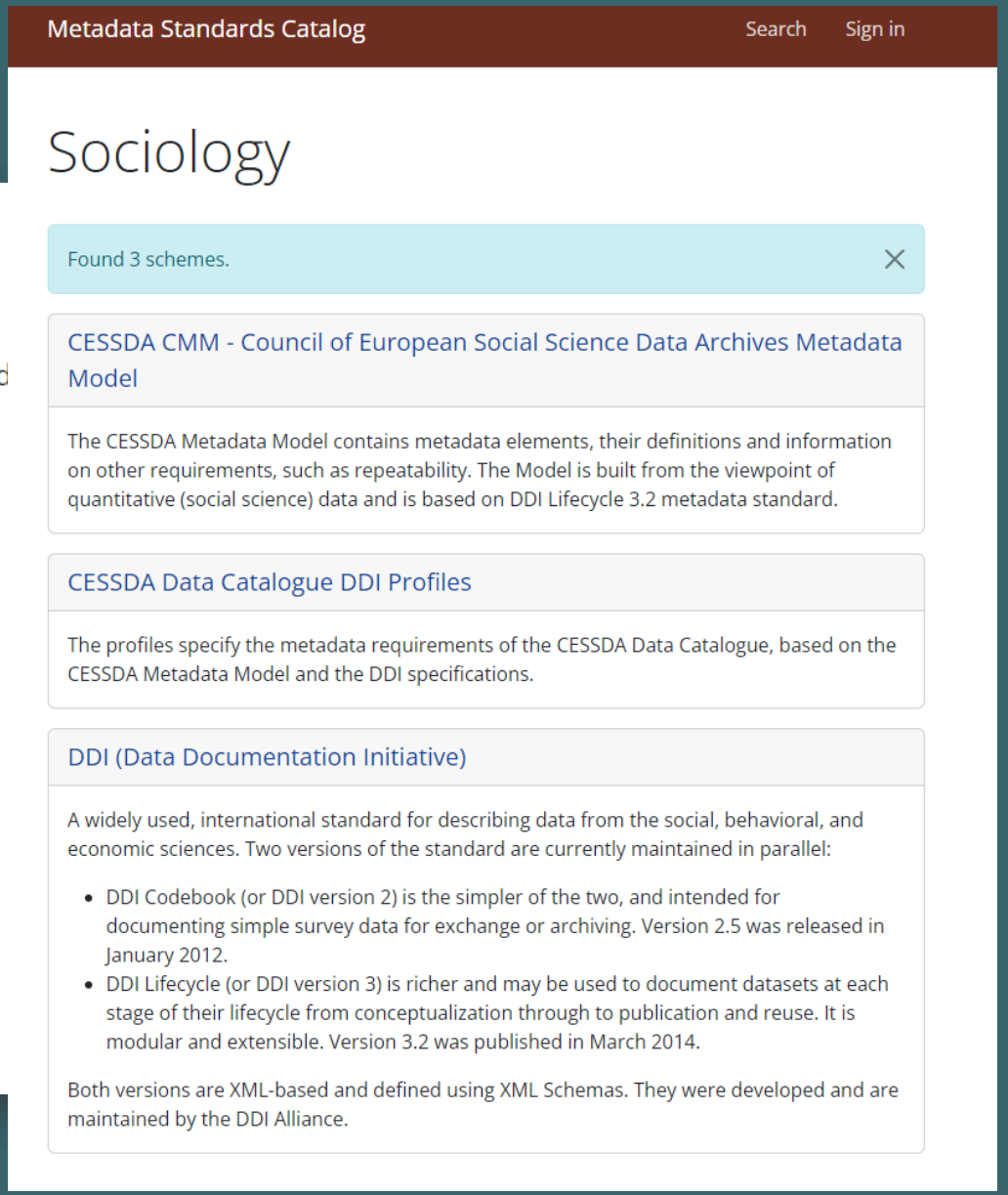
Metadata Standards Catalog

The RDA Metadata Standards Catalog is a collaborative, open directory of metadata standard applicable to research data. It is offered to the international academic community to help address infrastructure challenges.

- Read more details about the scope of the Catalog
- Read our terms of use
- Read our accessibility statement
- Contribute to the Catalog
- Explore our API

Metadata standards, profiles and schemes

- Browse by scheme name
- Browse by subject
- Search



What data quality control measures will be used?

- Standardized methods?
- Calibration, control samples?
- Repeated measurements/observations?
- Peer review of data/data entry validation
- Use of controlled vocabularies
- …

Storage and backup during the research process

- **How will data and metadata be stored and backed up during the research process?**
- **How will data security and protection of sensitive data be taken care of during the research?**

NTNU storage guide

Recommended storage services

	Approved classes	Best suited for	Less suited for	Storage quota	Access and collaboration
NTNU research storage (forskning.it.ntnu.no)	Open Internal	Large amounts of research data and for collaborations across departments and units at NTNU	External collaboration	On demand. Costs may incur in the future, in particular for large quotas.	Storage service available for NTNU users, for research projects and internal collaboration. Send request in NTNU Hjelp.
NTNU Shared network directory (T:)	Open Internal	Large amounts of research data and for collaborations within each department or unit	External collaboration	On demand.	The shared directory is available for all employees, students can get access if necessary. Use NTNU Hjelp for requests.
Microsoft Teams (Sharepoint)	Open Internal Confidential*	Collaboration, especially with data and files in Microsoft 365-format.	Processing of confidential data, as well as larger files (> 5 GB) for example images and video.	On demand.	Available for all employees and students. Storage in shared locations where users can manage sharing and access.
NTNU NICE-1 - Storage with shielding	Open Internal Confidential Highly confidential*	Storage of data with need for protection. Collaboration internally at NTNU.	Large amounts of data (>10 GB). External collaboration Cannot be used with virtual desktop (VDI). **Cannot be used by students with confidential data and private computers.**	10 GB Possible to increase quota.	Available for employees and students at NTNU by request. Se information on the NICE-1 wiki.
HUNT Cloud	Open Internal Confidential Highly confidential (X)	Storage of data with special need for protection. Processing of data within secure project areas, eg. health data.	Open and internal data that can be stored elsewhere with lower cost and easier access.	On demand. Costs based on use.	Available for research projects on request. See information in HUNT Cloud. External collaboration with partners outside NTNU possible.
TSD (Services for sensitive data) - service from UiO, NTNU has a collective agreement	Open Internal Confidential Highly confidential	Storage of data with special need for protection. Processing of data within secure project areas, eg. health data.	Open and internal data that can be stored elsewhere with lower cost and easier access.	1TB is standard for each project area. **NB! User payment will be introduced from 2025.**	Available for research projects on request Se guidance on wiki for TSD. External collaboration with partners outside NTNU possible.

NICE-2

Denne siden beskriver NICE-2. En behandlingsplatform for sensitive forskningsdata. Her kan du bearbeide forskningsdata i et trygt og sikkert miljø. NICE-2 er godkjent for å lagre og jobbe med fortrolige data. Se Lagringsguiden.

Innlogging

Pga av ekstra sikkerhet må du registrere DUO-tofaktor autentisering før du kan få tilgang til NICE-2. Det gjør du her https://2fa.it.ntnu.no/ (klikk **register device**, logg på med BankID.)

Nå kan du logge på NICE-2 her

https://nice2.iaas.ntnu.no/

Velg **Entra ID** og klikk **LOG IN.**

Søke om oppretting av prosjekt

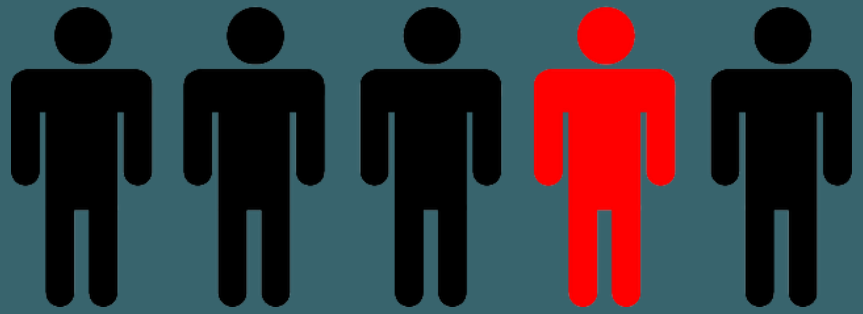
Prosjekt bestilles ved å trykke på **SØK OM NY PROSJEKTLAGRING** og fyll ut skjemaet.

NB! Veileder må søke om prosjekt for studenter.

Legal and ethical requirements, codes of conduct

- **If personal data are processed, how will compliance with legislation on personal data and on data security be ensured?**
- **How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?**
- **How will possible ethical issues be taken into account, and codes of conduct followed?**

Personal data:



Any information that identifies a living person, directly or indirectly

Examples:

- Name, ID-number, address, telephone number, email etc.
- IP-address, location information
- Images, video, voice …
- Background information that can be traced back to an individual, (e.g., job title combined with age, sex, nationality, and so forth)

Special categories of personal data (sensitive):

- Race or ethnic origin
- Political opinions, religion, philosophical beliefs, union membership
- Sexual orientation and activity
- Criminal offence data
- Genetic and biometric data used for identification purposes
- Health data

- All collection of personal data must comply with GDPR

Fundamental principles for processing personal data (GDPR)

- All processing of personal data must be lawful, fair and transparent.
- Purpose limitation and data minimization!
- The principle of storage limitation means that personal data must be deleted or anonymized when they are no longer necessary for the purpose for which they were collected.
- Personal data must be processed so that integrity, confidentiality and accessibility are protected.

In other words:

- You need a good reason
- You need a lawful basis
- You must respect the data subject and their rights
- You should not collect more than you need
- You must not use the information for anything other than what you have said
- You must not keep the information longer than necessary for the specified purpose
- You must ensure proper information security

Before you collect personal data

- Perfom a risk assessment (applies also to other information that requires confidentiality)
  - What could go wrong?
  - What can we do to prevent it?
  - What can we do to limit consequences if it happens?

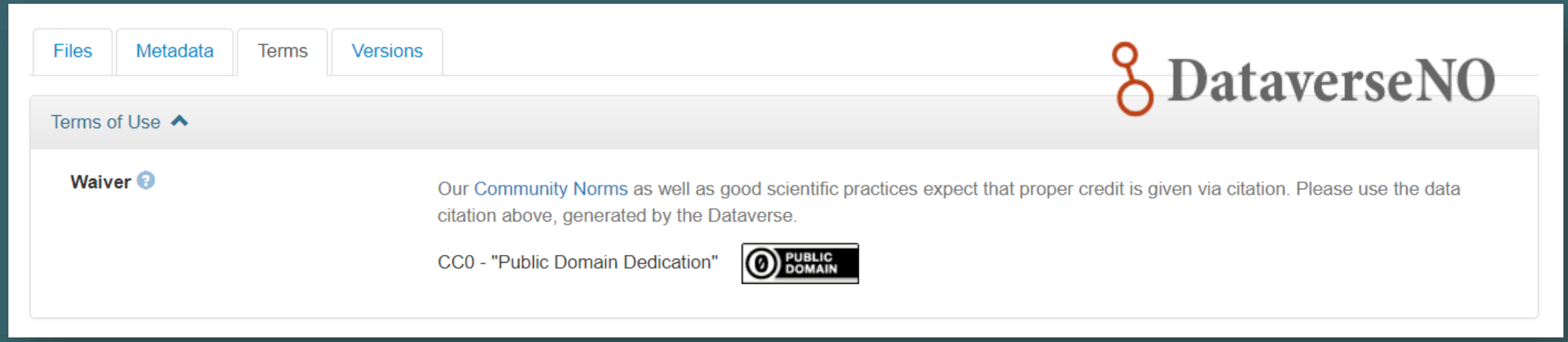
- You can use NTNU's template for a risk assessment for research projects with personal data
- Notify Sikt (NSD) at least 30 days before data collection is due to start
  - Exception: Medicine and health research projects led by the MH Faculty (must be pre-approved by REK)
  - Remember! If there are substantial changes to how your project will process data, you must notify Sikt
- See also: NTNU's wikipage Collection of personal data for research projects

How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?

- NTNU: IPR policy
- In commissioned/sponsored research, a formal contract regulates IPR
- Thinking about patenting? Contact NTNU Technology Transfer Office
- Other laws and regulations that might apply:
  - Export control system
  - Security Act

How to license research data?

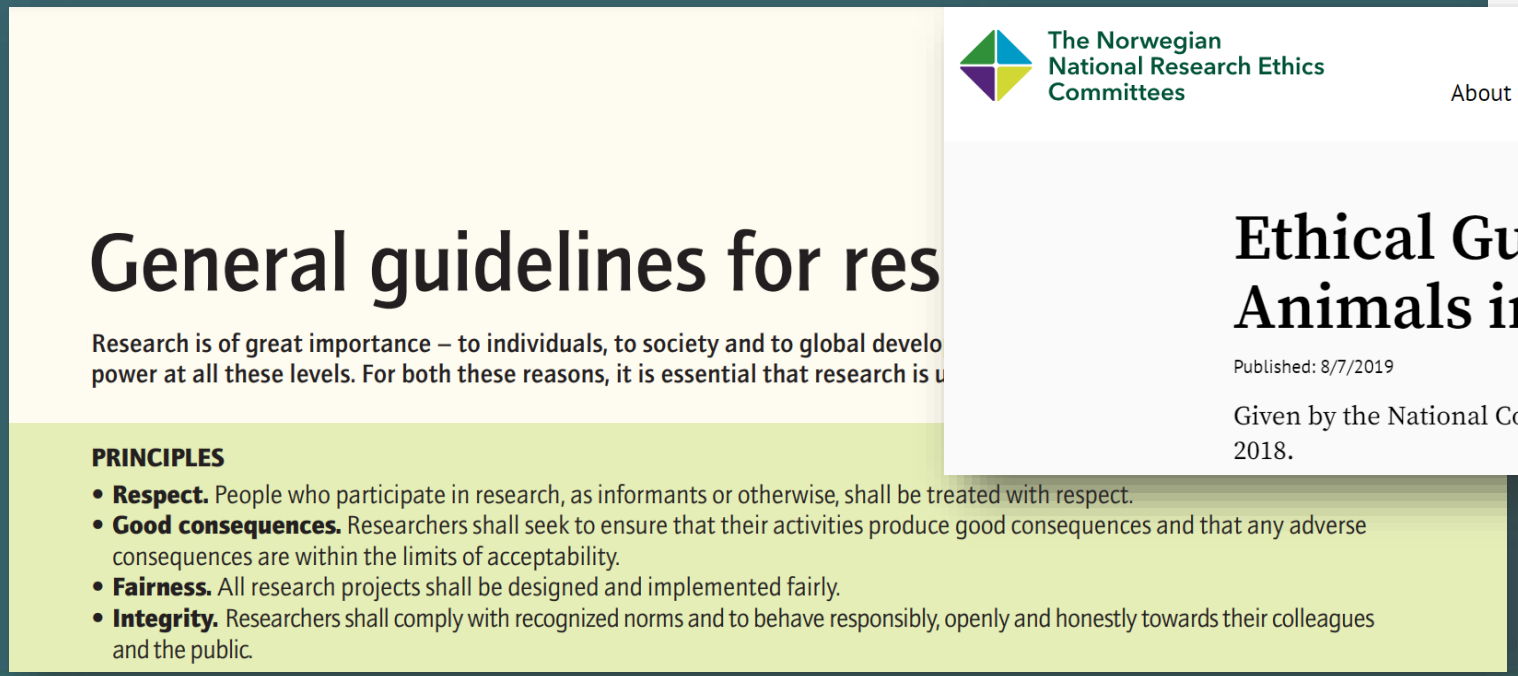
- A license is a legal arrangement between the creator of the data and the end user. It describes what you are allowed to to with the data (or publication or software etc)
- How to choose a licence:
  - Check ownership/copyright agreements and confidentiality
  - Standard licenses: Creative Commons
    - If possible, use a license with no (CC0 - Public Domain) or minimal (CC-BY - Attribution) restrictions to maximise re-use



How will possible ethical issues be taken into account, and codes of conduct followed?

- Relevant ethical approvals (REK)
- Ethical guidelines
- Other ethical considerations?

REK



General guidelines for res

Research is of great importance – to individuals, to society and to global develo
power at all these levels. For both these reasons, it is essential that research is u

PRINCIPLES

- **Respect.** People who participate in research, as informants or otherwise, shall be treated with respect.
- **Good consequences.** Researchers shall seek to ensure that their activities produce good consequences and that any adverse consequences are within the limits of acceptability.
- **Fairness.** All research projects shall be designed and implemented fairly.
- **Integrity.** Researchers shall comply with recognized norms and to behave responsibly, openly and honestly towards their colleagues and the public.

The Norwegian National Research Ethics Committees

News The M

About us Resources Guidelines Legislation Topics What ar

Ethical Guidelines for the Use of Animals in Research

Published: 8/7/2019

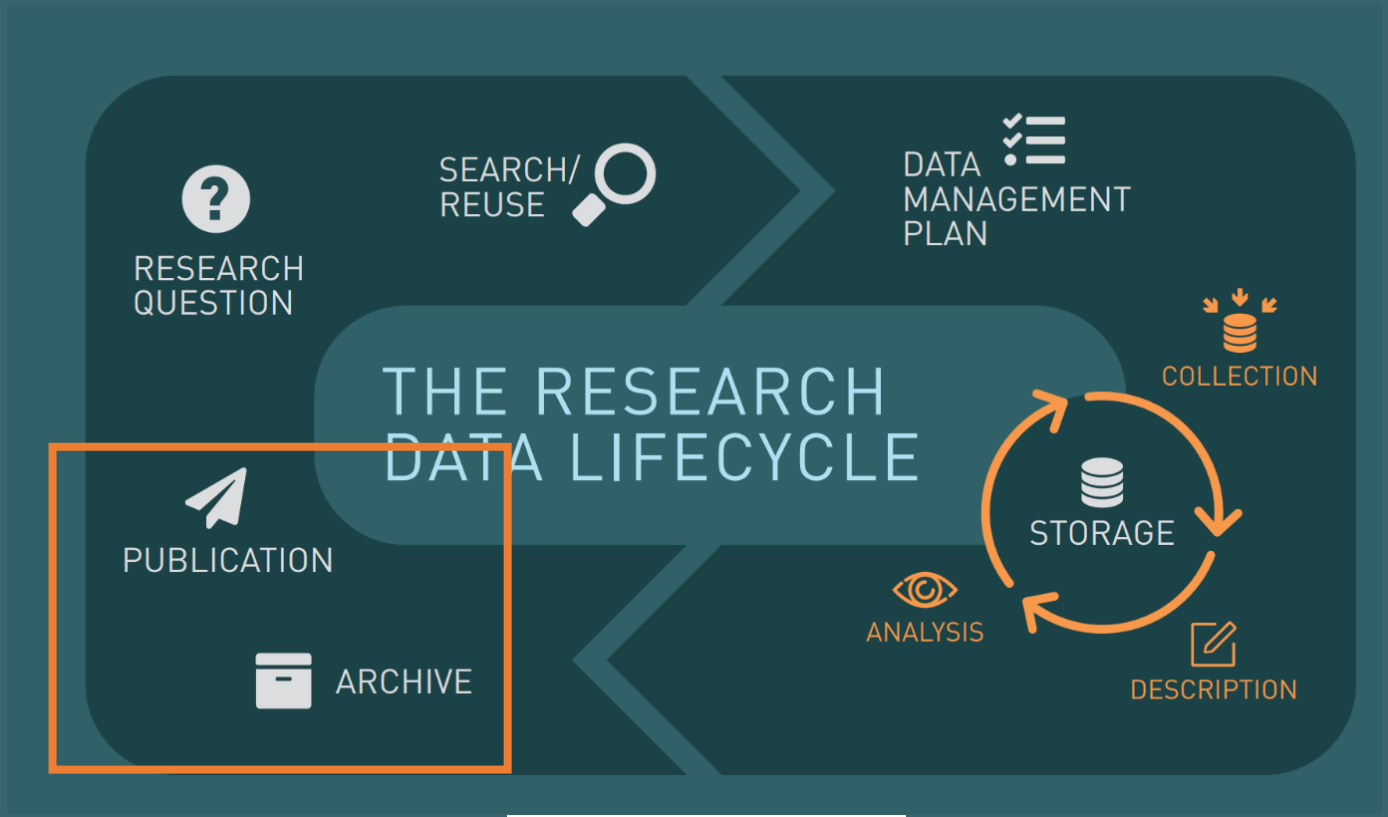
Given by the National Committee for Research Ethics in Science and Technology (NENT), 2018.

Data sharing and long-term preservation

- **How and when will data be shared? Are there possible restrictions to data sharing or embargo reasons?**
- **How will data for preservation be selected, and where will data be preserved long-term (for example a data repository or archive)?**
- **What methods or software tools will be needed to access and use the data?**
- **How will the application of a unique and persistent identifier (such as a Digital Object Identifier (DOI)) to each data set be ensured?**

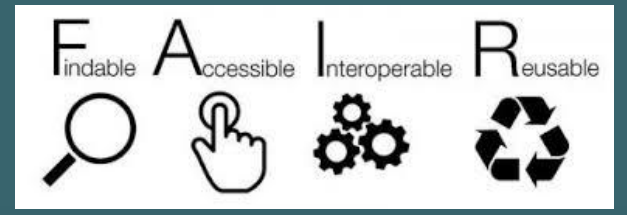
Data Archiving

- Archiving = long-term preservation of research data, normally for the purpose of sharing with others
- Archiving is achieved through data repositories
- Why? Transparency and reuse of data
- You/the project decide what data should be archived and when
- Check requirements (funders, journal, institution)
- NB: “As open as possible, as closed as necessary” There could be good reasons not to archive data openly, but they must be stated.
- We have a course all about archiving research data



https://s.ntnu.no/archiving_publication_signup

How to FAIR (in brief)



- Choose a repository that will assign your data a persistent identifier
- Provide all information required for users (computer or human) to read and interpret the data
- Use available community standards for data and metadata
- Use open formats
- Provide your data with an appropriate license (preferably CC-BY or CC-0)

www.howtofair.dk

FAIR ≠ OPEN

OPEN

The data is freely available and accessible by anyone

EMBARGOED

The data can not be accessed until the end of a specified time period

MEDIATED

Others apply for access to the data and access is approved by the researcher(s) or by a nominated data custodian

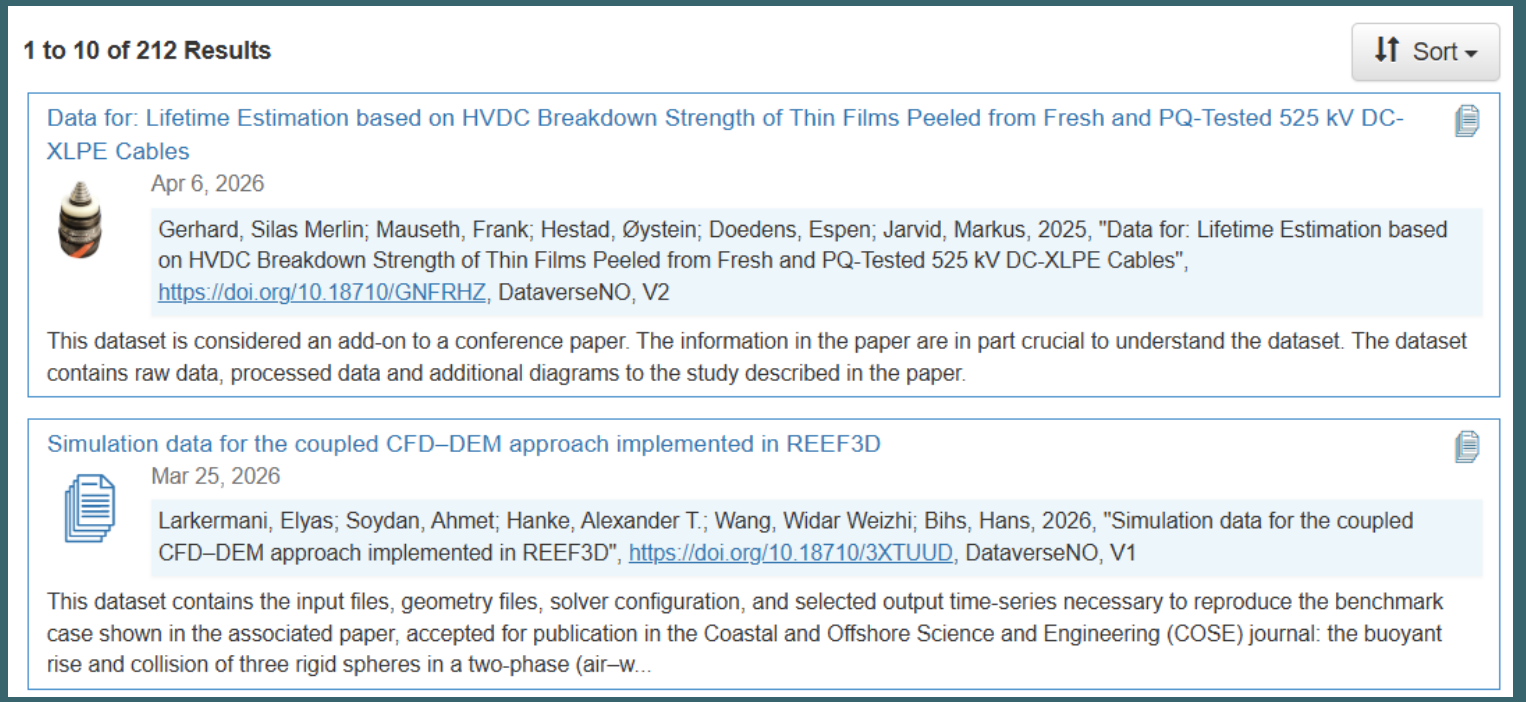
CLOSED

A record of the data is published, but access to the data is not granted

DataverseNO

NTNU's Institutional Repository for Open Research Data

- ✓ Assigns your data a DOI
- ✓ Curated – you get local support!
- ✓ CoreTrustSeal certified (in renewal)
- ✓ Metadata are indexed in Dataset search engines
- ✓ National repository – used by all Norwegian Universities



Data management responsibilities and resources

- **Who (for example role, position, and institution) will be responsible for data management (i.e. the data steward)?**
- **What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?**

Who (for example role, position, and institution) will be responsible for data management (i.e. the data steward)?

- Divide rolls and responsibilities for managing data in the project
- From the RCN's "Sharing Research Data"
  - Which roles are assigned which responsibility for data management activities in the project? Examples of activities are data capture, metadata production, data quality, storage and backup, long-term preservation and data sharing. Responsible individuals should be disclosed, if possible.
  - For collaborative projects; How is responsibility for data management between partners coordinated?
  - Who is responsible for implementing the data management plan and for ensuring that the plan is reviewed and regularly updated?

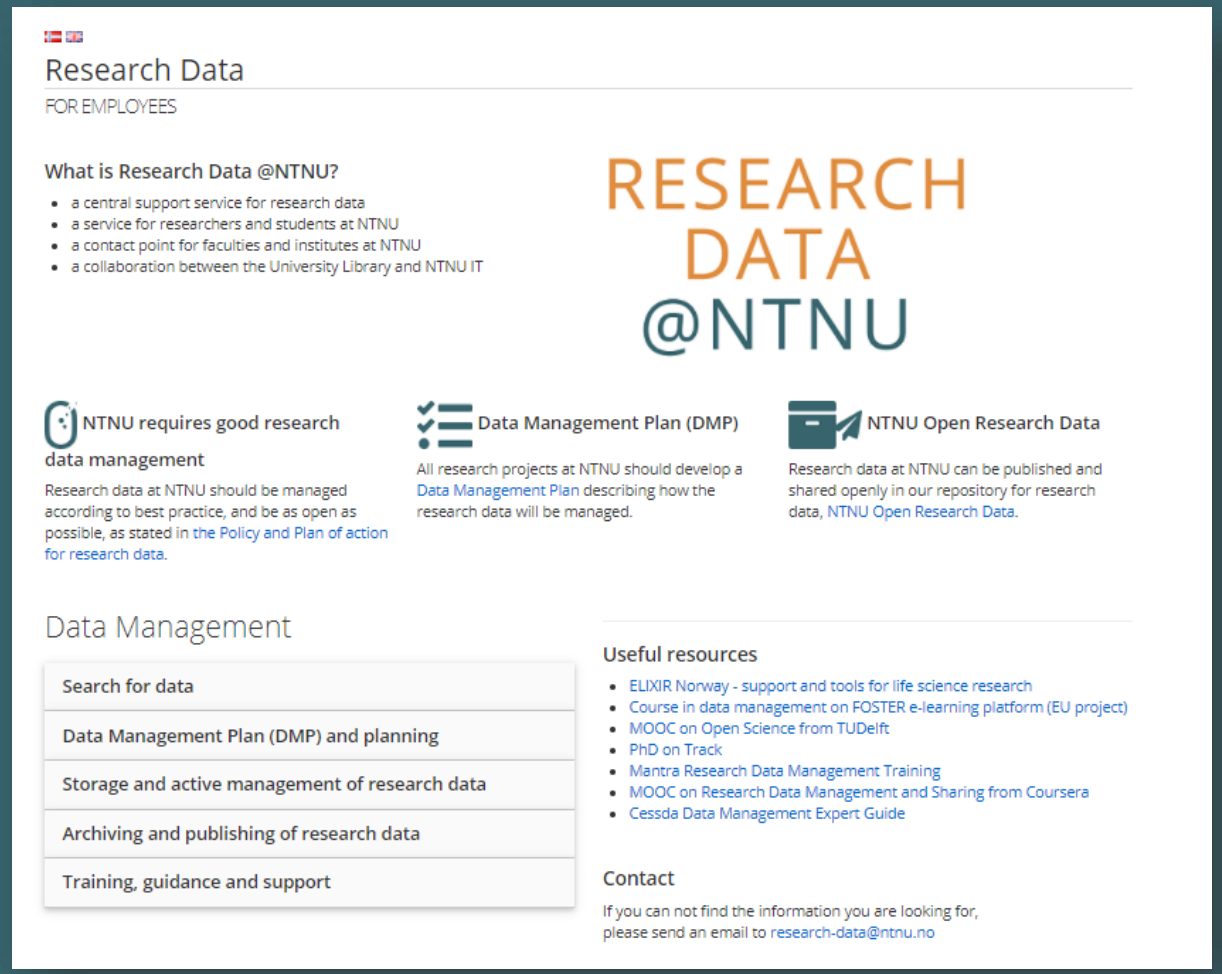
What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

- Consider the resources (personnel, money) necessary to manage and share the data
  - E.g. Extra storage costs?
- Many funders consider costs related to research data management as a legitimate addition to the project budget (including the EU and the RCN)
  - OpenAire Data Costing Tool

What to do with the plan?

- RCN: A preliminary DMP should be included in revised application, final version with the final project report.
- EU: a DMP needs to be submitted as a deliverable by month 6 (and for most projects, revised half-way through and at the end)
- Data management plans should be public, could for instance be published through Zenodo
- Use the plan as a tool and update as needed!

Support and gudiance: Research Data @NTNU



Research Data

FOR EMPLOYEES

What is Research Data @NTNU?

- a central support service for research data
- a service for researchers and students at NTNU
- a contact point for faculties and institutes at NTNU
- a collaboration between the University Library and NTNU IT

RESEARCH DATA @NTNU

NTNU requires good research data management

Research data at NTNU should be managed according to best practice, and be as open as possible, as stated in the Policy and Plan of action for research data.

Data Management Plan (DMP)

All research projects at NTNU should develop a Data Management Plan describing how the research data will be managed.

NTNU Open Research Data

Research data at NTNU can be published and shared openly in our repository for research data, NTNU Open Research Data.

Data Management

- Search for data
- Data Management Plan (DMP) and planning
- Storage and active management of research data
- Archiving and publishing of research data
- Training, guidance and support

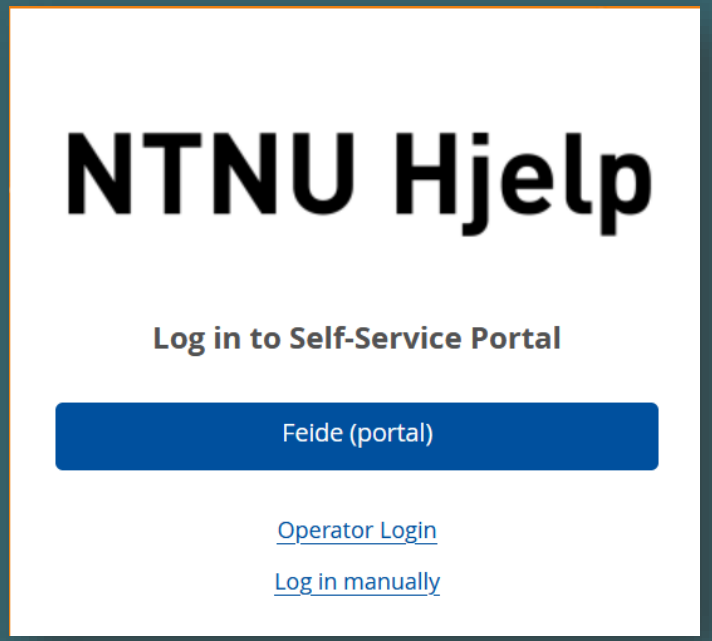
Useful resources

- ELIXIR Norway - support and tools for life science research
- Course in data management on FOSTER e-learning platform (EU project)
- MOOC on Open Science from TUDelft
- PhD on Track
- Mantra Research Data Management Training
- MOOC on Research Data Management and Sharing from Coursera
- Cessda Data Management Expert Guide

Contact

If you can not find the information you are looking for, please send an email to research-data@ntnu.no

- Contact us through NTNU Hjelp



NTNU Hjelp

Log in to Self-Service Portal

Feide (portal)

Operator Login

Log in manually

RESEARCH DATA @NTNU

Where can I store my **research data**?

Does NTNU offer a service for **automatic transcription**?

What **open science** requirements apply to my project?

Ask RESEARCH DATA@NTNU for advice!

Dragvoll Library
Wednesday 6 May
10:00-14:00

NTNU | University Library

NTNU | IT Division

Remember:

- Create a plan that is adapted to the scope of the project. A plan should be as simple as possible and as complex as necessary (Sikt)
- The first version of your DMP will likely not be complete. Update it as you go along and make it useful for your project!

- Useful links
  - NTNU DMP-wiki
  - Science Europe Practical Guide
  - EasyDMP Practical Guide
  - FAIR data principles (Force11)

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Thank you for your attention!

Your Feedback is Important to us!

https://nettskjema.no/a/446475