

Open Science at Aarhus University
Data management based on the FAIR principles

Version 2.0

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Version control

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1.0	2021-11-18	BCD		Draft for consideration by the research committee
1.1	2022-01-03	BCD	Strategic indicators, organisation - after the first meeting with Anne Marie Pahuus and Hans Erik Bøtker	Internal working paper
1.2	2022-01-14	BCD	The strategic indicators have been made more comprehensible, the summary has been updated, and so has the section about organisation following a review at a research committee meeting as well as after meetings with, and input from, Anne Marie Pahuus and Hans Erik Bøtker. Consistency changes have also been implemented.	New draft for vice-deans
1.3	2022-02-03	BCD	Following discussion with Niels Mejlgaard and Brian Vinter	Extract from the report with focus on data management
2.0	2022-06-29	BCD	Following input from Anne-Mette Hvas, coordination activities have been initiated by the OS Forum and with Terms of Reference. Following input from Niels Mejlgaard, the specific goals have been omitted and are to be agreed. Changes have been implemented in the document.	Draft for OS Forum meeting

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1 Background

As described in “Open Science at Aarhus University, Organisation”, digitalisation of data collection and the surrounding processes has provided new opportunities for research collaborations and forms the basis for the Open Science agenda, aiming at openness, consistency, and transparency in all phases of the research process.

The EU supports the Open Science agenda and considers access to research results as a strategic component in terms of increased competitiveness for industry in the EU. This will affect researchers at AU, as applications for different EU programmes must include a data management plan that describes plans for publication/sharing of articles and other components of research output in the form of data, methods, and computer codes in accordance with the FAIR principles (Findable, Accessible, Interoperable, Reusable). The elements in FAIR are illustrated below in Figure 1, copied from Australia¹.



Figure 1 Possible elements in making data FAIR.

That data is FAIR means that it can be found and potentially reused by other university researchers as well as developers and researchers in companies. This does not necessarily mean that data is freely available, but it is “As open as possible, as closed as necessary” and its existence is shared. Data management not only ensures that data and relevant process information are collected systematically and continuously so they can be published it also helps to ensure research integrity² via transparency throughout the research process.

Data-driven research, where results are not only based on own data, but also on other people's data, is gaining ground. For many years, astronomers successfully collaborated on the “virtual observatory” where

¹ From <https://www.andis.org.au/working-with-data/fairdata/training>

² In the instruction: “Management and storage of research data within all fields must be carried out in accordance with the current rules in order to ensure transparent and credible research”.

data from many physical observatories is gathered. The same applies to linguistics where researchers have based research on CLARIN VO³, which provides access to more than 1.2 million texts in different languages. Within particle physics, CERN has gathered more than two petabytes of open data⁴, which, together with a policy on sharing code and workflows, has helped to boost the field. Finally, metastudies are also gaining ground within health, and the whole movement regarding personalised medicine is based on data being available for analyses.

In a data-driven society, algorithms and data are becoming “gold”, and many argue that universities and researchers should retain the right to use their own data and not repeat the sins of the past by giving away all research to journals in the form of articles. In connection with review, and often also in connection with publication, many journals require that researchers submit or grant access to a secure and valid version of data and computer code. Access can often be via using a so-called persistent identifier, PID, instead of the researcher “giving away” data to the journal. Obtaining a PID requires that the data (and code) is secured against deletion and changes. This can be via a data publication repository. There are already several general (e.g. Zenodo) and subject-specific repositories, and the aim is to create a Danish repository under the auspices of DeiC. The point is to make sure that all researchers understand the importance and possibilities of preserving and controlling the use of their own data.

Moreover, note that a data-driven society will also make other demands on the competencies of new graduates, including their knowledge of, and experience with, correct management and work with data.

The “National strategy for research data management based on the FAIR principles” recently published by the Danish Ministry of Higher Education and Science⁵ is based on the same observation. The strategy is part of the implementation of the [EU Open Data Directive](#) with Danish implementation of the Directive via the PSI Act. The Act will help meet research’s and society’s expectations for more availability of publicly funded research. The strategy identifies initiatives to ensure that Danish research remains an integral part of the international data ecosystem by, among others, sharing data and integrating with the European Open Science Cloud (EOSC). The national strategy operates with several principles and their implementation with associated stakeholders. The strategy identifies the need for both a technical and a support infrastructure to assist researchers in all phases of the research process. Appendix 1 includes all items that require action from the university – either in the form of deliverables or activities that the university should consider. The Danish Agency for Higher Education and Science has also appointed an advisory group⁶ whose terms of reference identifies 13 items on which universities are expected to work together to deliver results. The 13 items are in Appendix 2.

In terms of research, more focus on management of data throughout the lifecycle will ensure:

³ See <https://vlo.clarin.eu/?1>

⁴ See: <https://home.cern/news/press-release/knowledge-sharing/cern-announces-new-open-data-policy-support-open-science>

⁵ <https://www.deic.dk/data-management/nationalt-samarbejde/ny-national-strategi-fair-data-management>. AU's consultation response was discussed at the management meeting on 27 January 2021

⁶ <https://ufm.dk/aktuelt/nyheder/2021/uddannelses-og-forskningsstyrelsen-nedsaetter-en-folgegruppe-der-skal-fa-ny-national-strategi-for-forskningsdata-til-at-blive-til-virkelighed>

- **Transparency and credibility** via open access to research data and publications
- **Accountability and reproducibility** of research results

Finally, there is the *Ministerial Order on the notification of digital research data created by government agencies* issued by the Danish National Archives.⁷ Recently, several tests have been carried out regarding registration and submission from research groups. These tests have shown: that the processes can be simplified by practising good data management during the project; that it can be very time-consuming to complete a submission and, finally; that the universities themselves may be required to⁸ preserve data in (international) formats which the Danish National Archives cannot manage. For some researchers, this will be an advantage, as they run an open access data repository, but there may be challenges with funding at the end of the project portfolio. For others, problems will arise if the researchers have not planned storage/preservation for more than the five years stipulated in the Code of Conduct. In any case, it raises an interesting issue concerning funding of data repositories developed by the research group, which are currently preserved following a provision from the Danish National Archives.

It is therefore a good idea to implement AU's own digitalisation strategy which states: "*Aarhus University will support the university's research and teaching programmes by providing the technology and knowledge necessary to ensure compliance with applicable requirements – including external demands in relation to public-sector consultancy – regarding access to data, data sharing and data protection in relation to research (research data management and open access).*" (quote from the digitalisation strategy)

In the associated roadmap,⁹ this is specified as: *According to the digitalisation strategy, digital support for research must take place in a way which allows researchers the freedom and supported access to select IT solutions in all phases of their research, within a framework which enables the university to maintain a sufficient degree of protection and security in data processing (data management).* In relation to this roadmap, the last of three activities is still pending: *Preparation and implementation of a five-year data management plan.* This memo provides a plan for the implementation and outlines how it can be actioned.

The memo focuses primarily on data, but many of the arguments will also cover e.g. methods and codes. It sets out several strategic goals and proposes an organisation that can ensure their implementation. It was written on the assumption that the decision to establish a relevant technical infrastructure will be carried out. This infrastructure will ensure that AU complies with the Danish Code of Conduct for Research Integrity¹⁰, which states: *Institutions are responsible for providing secure data storage facilities that are consistent with confidentiality requirements and applicable regulations and guidelines, e.g. on the processing of personal data.*

⁷ <https://www.retsinformation.dk/eli/ta/2020/514>

⁸ The preservation provision states "until the Danish National Archives can manage..." and "if deletion is requested, the Danish National Archives must be notified at least six months in advance)

⁹ https://medarbejdere.au.dk/fileadmin/www.medarbejdere.au.dk/Strategi_og_ledelse/samlet_roadmap_for_digitalisering_2018-2020_v5.pdf

¹⁰ <https://ufm.dk/en/publications/2014/the-danish-code-of-conduct-for-research-integrity>

2 Strategic goals

The following strategic goals address researchers' practice in relation to data and ensuring that AU provides the necessary assistance.

All researchers at AU:

1. Consider the FAIR principles for data as well as for other research outputs such as codes and methods
2. Integrate data management into research processes, ensuring the transparency and integrity of research results
3. Contribute to good practice and clear standards for managing data and metadata throughout the entire research lifecycle, including data collection, curation and storage both during and after completion of projects, including choice of licenses and use of persistent identifiers

Aarhus University supports these goals by ensuring that:

- A. The necessary technical infrastructure is available
- B. The necessary expertise is available, and courses and continuing education programmes are offered at relevant levels (including PhD)
- C. Work to share data and other relevant outputs is recognised as research-relevant activities
- D. Criteria are defined for the value of data in relation to reusability and long-term storage, and a strategy is formulated for the long-term preservation of data which has not been submitted to the Danish National Archives in its entirety

AU will make a basic knowledge and technical infrastructure available in relation to A and B. Advanced use is to be financed through projects.

Efforts must be made to ensure that AU complies with national and international development trends and standards in the Open Science area in general and for data management in particular.

To meet strategic goals 1-3 above, it is important to establish technical infrastructure as well as to work on information, competency development and ongoing dialogue with researchers about opportunities and perspectives in sharing and publishing data, for example. The aim is not for all researchers to publish their data and/or metadata, but for all researchers to have taken an informed and critical stance to publication-related decisions. In addition to focusing on what can be shared with others, all researchers must view good data management as an integral part of the research process – both regarding transparency in research and to ensure that the necessary information, e.g. in connection with publication of data, is created on an ongoing basis. Furthermore, interested research groups should participate in academically oriented national and international projects aimed at defining good practices and identifying relevant standards for metadata, ontologies, identifiers, etc. across institutions. This is directly linked to the EU strategy for the Open Science Cloud and the strategy of the Danish Ministry of Higher Education and Science, both of which focus on ensuring that data is as FAIR as possible.

A prerequisite for successful completion of the strategic items is that the Open Science agenda is anchored at management level. Management must ensure that the necessary resources are released to ensure the implementation of strategic items A-D. This means that, in addition to securing the technical infrastructure and establishing a relevant support infrastructure, management takes responsibility both regarding meriting and regarding helping and supporting researchers to define practices and create environments in which it is possible to experiment with various aspects of Open Science.

It is to be decided how the Open Science Forum will ensure monitoring of how the roll-out of the national strategy is measured at AU.

3 Activities

One or more Open Science centres will be set up at the faculties. Whether they are called Open Science or something else is less important; it is essential that researchers have a well-defined local contact point in parallel to the central contact point.

AU IT will continue to establish and disseminate ERDA/SIF in the established project organisation.

A data management coordination group will be set up to ensure knowledge sharing and coordination (where relevant) of decentralised activities in relation to items A and B in the strategic goals:

- A. The necessary technical infrastructure is available
- B. The necessary expertise is available, and courses and continuing education programmes are offered at relevant levels (including PhD)

The objective of the coordination group is therefore to ensure that joint solutions are established at operational level, where relevant and appropriate. Moreover, the group is to coordinate initiatives so that the different centres can draw on each other's expertise, share support tasks and reuse each other's solutions.

The coordination group will work together with a centrally anchored **Single Point of Contact, SPOC**, to secure a place where researchers can ask any questions relating to data management.

The Terms of Reference for the Data Management Coordination Group are in Appendix 3.

4 Costs

Naturally, there is a correlation between AU's level of ambition and the costs. Below is a proposal for three levels of ambition for the centralised as well as the decentralised part of AU's efforts within research data management – both for the central element and for the faculty-level element.

Based on experience from BCD's round of interviews in summer 2020, AU currently employs 10-15 staff who fully or partially support data management and a larger number who actively work with various aspects of Open Science. Several of these perform specialist tasks and will not immediately be able to join a shared pool of resources. However, everyone will be able to contribute to building a better understanding of what good data management practice is all about, and to establishing this. Moreover, negotiations should commence with the Royal Danish Library about using 6-10 FTEs for the data management task.

4.1 Central organisation

Low: An Open Science coordinator with overall responsibility is appointed, and so is a manager of the SPOC to ensure implementation of relevant processes. An agreement is made with the AU Library/Royal Danish Library about reallocation of their resources so that they can also be a driving force for faculty anchoring and work with Research IT to handle operation of the technical infrastructure. The Open Science coordinator is AU's contact to national and international organisations and works closely with the manager of the SPOC. The SPOC ensures that enquiries are dealt with and functions as the front office in relation to DeiC. The OS coordinator ensures that relevant topics such as teaching and information campaigns are included in meetings held by the Data Management Coordination Group. Communication takes place at regular intervals via the university newsletter and through the faculties' communication departments. AU IT supports work to ensure that the basic systems function.

The OS coordinator is the chairperson of the Data Management Coordination Group and participates in the OS Forum and has overall responsibility for putting relevant issues on the agenda.

Medium: This is an extension of the low level. An OS function is established with two to three FTEs, of which at least one is a technical full-time person plus the Open Science coordinator. Contact with the outside world is via the OS function. The function has the resources to work on defining local/DeiC services and to participate at a minimum level in international forums such as the RDA. There are also resources for limited participation in connection to the EOSC. Teaching is coordinated and efforts are made to identify and possibly develop relevant teaching modules. Members of the OS function participate in teaching and in competency development in general. At this level of ambition, it would make sense for the AU Library/Royal Danish Library to play a more active role in publication options and when entering into agreements with data journals.

High: This is an extension of "medium", so that an OS office is established with four to six FTEs, of which at least two are full-time (a technical and a data steward/communicative profile) in addition to the Open Science coordinator. The remaining one to three FTEs could be key persons from the faculties or IT who are

temporarily linked to the OS office in full or in part. Contact with the outside world is via the OS office. The OS office also has the resources to work with the definition of local/DeiC services and for active participation in international forums such as the RDA. There are also resources for participation in the EOSC. Can participate actively in competency development. Members of the OS office participate in teaching and in competency development in general. Members of the OS office may be “loaned out” to the faculties in connection with projects.

4.2 Anchoring at faculty level

The faculties establish a well-defined entry point to their Open Science support. This may be a newly established support centre or an existing one that already serves a supporting role for researchers. As already mentioned, there will be a need to draw on a range of different competencies. As with the staffing of the central function, there are different levels of ambition:

Low: The tasks in the OS support centre are primarily handled by the AU Library/Royal Danish Library through reprioritisation of their resources – in close dialogue with the data managers who are already active. All faculties already have dedicated data managers or researchers working with data management. These people will be involved as specialists both in relation to teaching and support. A specialist and an AU Library employee/a Royal Danish Library employee from each faculty participate in the coordination committee. AU Library/Royal Danish Library are expected to be the driving force. Communication to employees is largely prepared centrally, but with the decentralised communication departments as senders.

In this scenario, the AU Library/Royal Danish Library are the researcher’s natural sparring partner in relation to data management, including in particular on how to make data FAIR.

Medium: Each faculty has two to four FTEs working with different aspects, including identifying missing services, supporting relevant publishing, participating in national and international projects, etc. Communication with employees is decentralised, but with clear central coordination. The AU Library/Royal Danish Library participate actively as generalists and play an important role in data management plans and publication assistance, for example. The AU Library/Royal Danish Library participate by reprioritising their resources.

At this level, the faculty serves as the researcher’s sparring partner in relation to data management. At some faculties, this function can be incorporated with advice about IT, including HPC.

High: The faculties have established the SPOC as an Open Science office with representation of all relevant competencies (IT support, GDPR, security, structures, ontologies, persistent identifiers, etc.) and with resources to ensure national and international anchoring through participation in relevant projects. Communication with employees is primarily decentralised, but with clear central coordination.

The faculties thereby signal that Open Science is important by reprioritising and bringing together all relevant competencies so that they can easily assist in all aspects of data management. At some faculties, the Open Science office could be incorporated with advice on computing, including HPC, and guidance on other aspects of Open Science, e.g. Citizen Science.

5 Recommendations

Implementation will be an iterative process, and it is important to continuously evaluate whether the initiatives launched are working and whether others are missing. Work with data management is generally closely linked to implementation of a technical platform to support storage and publication of data. A joint storage system is expected to be operational in Q3 2022.

It is recommended that:

- As a minimum, the low level of ambition for the central organisation be established. This will make it possible to initiate knowledge sharing and establish several courses and/or workshops and start up “train the trainer” workshops.
- OS centres at the faculties be established at medium level with a view to handling data management and, if necessary, other tasks such as HPC. Each faculty is to identify a person responsible for the area with time allocated to participate in joint activities across AU.
- A roadmap be prepared with focus on activities in 2022-2023.
- Relevant information activities be initiated – at both university and faculty/department level.

It is recommended that:

- AU, in collaboration with other universities, play an active role in relation to infrastructure activities under the auspices of DeiC and internationally.

Furthermore, it is recommended that:

- AU establish a unit under AU IT, Research IT, which is responsible for operating and developing storage facilities and related computer facilities, and which, in collaboration with other universities, can play an active role as a provider of DeiC solutions in relation to storage facilities and services associated with data management and HPC. It would be possible to finance 50% via DeiC.
- Researchers be supported and encouraged to participate in national and international projects aimed at establishing best practice for the implementation of Open Science.
- AU participate in the dialogue about accreditation and about preparation of a policy on preservation-worthy data.
- It be ensured that PhDs are introduced to good data management practice and acquire knowledge about FAIR data as part of their PhD programme.

6 Appendix 1: Extracts from the national strategy

Below are the activities in which, as a research institution, AU has a role/obligation, extracted from the strategy document. The texts included have not been edited in any way.

6.1 AU is expected to address the following areas:

Focus area	Expectations of the university
FAIR data management is a change of practice in many academic fields	<ul style="list-style-type: none"> • Strengthening of communication and dialogue on FAIR data management. • Start-up of a process focused on making more research outputs credit-bearing and ensuring recognition of data management with a view to FAIR. This must be done at a national level with the involvement of international initiatives. The credit transfer should take into account differences in research areas.
Expert groups are supported in defining their own implementation of FAIR principles	<p>The research institutions must ensure that descriptions of good data management practices are prepared in different academic fields, preferably based on international practice. As a minimum, these must contain a description of how metadata can be collected as an integral part of the work process. This may entail:</p> <ul style="list-style-type: none"> • Preparation of short-term goals for making data accessible and sharing data, for example based on methods regarding maturity models¹¹. • Helping expert groups identify, develop, and/or publish standards, methods, tools, and infrastructure to make their data FAIR which are based on, or at least interact with, international solutions. • Working with data management practices for a selection of data and with methods for quality assurance of data and metadata. • Preparing principles for correct (re-)use of data.
Support research requirements for documentation throughout the research process	<ul style="list-style-type: none"> • Recommendations must be prepared within the academic fields for methods to ensure continuous documentation of research data in line with the data being collected and generated, so that all necessary information is present when results are to be made accessible.
Establishing a knowledge infrastructure that provides help and knowledge resources for data management and FAIR	<ul style="list-style-type: none"> • The research institutions support building up local data stewardship support for assistance of the institutions' researchers. • Relevant continuing education and training in FAIR, data management, and data stewardship must be developed and offered to researchers and data stewards at relevant academic and professional levels. • Knowledge of data management and the FAIR principles must be made available at relevant stages of the researchers' study programmes, for example in the PhD schools.

¹¹ E.g. the CMMI Institute's *Data Management Maturity (DMM)*, (<https://cmmiinstitute.com/data-management-maturity>) or the RDA's FAIR Data Maturity Model: <https://www.rd-alliance.org/group/fair-data-maturity-model-wg/outcomes/fair-data-maturity-model-specification-and-guidelines-0>.

6.2 AU is expected to be able to act in relation to a national (DeiC) and international agenda

Focus area	Expectations of the universities – and DeiC
Supporting preservation of research data in both the short term and the long term	<ul style="list-style-type: none"> • Collaboration, also with international players, on the development of methods and infrastructure for short-term and long-term preservation of research data adapted to research requirements for diversity in research output and file types, as well as scaling in relation to data volumes. • Collaboration on defining criteria for the value of data in terms of reusability and long-term preservation.
Support research requirements for documentation throughout the research process	<ul style="list-style-type: none"> • A discussion on risk management in connection with FAIR data should be stimulated and facilitated at national level. Examples of risk factors are confidentiality, copyright, other intellectual property law regulation, dual use, GDPR and national security interests. • Institutional guidelines for the use of data licences must be drawn up and disseminated, possibly in national cooperation, primarily based on international standards.
Establishment of technical infrastructure that supports data management and accessibility of FAIR data (DeiC and the universities)	<p>Specifying and constructing national parts of the technical infrastructure:</p> <ul style="list-style-type: none"> • Establishing a generally accessible nationally trusted data repository where researchers can store and expose metadata and data, as well as attach persistent identifiers (PID) and licence. • Specifying and offering components nationally that are demanded by the researchers, for example PID systems, ontology databases and other components that can facilitate the work with making data FAIR. • Extending the national service for data management plans with academically customized templates as well as adaptations that can make data management plans usable in connection with registration in the Danish National Archives. • Ensuring that recommended services and infrastructures are certified in accordance with international standards as required, and that governance and policies underpin correct management of access to data even after researchers have left the institution. Establish a generally accessible, nationally trusted data repository where researchers can store and expose metadata and data as well as attach persistent identifiers (PID) and licenses.
Establishing a knowledge infrastructure that provides help and knowledge resources for data management and FAIR	<p>Coordination and collaboration are established across the research institutions on the provision of data stewardship service where this is beneficial based on, for example, a resource consideration, including for large-scale interdisciplinary projects. Major national actions and initiatives are coordinated under DeiC.</p>

7 Appendix 2: Focus areas of the national advisory group.

The advisory group will draw up an action plan that addresses initiatives requiring special national coordination, and will particularly address the following proposed specific initiatives by coordinating work to:

1. Get specialist groups across research institutions to define their own implementation of the FAIR principles.
2. Develop methods and infrastructure for long-term preservation of research data adapted to the needs of research for diversity in object and file types, as well as scaling in relation to data volumes.
3. Collaborate on defining criteria for the value of data in relation to reusability and long-term storage.
4. Within the fields of study, draw up recommendations for methods that ensure continuous documentation of research data as they are collected and generated, so that all necessary information is available when results are to be made accessible.
5. Prepare and disseminate institutional guidelines for the use of data licences primarily based on international standards.
6. Expand the national service for data management plans with subject-specific templates as well as adjustments that can make data management plans usable in connection with registration at the Danish National Archives.
7. Make sure that recommended services and infrastructure are certified in accordance with international standards to the extent necessary, and that governance and policies ensure correct administration of access to data, even after the researchers have left the institution.
8. Establish coordination and collaboration across research institutions on the provision of a data stewardship researcher support function, where this is beneficial on the grounds of, for example, resources for major cross-disciplinary projects. Major national initiatives are coordinated under DeiC.
9. Develop relevant continuing education in FAIR, data management and data stewardship offered to researchers and data stewards at relevant academic levels.
10. Make knowledge of data management and the FAIR principles available at the relevant stages of researchers' education, e.g. at the PhD schools.
11. Draw up a list of expenses related to FAIR data management (software, storage space, FTEs) which is updated on an ongoing basis. The list is indicative and can be used by foundations and universities as a basis for drawing up and evaluating budgets. The list is prepared by a committee with representatives from Universities Denmark and the research foundations.
12. Collaborate across institutions on security with a view to safeguarding Danish research data against unwanted sharing with third parties who themselves do not live up to the basic values of open data.
13. Describe issues regarding GDPR rules with a view to discussing how sharing research data across institutions and national borders is as flexible and agile as possible. This work can await the new guidelines from the Danish Data Protection Agency with an interpretation of the GDPR rules within the research area.

8 Appendix 3: Terms of Reference for the Data Management Coordination Group

Terms of Reference for the Data Management Coordination Group Version 2.1

1. Objective

The Open Science (OS) Forum aims to strengthen collaboration between data management initiatives anchored at faculties and departments to ensure that researchers at AU can meet national and international requirements/expectations in relation to good data management practice, including publishing Findable, Accessible, Interoperable, and Reusable (FAIR) data.

The objective of the Data Management Coordination Group is to ensure knowledge sharing and coordination (where relevant) of decentralised activities in relation to items A and B in the strategic goals set by the management:

- A. The necessary technical infrastructure is available
- B. The necessary expertise is available, and courses and continuing education programmes are offered at relevant levels (including PhD)

The objective of the coordination group is therefore to ensure that joint solutions are established at operational level, where relevant and appropriate. Moreover, the group is to coordinate initiatives so that the different centres can draw on each other's expertise, share support tasks and reuse each other's solutions.

Members of the coordination group must be informed about initiatives at the other faculties and ensure that employees in the decentralised support units have an overview of where different types of expertise are anchored so that they can ensure that enquiries regarding processing of data are addressed at the right place in relation to questions about agreements, rights, process, analysis, publication and archiving, and so that they can ensure that data and associated metadata are made FAIR (FAIRification).

2. Tasks

The Data Management Coordination Group is to ensure coordination and a joint approach to a number of specific initiatives, including:

- Use of ERDA and SIF
- Foundations and EU requirements in relation to FAIR

- Data Management Plan (DMP) templates and best practice
- Guidance on tools for ongoing documentation of research projects (e.g. e-lab books)
- All elements in FAIR, including Persistent Identifiers, machine readable metadata and licenses
- Publishing platforms – pros and cons
- Information campaigns (preferably a round of visits to departments regarding FAIR and ERDA/SIF)
- Courses

It is not a goal that everyone should know everything, but it is important that people know about concepts and where to get help.

The Data Management Coordination Group will work with initiatives to ensure that the entire support infrastructure can function as a unified whole. This means, for example:

- A joint solution for managing enquiries, either by a joint system or by means of well-documented methods to exchange information (Application Programming Interfaces (APIs))
- Coordination/joint methods to document both collection and further processing of data – where relevant
- Coordination/knowledge sharing of how data and metadata are published (including the use of licences and standards for data as well as metadata)

The Data Management Coordination Group can also provide input for relevant new initiatives.

3. Composition

The Data Management Coordination Group has the following members:

- Open Science coordinator
- A technical/support person from each faculty
- Employee from the Royal Danish Library
- Systems manager or project manager for ERDA/SIF

System coordination in relation to ERDA/SIF and the link to DeiC are anchored in the central Open Science support function and are therefore not explicitly mentioned.

In addition, other competencies can be called in on an ongoing basis, such as:

- Law (GDPR)
- IT security
- FAIR

4. Operating procedures

The Data Management Coordination Group will be set up for a period of three years. The need for continuing the coordination group will be evaluated after three years, and possible amendments to the Terms of Reference.

The frequency of meetings will depend on tasks pending. Meetings are expected to be held every month during autumn 2022 in connection with the roll-out of ERDA/SIF and in connection with information campaigns about FAIR and the possibilities of ERDA/SIF.

The OS coordinator is responsible for preparing an annual report for the forum.

5. Administrative support

The Data Management Coordination Group is serviced by the central Open Science Support function, which is organisationally anchored in AU Research.