eosc | FAIR-IMPACT
Expanding FAIR solutions across EOSC

FAIR Implementation Workshop : Supporting FAIR adoption at the national level: Denmark

Funded by the European Union

Expanding FAIR Solutions across Europe

Call HORIZON-INFRA-2021-EOSC-01-05

Enabling discovery and interoperability of federated research objects across scientific communities

Expanding FAIR solutions in Europe

Partly following up on FAIRsFAIR

EU funded project

Coordination and Support Action

10 million euro

36 months, starting 1 June 2022

28 partners and affiliate entities

From 10 EU member states: NL, FI, FR, DK, IT, DE, ES, NO, BE, RO

and the UK

FAIR-IMPACT overall objective

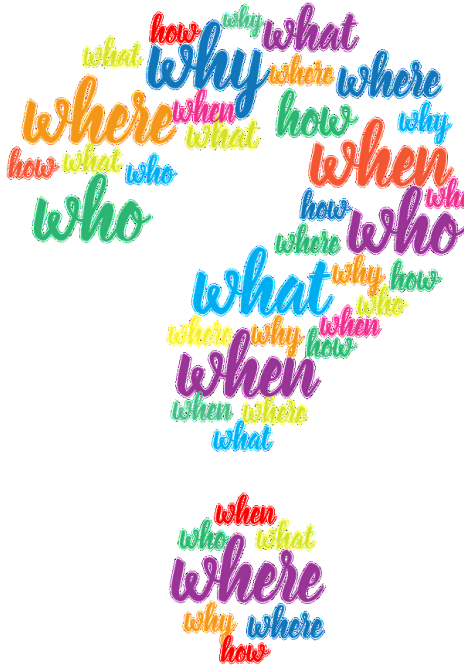
WHAT:
to realise a FAIR EOSC by supporting the implementation of FAIR-enabling practices across scientific communities and research outputs at a European, national, and institutional level;

HOW:

- identifying current and emerging components for enabling FAIR (practices, policies, tools & technical specifications);
- translating viable solutions, guidelines and frameworks that have been developed for one domain or research output and supporting their application in others;
- taking the next step in implementation by defining the support, governance, and coordination mechanisms required to ensure the continuous function of FAIR-

Overview of session

- The Danish strategy - process and timeline, John Renner Hansen, Professor, Niels Bohr Institute, UCPH, Chairperson for the Danish national FAIR strategy
- Strategic Motivation - the Danish Ministry of Higher Education and Science, Bjarke Stolze Kaspersen, Special Consultant, The Ministry Higher Education and Science
- The 17 action areas: what, why and how, Anne Sofie Fink Kjelgaard, of
  DeiC's data management team
- Status and hopes for the future, Professor John Renner Hansen, Nie Bohr Institute, UCPH, Chairperson for the Danish national FAIR strc
- Discussion and questions, All
- Wrap up, Suzanne Dumouchel, Task lead in work package two, FAIR Impact



But first, a bit about you!

Please go to menti.com and enter code **3129-4253**

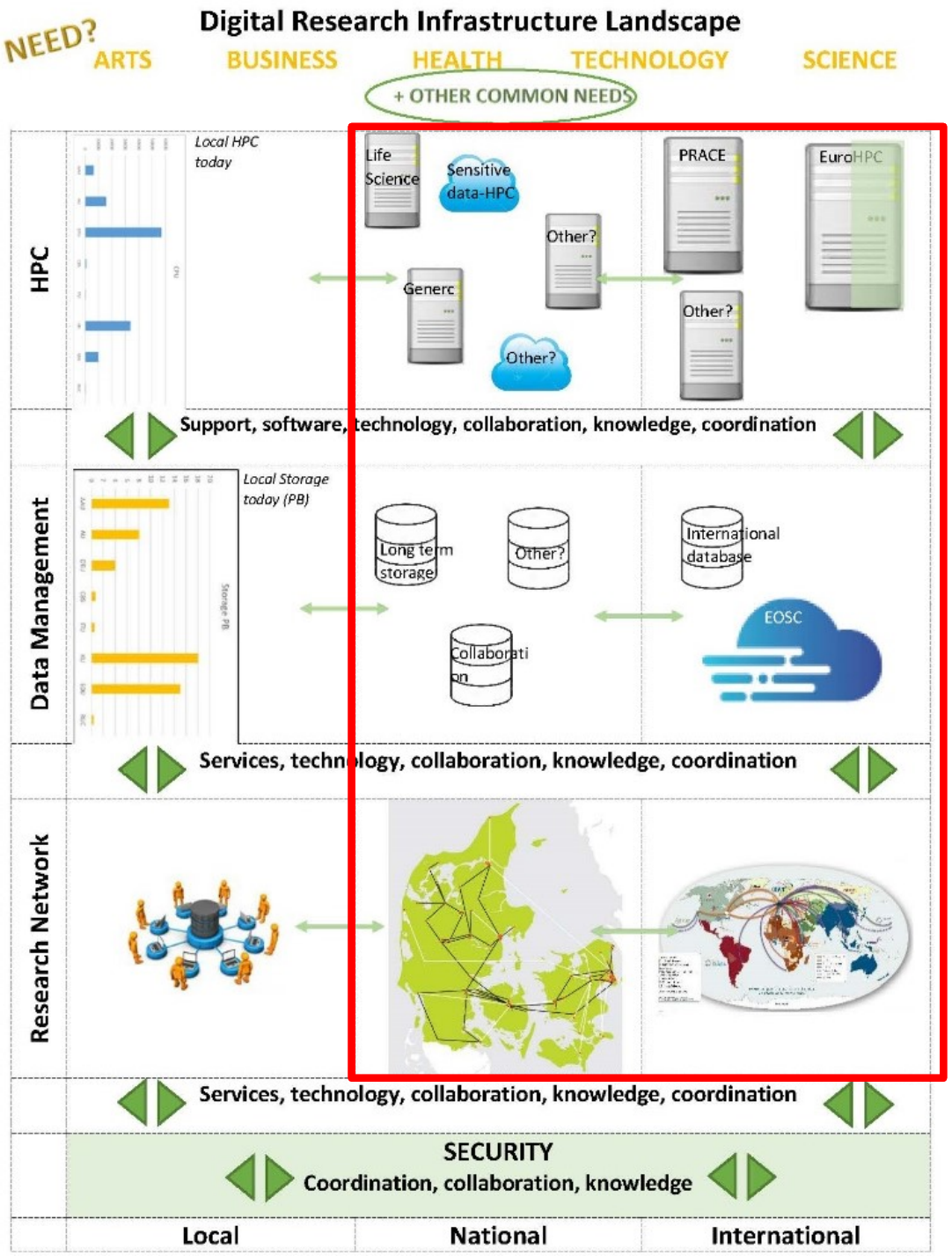
Supporting FAIR adoption at the national level: Denmark

The Danish strategy - process and timeline

FAIR Impact webinar – 11th October 2023

Chairman of the DeiC's board
Professor John Renner Hansen at Niels Bohr Institute/University of Copenhagen

IT-UNIVERSITETET I KØBENHAVN


Digital Research Infrastructure Landscape
NEED?
ARTS
BUSINESS
HEALTH
TECHNOLOGY
SCIENCE
+ OTHER COMMON NEEDS
HPC
Local HPC today
Life Science
Sensitive data-HPC
Other?
Generc
Other?
PRACE
Other?
EuroHPC
Support, software, technology, collaboration, knowledge, coordination
Data Management
Local Storage today (PB)
Long term storage
Other?
International database
Collaborati on
EOSC
Services, technology, collaboration, knowledge, coordination
Research Network
Services, technology, collaboration, knowledge, coordination
SECURITY
Coordination, collaboration, knowledge
Local
National
International

Article 10

Research data

1. Member States shall support the availability of research data by adopting national policies and relevant actions aiming at making publicly funded research data openly available ('open access policies'), following the principle of 'open by default' and compatible with the FAIR principles. In that context, concerns relating to intellectual property rights, personal data protection and confidentiality, security and legitimate commercial interests, shall be taken into account in accordance with the principle of 'as open as possible, as closed as necessary'. Those open access policies shall be addressed to research performing organisations and research funding organisations.

2. Without prejudice to point (c) of Article 1(2), research data shall be re-usable for commercial or non-commercial purposes in accordance with Chapters III and IV, insofar as they are publicly funded and researchers, research performing organisations or research funding organisations have already made them publicly available through an institutional or subject-based repository. In that context, legitimate commercial interests, knowledge transfer activities and pre-existing intellectual property rights shall be taken into account.

DeiC har her haft en central rolle i forhold til koordinere politikker og principper på data management-området. DeiC og Danmarks Elektroniske Fag- og Forskningsbibliotek formulerede i 2014 i fællesskab en national Data Management Strategi for at fremme og koordinere arbejdet på data management-området. Der blev samtidig oprettet et nationalt Data Management Forum, hvis formål er at være i dialog med de aktører, der understøtter forskernes data management-arbejde. De nationale midler til data management-området fra DeiC og Danmarks Elektroniske Fag- og Forskningsbibliotek udløber ved udgangen af 2018.

Desuden er der under Rigsarkivet et særligt initiativ kaldet Rigsarkivet Sundhed, som er etableret med henblik på at sikre indsamling, bevaring og formidling af forskningsdata inden for sundhedsområdet.

På det europæiske niveau har Europa-Kommissionen har taget initiativ til etableringen af European Open Science Cloud, hvor ambitionen er at tilvejebringe et åbent og sikkert virtuelt miljø for Europas forskere og andre til at lagre, finde, tilgå og genbruge data efter de såkaldte FAIR-principper. Europa-Kommissionen har foreløbigt øremærket omkring 1,4 milliarder kroner til formålet. European Open Science Cloud stiller store krav til, hvordan data beskrives og lagres, og forudsætter en væsentlig grad af koordinering både på nationalt og europæisk plan. Der stilles desuden i dag krav om, at forskning finansieret via det nuværende rammeprogram for forskning og innovation, Horizon 2020, som standard skal stille forskningsdata til rådighed for genbrug af andre forskere. Kravet forventes videreført i det kommende rammeprogram, Horizon Europe.

Det nationale samarbejde skal

Bidrage til en national strategi baseret på FAIR-principperne
Der er pt. ingen FAIR-politik i Danmark, og set i lyset heraf fremstår de lokale danske anstrengelser som relativt ukoordinerede. Det er ligeledes indtrykket, at universiteterne og øvrige relevante aktører har meget forskellige udgangspunkter og modenhed i forhold data management generelt og i særdeleshed i forhold til FAIR-principperne. En national, koordinerende strategi vil både understøtte det danske kodeks for integritet i forskningen fra 2014 og vil sætte samlet retning på FAIR i Danmark. Det nye nationale samarbejde skal have en væsentlig rolle i dette arbejde, i et tæt samarbejde med en bred skare af interessenter såsom, Uddannelses- og Forskningsministeriet, universiteterne, sektorforskningsinstitutioner, bevaringsinstitutioner, Danmarks Elektroniske Fag- og Forskningsbibliotek, offentlige og private fonde og andre ministerier (for eksempel Erhvervsministeriet og Sundheds- og Ældreministeriet).

Styrke lokal og national lagringskapacitet
Behovsanalysen udtrykker et klart behov for øget lagringskapacitet, samt styrket koordinering, herunder behov for bedre mulighed for at arbejde og dele data på tværs af datalagre nationalt og internationalt. Hvorvidt data lagres lokalt eller nationalt er mindre vigtigt. Det vigtigste er, at data lagres i en koordineret og sammenhængende løsning, hvor data kan tilgås på tværs af organisatoriske og tekniske løsninger. Det foreslås herunder, at der indgås dialog med private kommercielle datacentre i Danmark med henblik på afdækning af synergimuligheder.

The national cooperation (new DeiC) must Contribute to a national strategy based on the FAIR principles.

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A national, coordinating strategy will both support the Danish Code of Integrity in research from 2014 and will set overall direction for FAIR in Denmark. The new national collaboration must have a significant role in this work, in close collaboration with a wide range of stakeholders such as the Ministry of Education and Research, universities, sector research institutions, conservation institutions, Denmark's Electronic and Research Library, public and private foundations and other ministries (for example The Ministry of Business and the Ministry of Health and the Elderly).

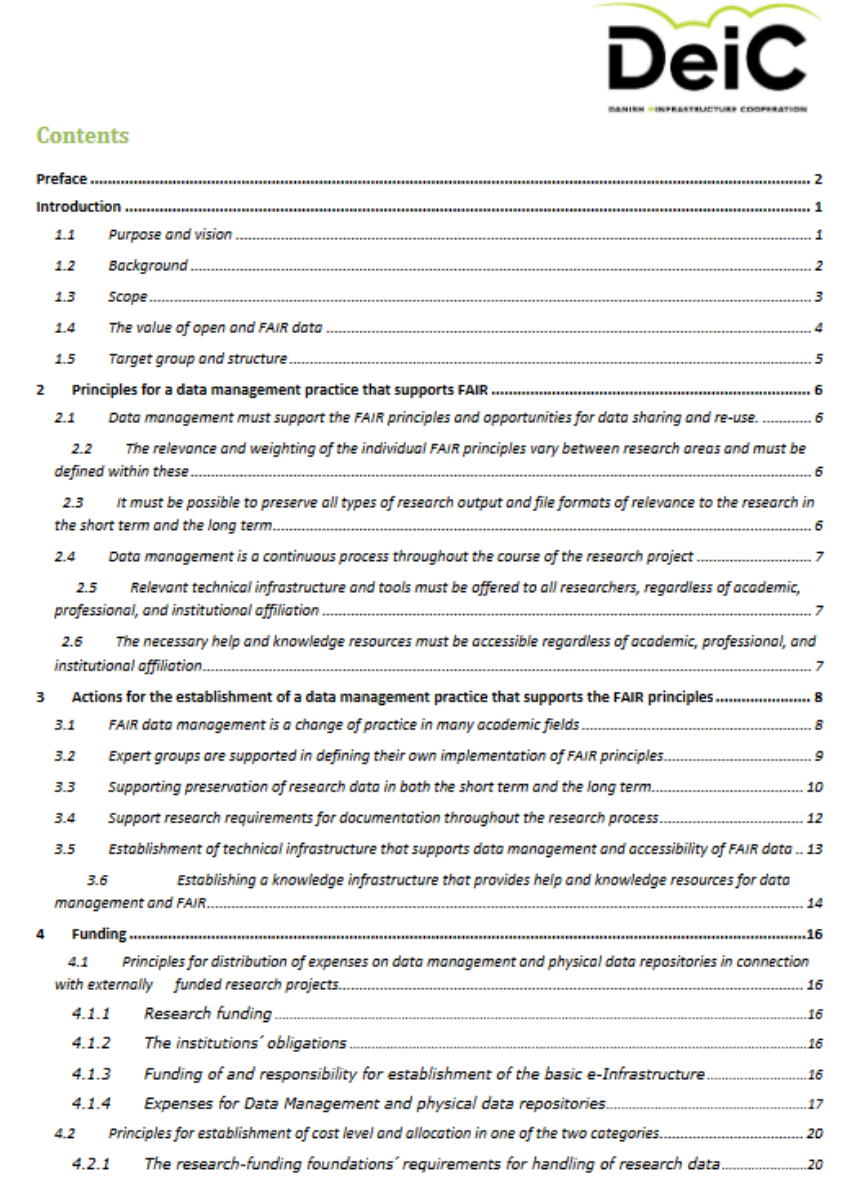
DeiC was formally asked i 2020 to lead the process towards a Danish strategy for FAIR data management.

The strategy is considered the Danish policy with respect to article 10

The national strategy for data management based on the FAIR principles

- The strategy was accepted by the Ministry for Higher Education a Research October 2021. It contains 3 main themes:
  - Principles for data management that supports FAIR
  - Efforts to establish a data management practice that supports the FAIR principles
  - Financing FAIR activities

- The Agency (UFS) established a reference group
  Term of reference defines 13 + 1 focus areas to be addressed by working groups.



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Next presentation:
Strategic Motivation - the Danish Ministry of Higher Education and Science,

Bjarke Stolze Kaspersen, Special Consultant, The Ministry of Higher Education and Science

Ministry of Higher Education and Science Denmark

Strategic motivation and focus areas

Bjarke Stoltze Kaspersen – Special Advisor, PhD

Danish Agency for Higher Education and Science

Outline

- Background:
  - Open Data Directive
  - A national strategic plan
- The EOSC link
- A variety of cases
  - The Danish participation in international research infrastructures
  - Danish National Partnership for Health data

The national Danish FAIR strategy

- Danish implementation of the Open Data Directive. A national policy for FAIR* data management.
- The national strategy was launched in 2021.
- Important aspect of motivation is a growing awareness of the potential benefits of FAIR data management for research and society:
  Examples:
  Healthcare and Life science, green transition, research infrastructures etc.

*__F__indable, __A__ccessible, __I__nteroperable and __R__eusable

26.6.2019 EN Official Journal of the European Union L 172/56

DIRECTIVE (EU) 2019/1024 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

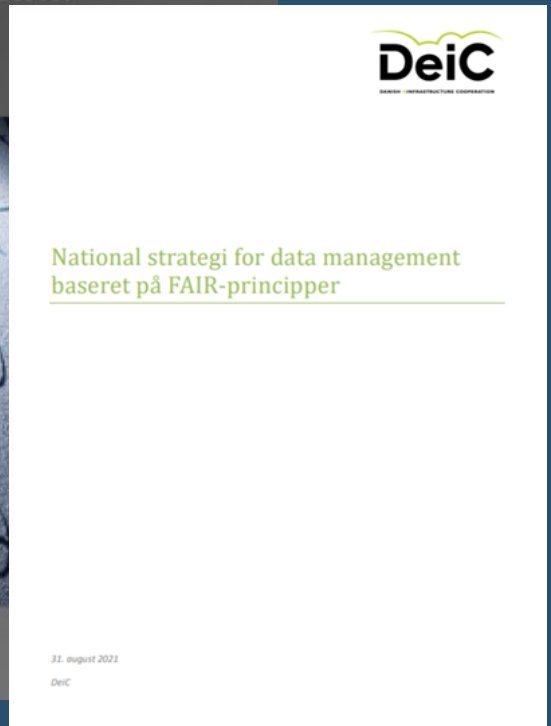
of 20 June 2019

on open data and the re-use of public sector information

(recast)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty



Reference Comittee and working groups

- A key element: A national reference committee and a number of working groups.
- The ministry and the reference committee are not responsible for the implementation of the strategy.
- The reference committee coordinates implementation in order to support a common national approach to FAIR data management across Danish universities and funding organizaions.

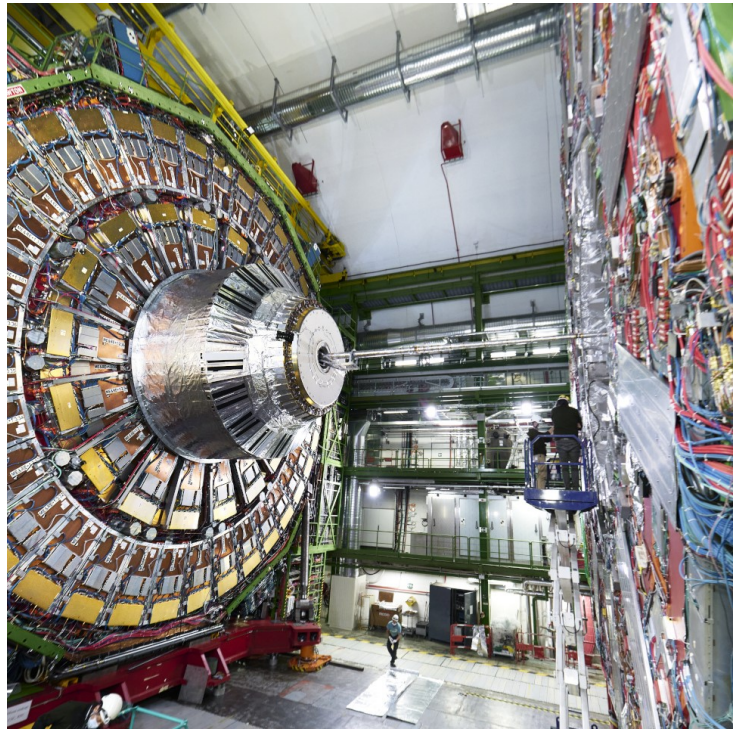
European Open Science Cloud

- The Danish FAIR data management strategy and the link to the EOSC
- EOSC post 2027
  - Governance models
  - Funding
- Enabling a ‘web of FAIR data and service’ for science.
- Enabling Open Science policies and the uptake of Open Science practices.

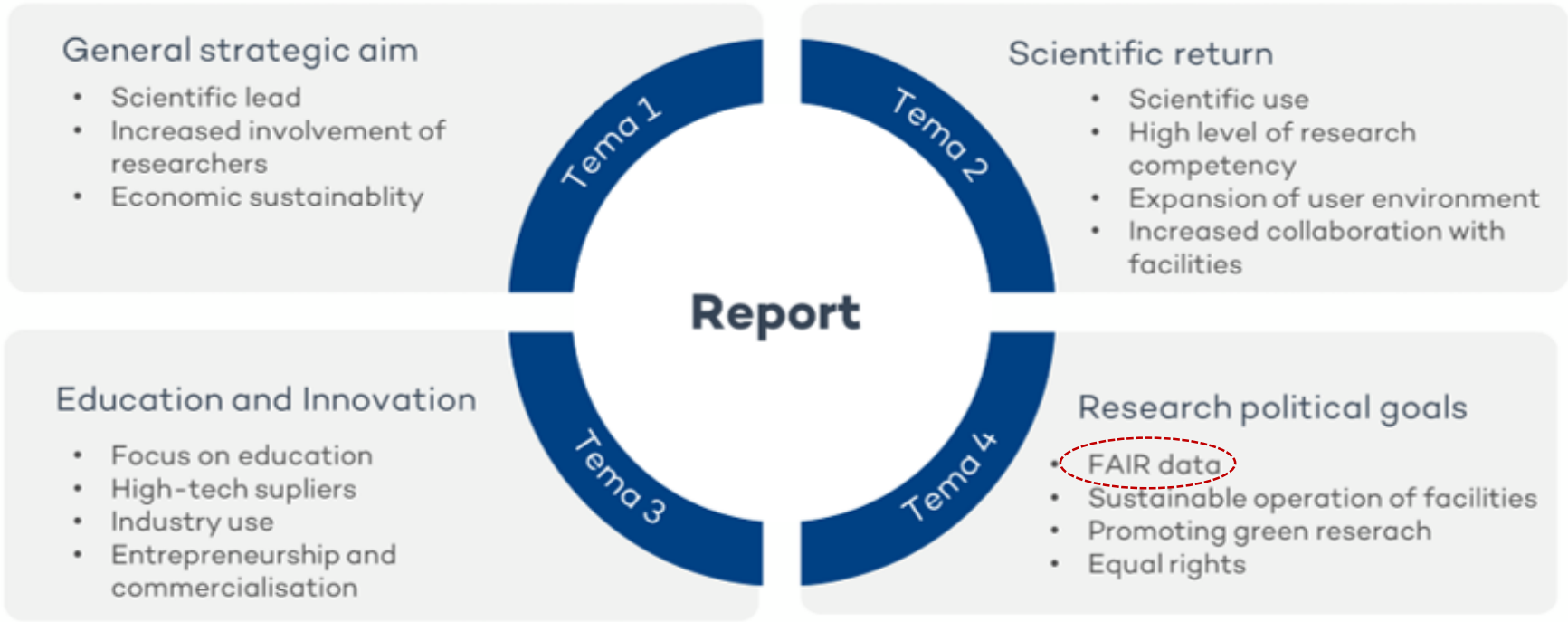
FAIR data policies and RI's

- **Integration of the Danish strategy on FAIR data management across policy areas – for example membership of European research infrastructures**

- **EU research infrastructures and the development of the EOSC**
  - High level EU Presidency conference (Sweden 2023)



Danish joint goals across research facilities



National Danish Partnership for Health Data

- **A national partnership with representatives from Danish ministries, industry, research institutions etc.**

- **FAIR data management is at the core of fulfilling the potential of research, innovation, development of personal medicine etc.**

The FAIR Strategy: Status and challenges

- **From the ministry's point of view:**

- Significant progress across Danish universities
- A number of "use cases" support the concrete implementation of the strategy
- Ongoing close dialogue with university management
- Important to address the timeline of the implementation of the strategy at the national level

Thank you!

Supporting FAIR adoption at the national level: Denmark

National Strategy for Data Management based on the FAIR Principles - *Working groups and action areas: What, why & how?*

Anne Sofie Fink, Head of DeiC Data Management
11th of October, 2023

The refence committee and the six working groups (2023-24)

The **reference committee** consists of university management from all 8 Danish universities, management from research funding agencies and management from the Danish Ministry of Education and Science.

The **working groups** consist of researchers, data managers, IT developers as well as research support staff from all the universities and research performing and supporting organisations.

The groups consist of 8-10 individuals.

- Working group A: *Policies, tools and research support for FAIR data management*
- Working group B: *Establishing FAIR infrastucture and longterm preservation*
- Working group C: *FAIR financial plan*
- Working group D: *Plan for increasing FAIR competencies and knowledge*
- Working group E: *Security aspects for cooperation on FAIR data*
- Working group F: *Value of data*

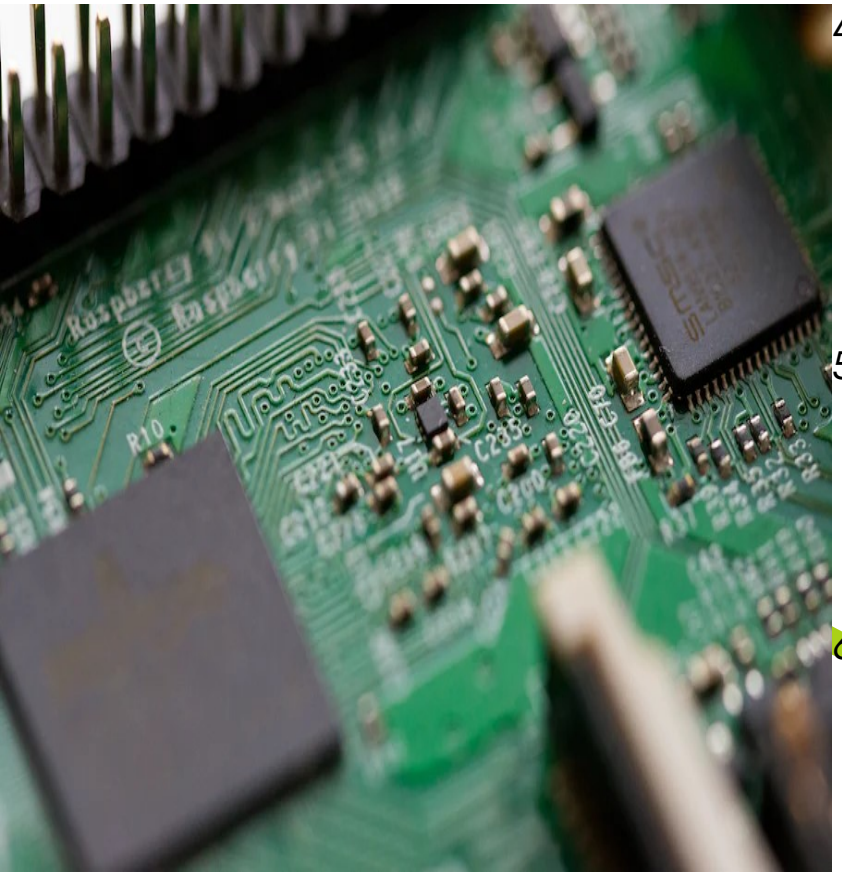
Action areas for working group A: *'Policies, tools and research support for FAIR data management'*

1. *How do the **different academic disciplines** work **with implementation of the FAIR principle** in **research practice**? For example, in their subject-specific workflows, tools, etc., possibly with inspiration from/in collaboration with international research environments?*

2. *What **policies** as well as **motivating and supporting efforts** exist to **support access to and re-use of research data**, including the use of **Persistent Identifiers (PID)** for digital researc objects (data, software, instruments, publications, etc.)?*

3. *Describe **best practices** for data governance and **policies/guidelines** for **maintaining overa responsibility for data** even after researchers have left the institution and/or project fundi has ended.*

Action areas for working group B: '*Establishing FAIR infrastucture and longterm preservation*'



4. *What **infrastructure** is available for **long-term preservation (10+ years)** for research data of all kinds at the **national level**, and how is coherence and cooperation ensured for longterm preservation, between the research institutions, DeiC and the Danish National Archives?*

5. *How can **services for data management plans** continue to be developed nationally and internationally, made machine-readable and used in connection with the notification of research data to the Danish National Archives?*

6. *How do the research institutions work with **security infrastructure** (Authentication, Authorization and Accounting Infrastructure, AAAI) specifically and especially for sensitive data, with the perspective that this can be **made FAIR, too**.*

Action areas for working group C: '*FAIR financial plan*'

7. *EU programs (for instance Horizon Europe) require grant recipients to **develop data management plans in connection with applications**. To what extent can national research foundations benefit from following this practice?*

8. *Can research data that forms the basis of published research **results be required to be made available** according to the FAIR principles, after the end of the project with at least metadata and a Persistent Identifier (PID), even when the data is not openly available?*

9. *Which **expenses for data management can be included in budgets**?*

Action areas for working group D: '*Plan for increasing FAIR competencies and knowledge*'

10. *What **competence profiles** have the research institutions set up for the **Data Stewardship research support function** for researchers? How have the research institutions **built the Data Stewardship research support function for researchers**?*

11. *To what extent is there interest in developing and offering the **research support function collaboratively at the national level**? For instance under a central or decentralized **national competence centre**.*

12. *Is there interest at the research institutions in **national coordination of FAIR research data management courses** (not research support)? Could a possible national collaboration include agreements on division of labour, specialisation, and a collaborative national offer of educational courses – for instance in the form of a competence center under the auspices of DeiC? Courses would encompass a range of academic levels, including bachelor's to continuing education for academic staff.*

13. *How are **incentive structures or merit recognition** currently used, nationally or internationally for FAIR data management practices at the research institutions?*

Action areas for working group E: '*Security aspects for cooperation on FAIR data*'

14. *What **requirements** must be made for **security** in connection with the **storage and sharing of data**?*

15. *In light of research groups' needs to be able to **work nationally and internationally with sensitive data**, which requires strong and flexible governance, which national and international solutions/services can support this need?*

16. *Can a better understanding of the **spectrum of data sensitivity** be provided? This means not only sensitive personal data, but also agreements, dual use pre-print, IPR, etc., including the researchers' own criteria for how the sensitivity of their data can be understood*

Action areas for working group F: *'Value of Data'*

17. What ***criteria for data value (curation) and economic models*** *do local, national and international data storage services use to assess* ***data preservation rationale, economics and sustainability****?*

Adressing the action areas: *what, why & how*

- *The action areas address the current status of FAIR data management in Denmark*
- *They have been chosen with regards to what we already know about FAIR in Denmark (report from 2022)*
- *Implementation of FAIR research data management in Denmark is not widespread (yet), and the strategy is a way to assess how far universities and research foundations have come, while or before actual implementation of FAIR research data management happens..*

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anne.sofie.fink@deic.dk (Head of Data Management, DeiC)

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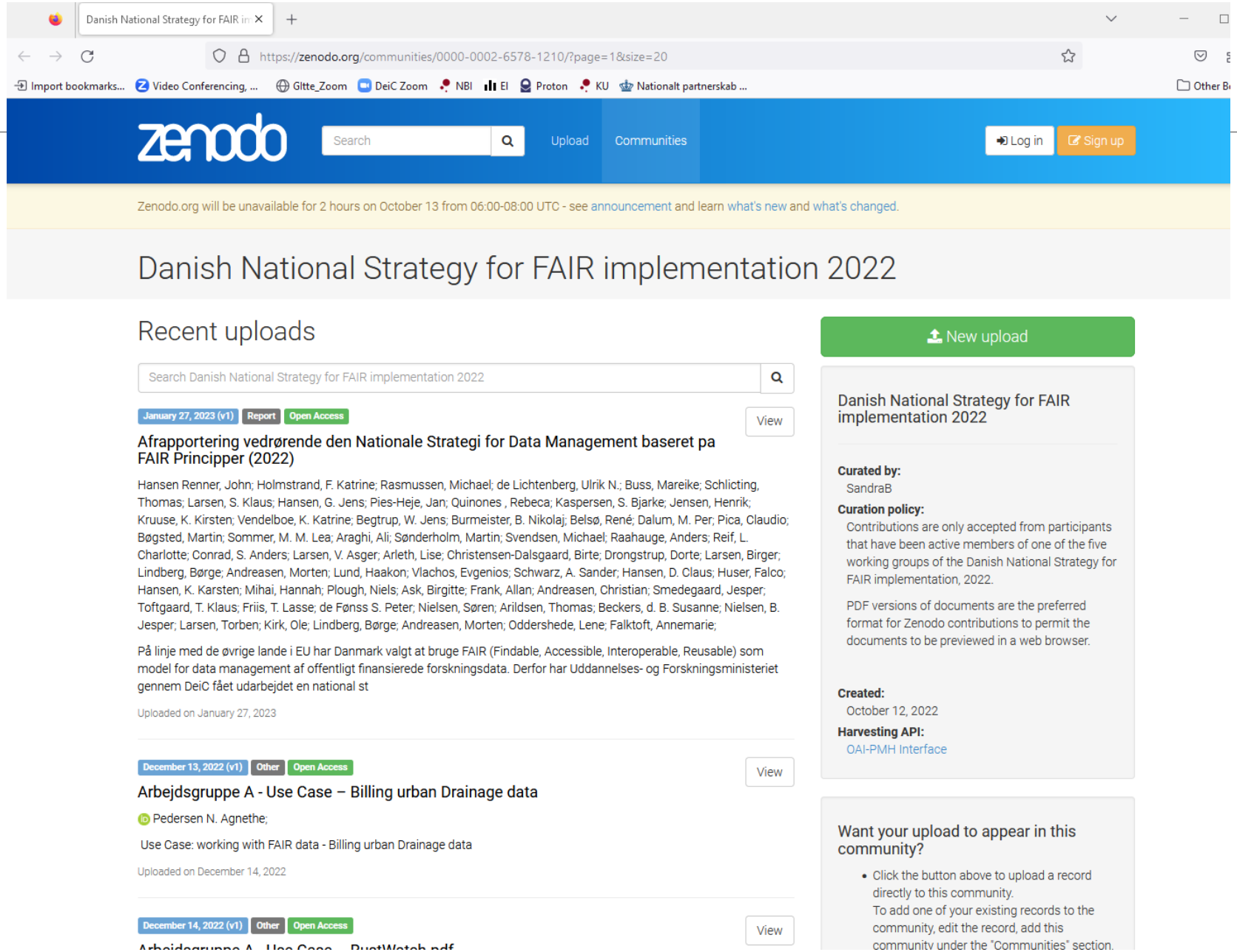
First report from the national Reference Group (RG) came December 2022 with recommendations for actions for the next two years i.g.

RG: Communication and knowledge sharing about data management and FAIR

External communication takes place by publishing all material in connection with the strategy on DeiC.dk and on Zenodo
https://zenodo.org/communities/0000-0002-6578-1210/


Danish National Strategy for FAIR in
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Import bookmarks...
Video Conferencing, ...
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DeiC Zoom
NBI
EI
Proton
KU
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Zenodo.org will be unavailable for 2 hours on October 13 from 06:00-08:00 UTC - see announcement and learn what's new and what's changed.
Danish National Strategy for FAIR implementation 2022
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January 27, 2023 (v1)
Report
Open Access
View
Afrapportering vedrørende den Nationale Strategi for Data Management baseret pa FAIR Principper (2022)
Hansen Renner, John; Holmstrand, F. Katrine; Rasmussen, Michael; de Lichtenberg, Ulrik N.; Buss, Mareike; Schlicting, Thomas; Larsen, S. Klaus; Hansen, G. Jens; Pies-Heje, Jan; Quinones , Rebeca; Kaspersen, S. Bjarke; Jensen, Henrik; Kruuse, K. Kirsten; Vendelboe, K. Katrine; Begtrup, W. Jens; Burmeister, B. Nikolaj; Belsø, René; Dalum, M. Per; Pica, Claudio; Bøgsted, Martin; Sommer, M. M. Lea; Araghi, Ali; Sønderholm, Martin; Svendsen, Michael; Raahauge, Anders; Reif, L. Charlotte; Conrad, S. Anders; Larsen, V. Asger; Arleth, Lise; Christensen-Dalsgaard, Birte; Drongstrup, Dorte; Larsen, Birger; Lindberg, Børge; Andreasen, Morten; Lund, Haakon; Vlachos, Evgenios; Schwarz, A. Sander; Hansen, D. Claus; Huser, Falco; Hansen, K. Karsten; Mihai, Hannah; Plough, Niels; Ask, Birgitte; Frank, Allan; Andreasen, Christian; Smedegaard, Jesper; Toftgaard, T. Klaus; Friis, T. Lasse; de Fønss S. Peter; Nielsen, Søren; Arildsen, Thomas; Beckers, d. B. Susanne; Nielsen, B. Jesper; Larsen, Torben; Kirk, Ole; Lindberg, Børge; Andreasen, Morten; Oddershede, Lene; Falktoft, Annemarie;
På linje med de øvrige lande i EU har Danmark valgt at bruge FAIR (Findable, Accessible, Interoperable, Reusable) som model for data management af offentligt finansierede forskningsdata. Derfor har Uddannelses- og Forskningsministeriet gennem DeiC fået udarbejdet en national st
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Arbejdsgruppe A - Use Case – Billing urban Drainage data
Pedersen N. Agnethe;
Use Case: working with FAIR data - Billing urban Drainage data
Uploaded on December 14, 2022
December 14, 2022 (v1)
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Danish National Strategy for FAIR implementation 2022
Curated by:
SandraB
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Contributions are only accepted from participants that have been active members of one of the five working groups of the Danish National Strategy for FAIR implementation, 2022.
PDF versions of documents are the preferred format for Zenodo contributions to permit the documents to be previewed in a web browser.
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October 12, 2022
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OAI-PMH Interface
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Click the button above to upload a record directly to this community.
To add one of your existing records to the community, edit the record, add this community under the "Communities" section.

Report from working group A:

'Policies, tools and research support for FAIR data management'

Goal: Build a catalog with examples of data management plans (DMPs), as well as best practices for describing metadata. Good, concrete examples - "use cases" - are collected from at least two different professional groups …

Use Case:

Billings urban Drainage data https://zenodo.org/record/7433401#.Y5nJnC0623U

RustWatch https://zenodo.org/record/7437351#.Y5nJ9i0623U

Research Infrastructure AnaEE Denmark https://zenodo.org/record/7437335#.Y5nKMC0623U

FAIR in Register Based Research https://zenodo.org/record/7437322#.Y5nKsS0623U

Goal: Establish a national Data Stewardship Group where the cooperation aims at defining particularly high Data Stewardship level within generic DS competence, as well as creating an organization that can lift projects and initiatives for data stewards nationally.

Recommendation: Need for a national collaboration with a mandate to create projects that support a common understanding/anchoring: competence development, FAIR workflows, Common governance, Data steward organization, RDM/FAIR support, incentive etc.

All universities have a data management policy (From WG-B)

They include the following elements:

> Refers to the "Danish Code of Conduct for Research Integrity" and has FAIR as the central concept

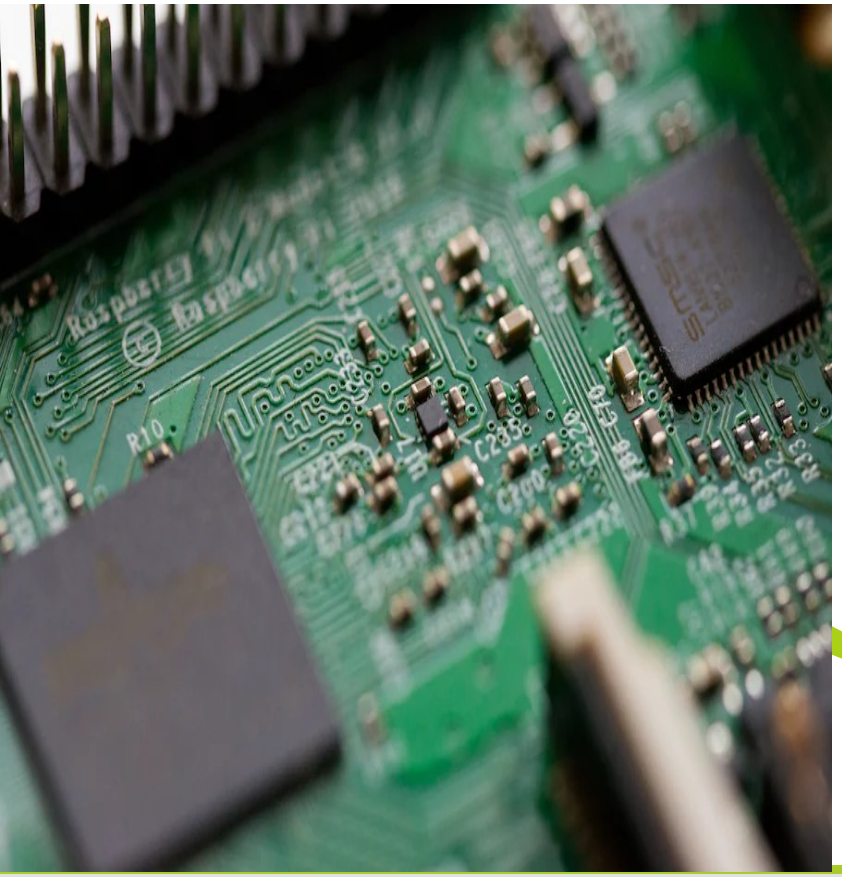
> Emphasizes that data should be made publicly available, unless it conflicts with legislation, ethical considerations, contractual conditions and the like.

> Emphasizes that data must be stored securely and responsibly.

> Determines the main responsibility for the infrastructure for storage at the institutions, while the responsibility for knowing about the infrastructure and using it lies with the management of the individual faculty/department/centre/department

> Data must be stored for a minimum of 5 years or in accordance with subject-specific traditions and best practice.

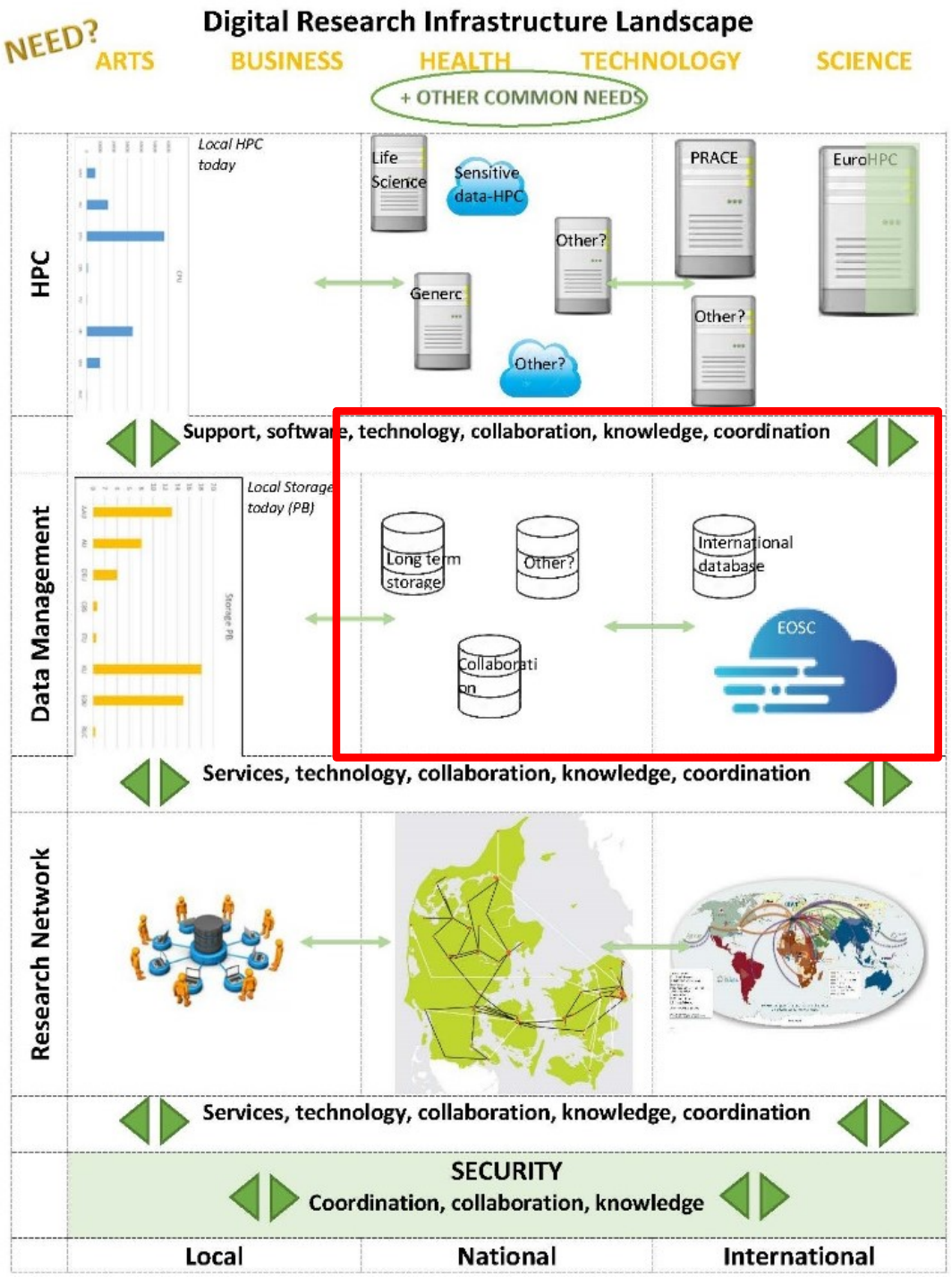
WG-B: *'Establishing FAIR infrastucture and longterm preservation'*



Goal: Through stakeholders and ongoing activities, to describe the status of methods and infrastructure for long-term preservation and initiate a discussion of how to coordinate at the national level. Long-term conservation focuses here on shorter conservation horizons, such as the practices used by the institutions when it comes to archiving data.

Recommantations:

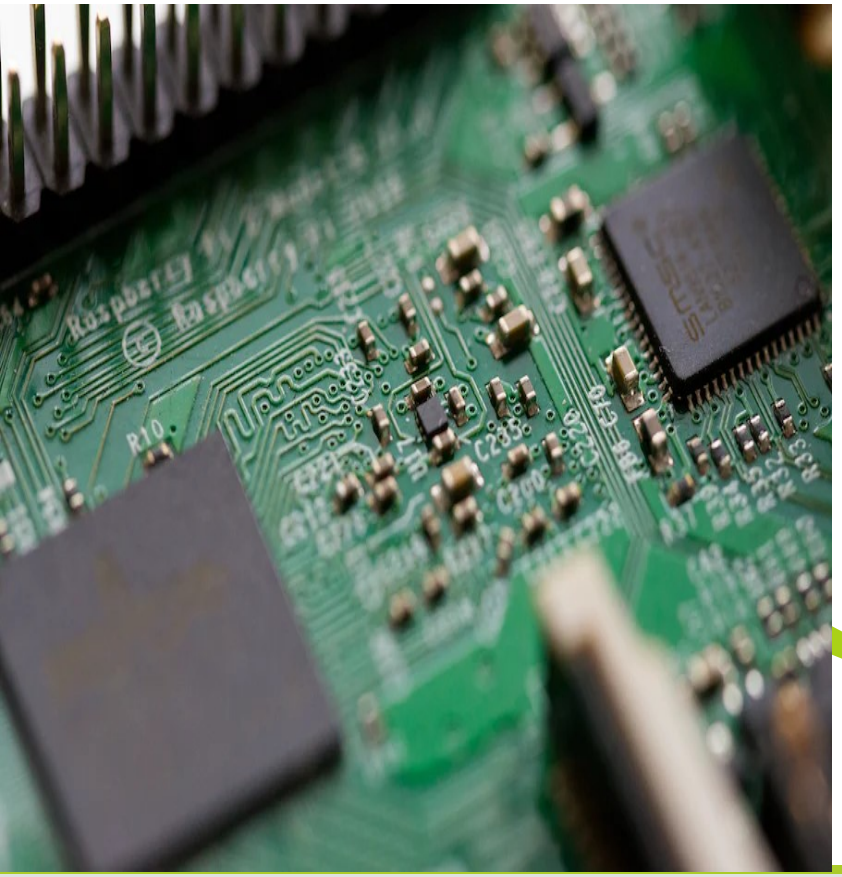
- The focus of further work should therefore initially be a closer examination of whether these projects will cover the current unaddressed needs for data storage in the 5-15 year horizon.
- The concrete possibilities for conservation in the time perspective of 5-15 years should be investigated
- How is funding secured for infrastructure and related processes?
- There is a need for a more general political position on preservation beyond the 5 years Support and recognition of already existing initiatives for medium-long-term preservation of data must be ensured
- A national roadmap for long-term preservation (5-15 years) should be drawn up



A national data storage system is being tested by friendly users. Ready 2024-Q2.

Trusted repository based on Harvard Dataverse ready when storage system is ready

WG-B: *'Establishing FAIR infrastucture and longterm preservation'*



Goal: Based on a catalog of existing DMP templates, to discuss the possibilities for a coordinated effort to develop and adapt templates.

In a survey organized in collaboration with Working Group A, researchers from seven institutions stated that the template(s) for data management plans that are recommended can be found on DMPonline.

Recommantations:

DMPonline be further promoted as a catalog of active DMP templates and that the institutions should use DMPonline and update, deactivate and share DMP templates through it - until a better alternative exists.

(The Danish version of DMPonline changed name 1st October to DeiC DMP)

WG-C: *'FAIR financial plan'*

Goals:

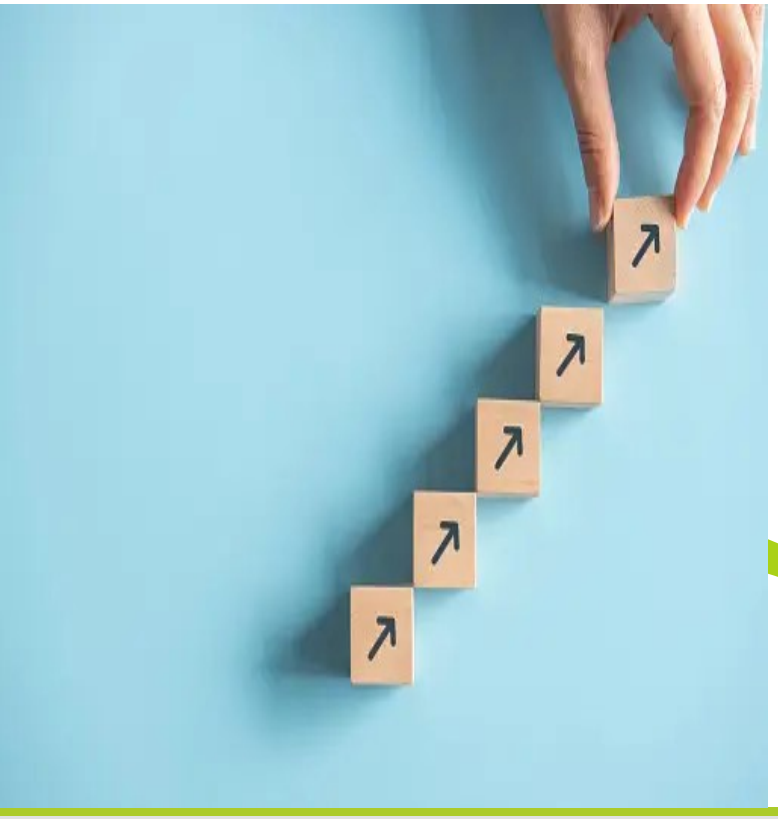
To get an overview of the typical activities and related expenses, necessary to comply with the requirements for organizing research data according to the FAIR principles.

That an overview is created of what each individual fund currently has in terms of policy and/or initiatives that promote FAIR

That a common understanding of the barriers is achieved, e.g. the costs that apply to FAIR and the need for incentives to promote FAIR

That proposals are drawn up across the funds for a joint description of the barriers, e.g. the costs that apply to FAIR and the need for incentives to promote FAIR. Based on this, the foundations can draw up their own policy and practice in the area.

WG-D: '*Plan for increasing FAIR competencies and knowledge*'



Goals:

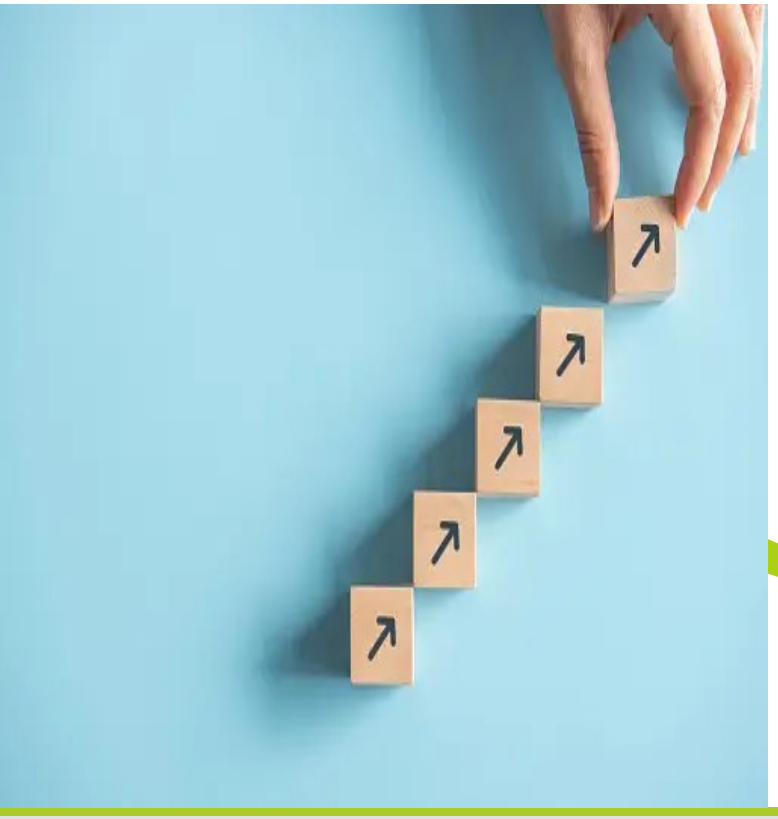
To select an already existing framework for FAIR RDM which is recommended to form the starting point for the realization of competence development within FAIR RDM at the individual research institutions.

To achieve consensus on the concept of 'competence development' across research institutions

Prepare proposals for institutions on the use of the chosen framework in the work with competence development at different levels, including proposals for methods for systematic evaluation of goals and efforts aimed at this competence development

Conclusion: There is no common, overarching competence framework for FAIR RDM in Denmark. The working group recommends the *FAIR Competence Framework for Higher Education* (FAIR4HE: https://doi.org/10.5281/zenodo.4562088 and https://doi.org/10.5281/zenodo.5665492) to describe the competencies within FAIR RDM.

WG-D: '*Plan for increasing FAIR competencies and knowledge*'



Incentives and barriers for researchers:

The Working Group recommends creating positive incentives for researchers to cultivate FAIR data practices, for example with the help of success stories such as Working Group A's use cases. It is important to concretize and translate the FAIR principles into a language that takes greater account of the traditions found in certain subjects, perhaps particularly within parts of the social and human sciences.

National network for FAIR RDM competence development:

The working group assesses that there is currently no need to create more professional networks. The National Research Data Management Network can be used as a forum to strengthen and provide content for the national collaboration and promote FAIR RDM competence development in Denmark. The future establishment of a national competence center for data management must also be discussed under the auspices of the National RDM Network based on the results from the Skills4EOSC project.

WG-E: *'Security aspects for cooperation on FAIR data'*

Goal:

Develop a catalog of events and behaviors that can help define the concerns that need to be addressed before data is shared. This is thought broadly in relation to abuse, which goes against the research's basic premise of benefiting society and individuals.

Considerations:

It is important to get the professional environments at the universities involved to map how data can be misused.

That it should be investigated whether a profile can be made for special subjects, methods or data types that can be used to map when the protection of data requires a high level of governance. The development of the right governance must ensure that the persons who gain access to data are identified and that the use of data is managed in relation to the risk profile of the data accessed.

The universities' ability to deliver a high level of data security is strategically important

> Action areas for working group F: *'Value of Data'*

17. What criteria for data value (curation) and economic models do local, national and international data storage services use to assess data preservation rationale, economics and sustainability?

Supporting FAIR adoption at the national level: Denmark

Status and hope for the future

FAIR Impact Webinar – 11th October 2023

Chairman of the DeiC's board
Professor John Renner Hansen at Niels Bohr Institute/University of Copenhagen

Thank you for your attention

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