



# Requirements

from funding bodies & institutions



Korbinian Bösl  
Data management coordinator  
ELIXIR Norway/Digital Life Norway  
9th of March 2021



19/12/2017

## National strategy on access to and sharing of research data

**Research data must be as open as possible, as closed as necessary**

**Research data should be managed and curated to take full advantage of their potential.**

**Decisions concerning archiving and management of research data must be taken within the research community**

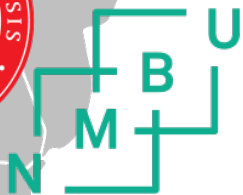
...

**The Government expects:**

the research institutions to develop procedures for (i) approving data management plans

...





# FAIR-principles

Data Management Plan  
Storage  
Archival  
Ethics  
Deposition

<https://innsida.ntnu.no/wiki/-/wiki/English/NTNU+Open+Data>

[https://www.nmbu.no/en/research/for\\_researchers/researchdata/node/34680](https://www.nmbu.no/en/research/for_researchers/researchdata/node/34680)

<https://www.uio.no/english/for-employees/support/research/research-data-management/policies-and-guidelines/index.html>

[https://intranett.uit.no/Content/532111/cache=20170109133727/Principles%20and%20guidelines%20for%20research%20management%20at%20UiT\\_010917.pdf](https://intranett.uit.no/Content/532111/cache=20170109133727/Principles%20and%20guidelines%20for%20research%20management%20at%20UiT_010917.pdf)



# The Research Council of Norway's Policy for Open Access to Research Data

December 2017

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# The Research Council of Norway's Policy for Open Access to Research Data

December 2017

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## Research data...



<https://www.forskningsradet.no/contentassets/e4cd6d2c23cf49d4989bb10c5eeao87a/the-research-council-of-norways-policy-for-open-access-to-research-data.pdf>



# The Research Council of Norway's Policy for Open Access to Research Data

December 2017

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## Research data...



...must be stored/archived in a safe and secure manner.





# The Research Council of Norway's Policy for Open Access to Research Data

December 2017

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## Research data...



...must be stored/archived in a safe and secure manner.



...must be made accessible for reuse.





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December 2017

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...should be made accessible at an early stage [latest at publication]







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...must be accompanied by standardised metadata.





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...should preferably be made accessible at no charge.





# The Research Council of Norway's Policy for Open Access to Research Data

December 2017

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...should be made accessible at an early stage [latest at publication]



...must be accompanied by standardised metadata.



...must be provided with a license for access, reuse and redistribution.



...should preferably be made accessible at no charge.



... must be described in a data management plan.





# The Research Council of Norway





# The Research Council of Norway

## Description & Re-use





# The Research Council of Norway

Description & Re-use  
Documentation & Data quality





# The Research Council of Norway

Description & Re-use  
Documentation & Data quality  
Storage & Backups







# The Research Council of Norway



Description & Re-use  
Documentation & Data quality  
Storage & Backups  
Legal & Ethical requirements





# The Research Council of Norway



Description & Re-use  
Documentation & Data quality  
Storage & Backups  
Legal & Ethical requirements  
Sharing & Preservation





# The Research Council of Norway



Description & Re-use  
Documentation & Data quality  
Storage & Backups  
Legal & Ethical requirements  
Sharing & Preservation  
Responsibilities & Resources





# The Research Council of Norway



Description & Re-use  
Documentation & Data quality  
Storage & Backups  
Legal & Ethical requirements  
Sharing & Preservation  
Responsibilities & Resources  
Alignment with FAIR-principles





# The Research Council of Norway

27.01.2021

## Update by Science Europe





# The Research Council of Norway

27.01.2021

Update by Science Europe  
including evaluation rubric





# The Research Council of Norway



27.01.2021

Update by Science Europe

including evaluation rubric

RCN does not [yet?] refer to the updated guide





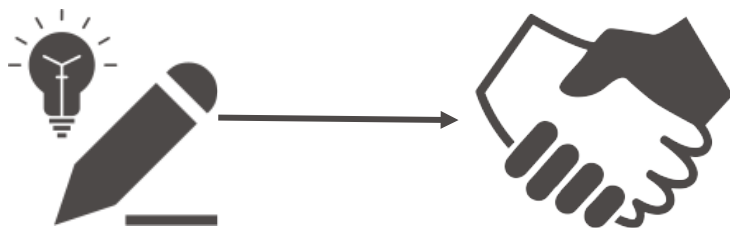
# The Research Council of Norway







# The Research Council of Norway





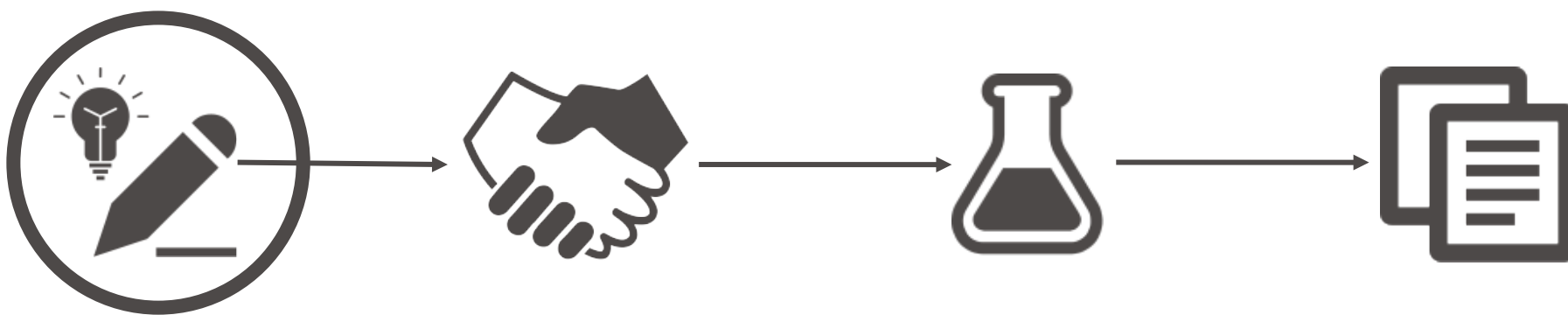
# The Research Council of Norway





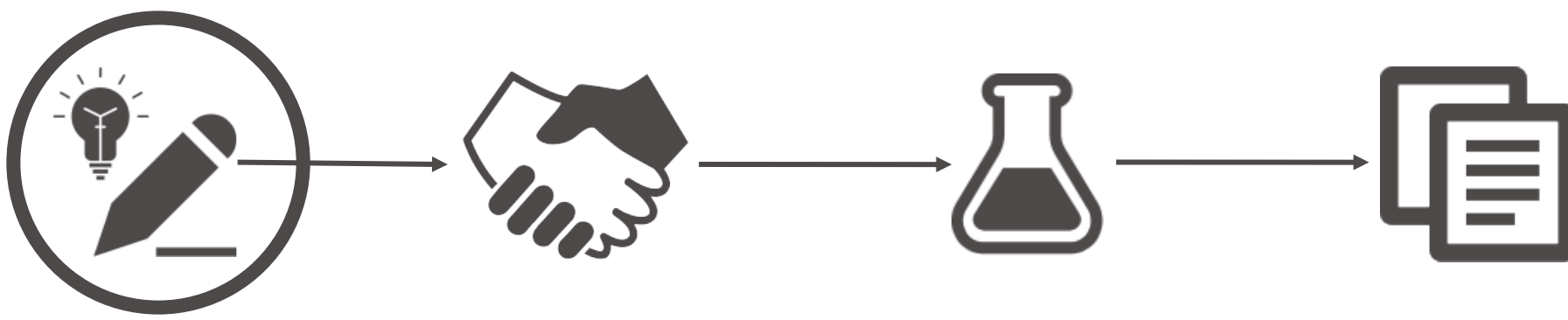
# The Research Council of Norway





No DMP required





No DMP required

But you should consider:



Ethical and Legal aspects

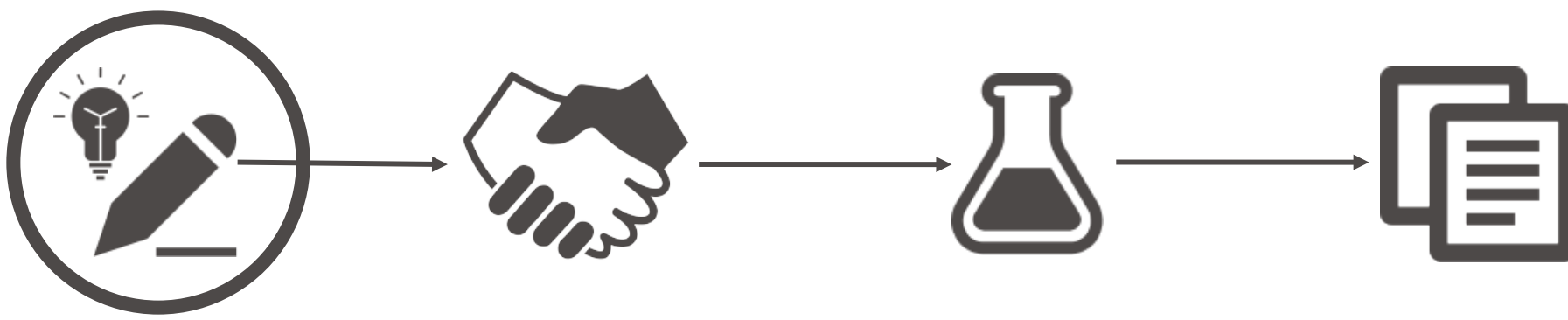


Storage and computing (budgeting?)



Budgeting for DM-personnel & time effort

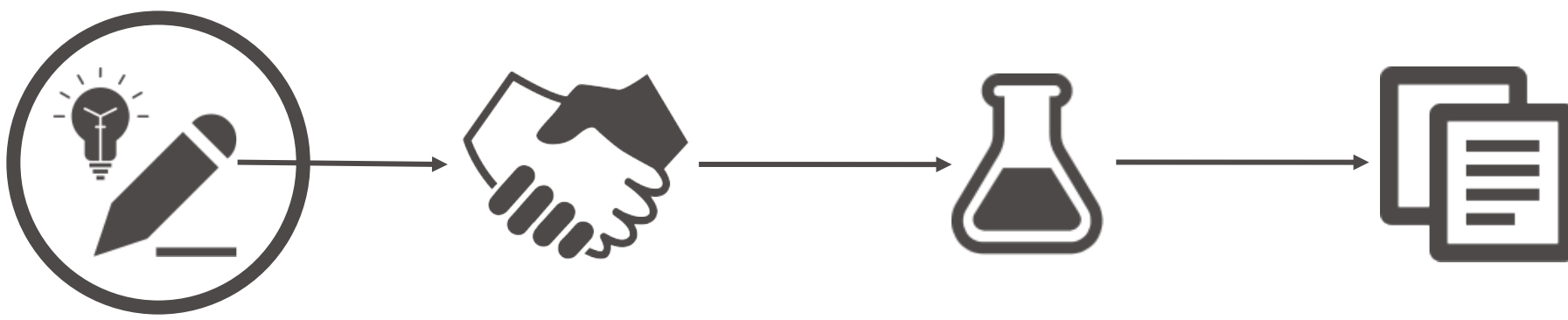




No DMP required

§§ Examples:  
REK approval necessary (for sharing of data?)

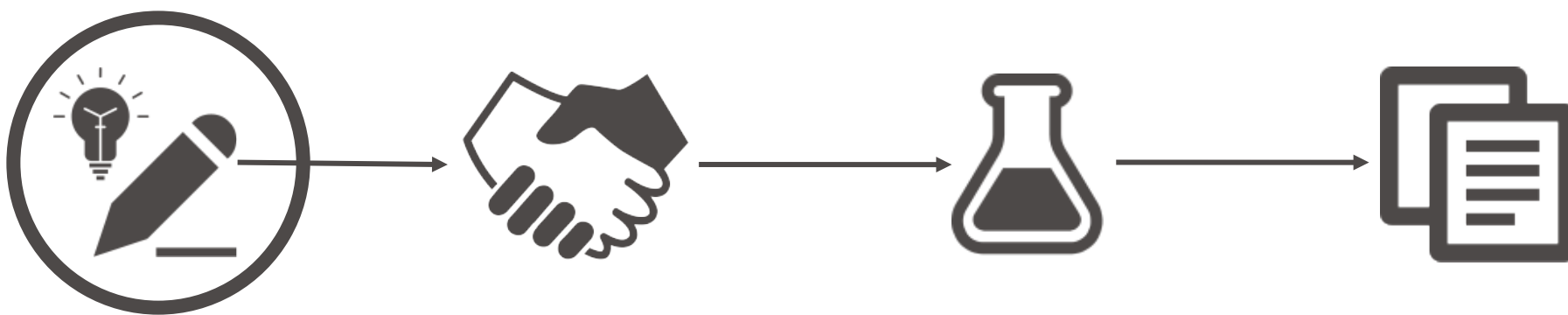




No DMP required

§§ Examples:  
REK approval necessary (for sharing of data?)  
GDPR considerations





No DMP required

§§ Examples:

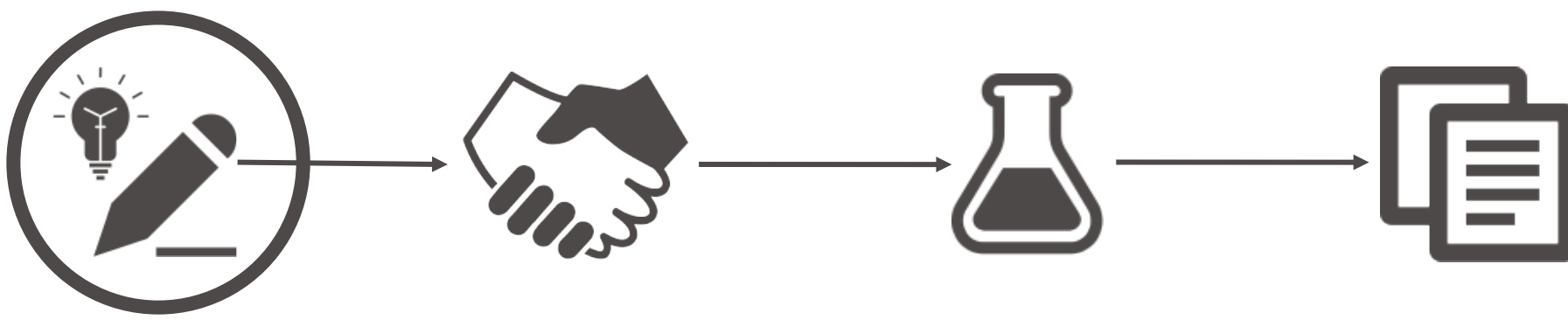
REK approval necessary (for sharing of data?)

GDPR considerations

IPR aspects







No DMP required

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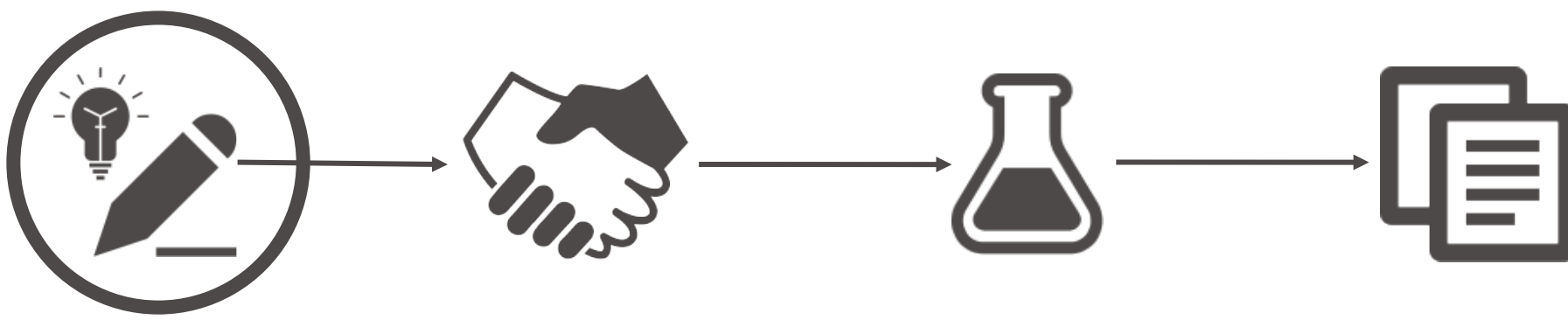
REK approval necessary (for sharing of data?)

GDPR considerations

IPR aspects

Which Research Ethical Guidelines apply for this project?





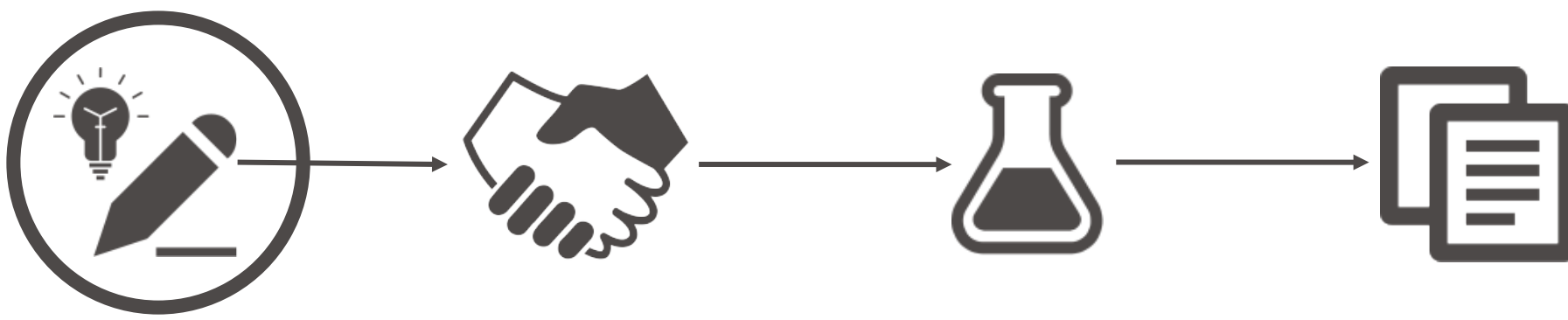
No DMP required



Examples:

Is access to computing/storage secured?





No DMP required

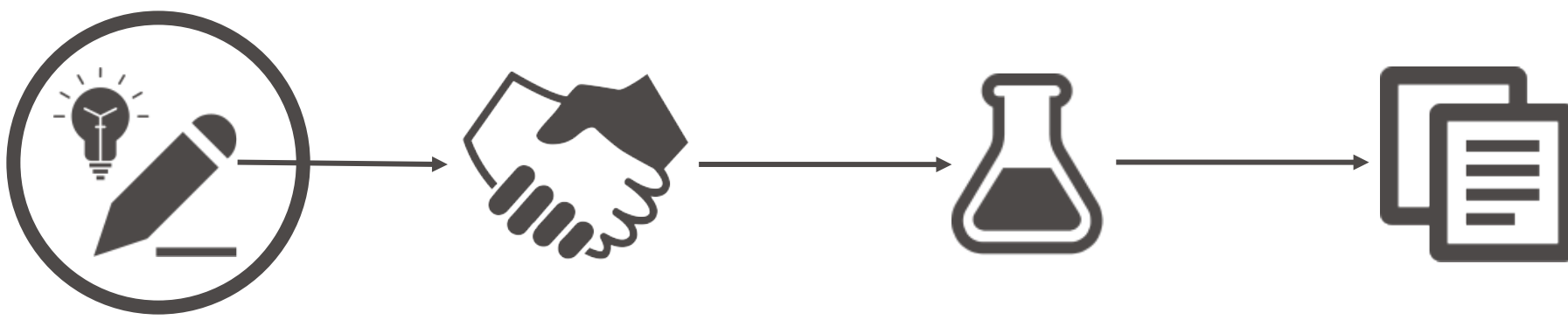


Examples:

Is access to computing/storage secured?

Will we have to pay for data storage (of sensitive data?)





No DMP required



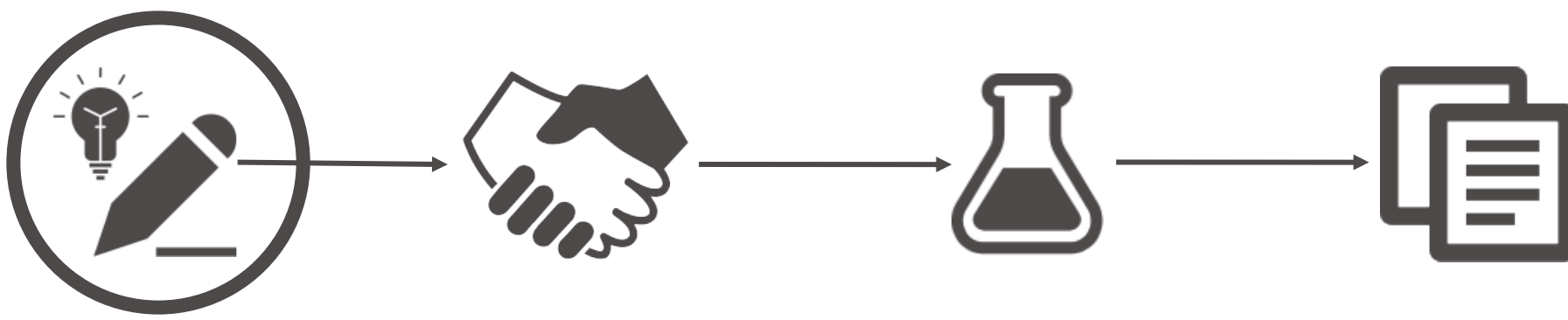
Examples:

Is access to computing/storage secured?

Will we have to pay for data storage (of sensitive data?)

How will data be accessed & transferred?





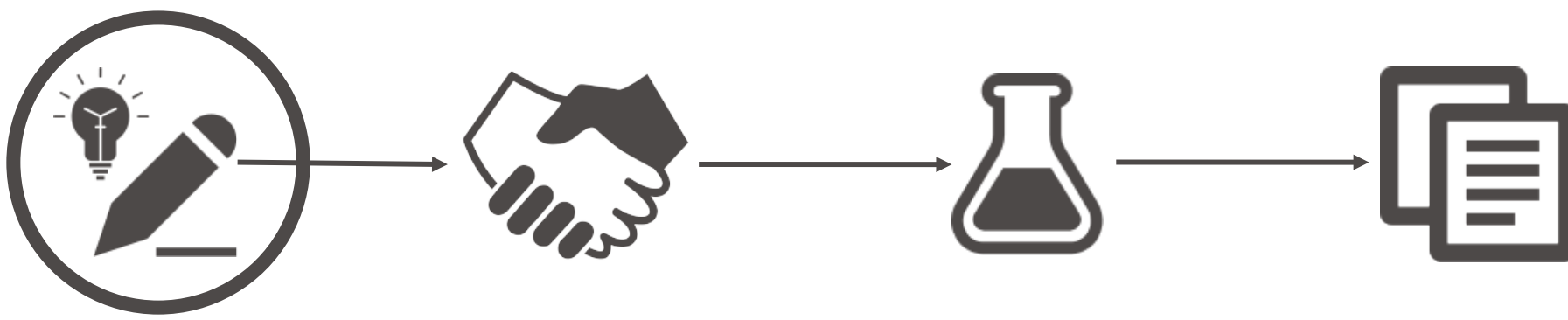
No DMP required



Examples:

Will we need help from a Data Steward (and budget for this)?





No DMP required

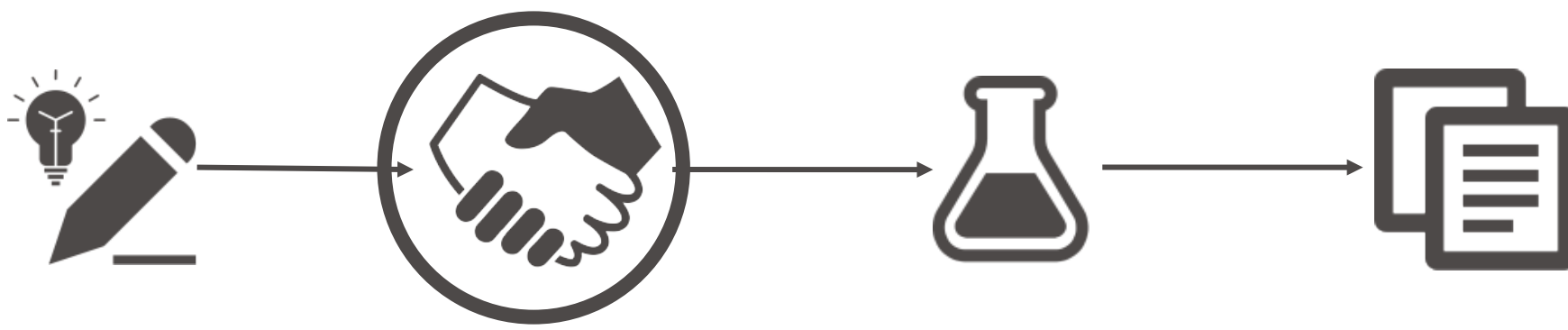


Examples:

Will we need help from a Data Steward (and budget for this)?

Will we need with data analysis, data warehousing or deposition?

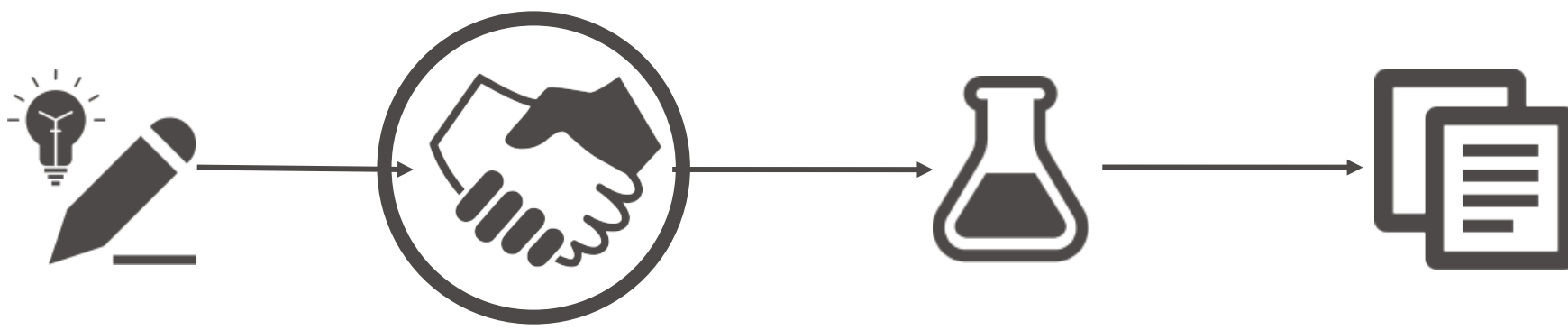




**Full DMP required**

If you decide that a data management plan is not needed, you must provide an explanation.





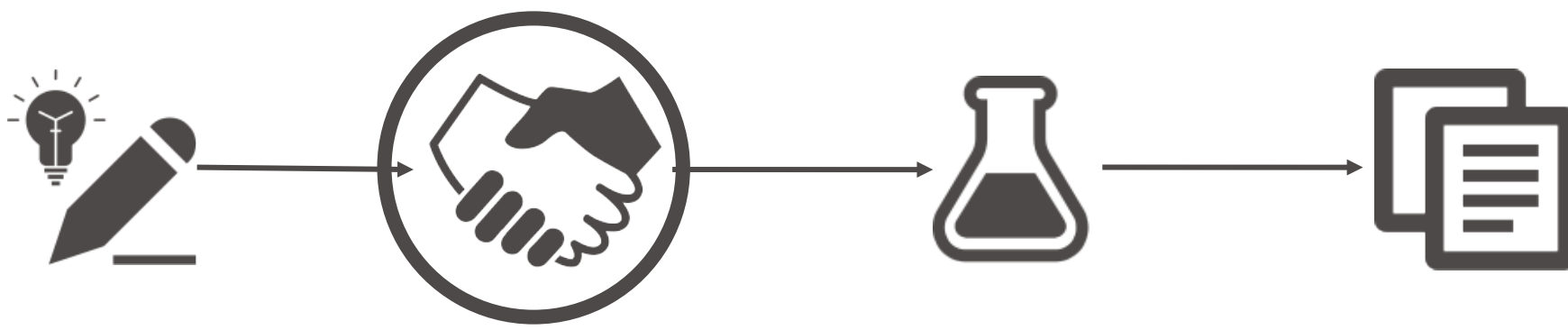
**Full DMP required**

If you decide that a data management plan is not needed, you must provide an explanation.

- I don't know of any - do you?







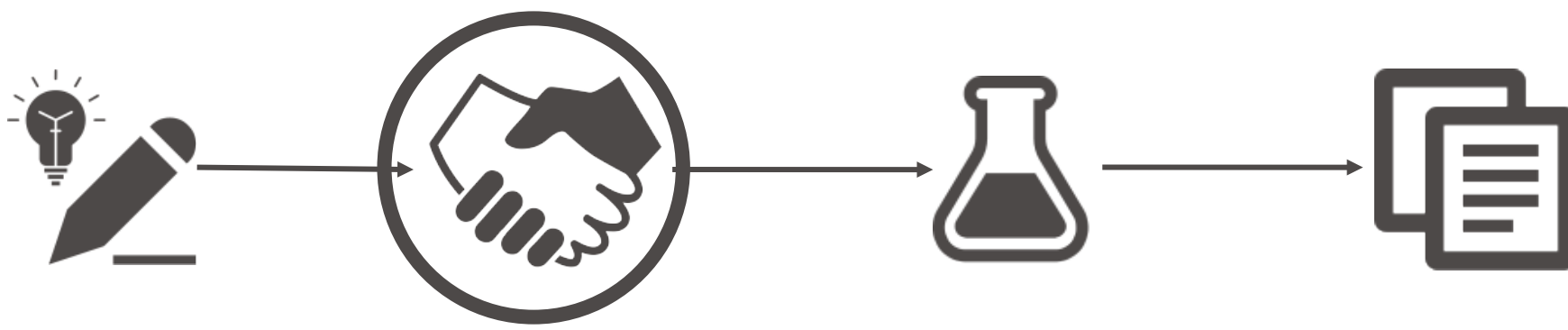
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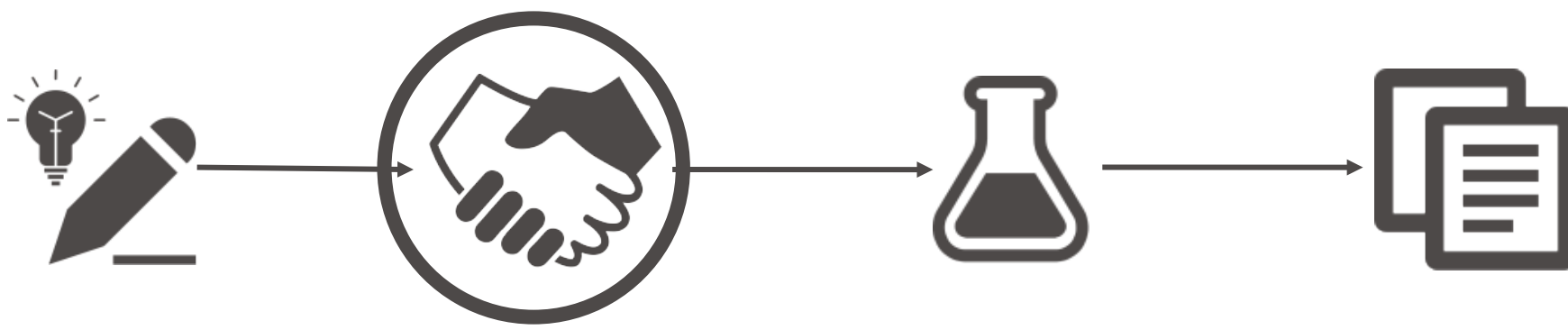
Even if you only reuse others data, you should describe where and how it is accessible & how your processed data can be accessed or reproduced?



**Full DMP required**

Documentation, formats, volume



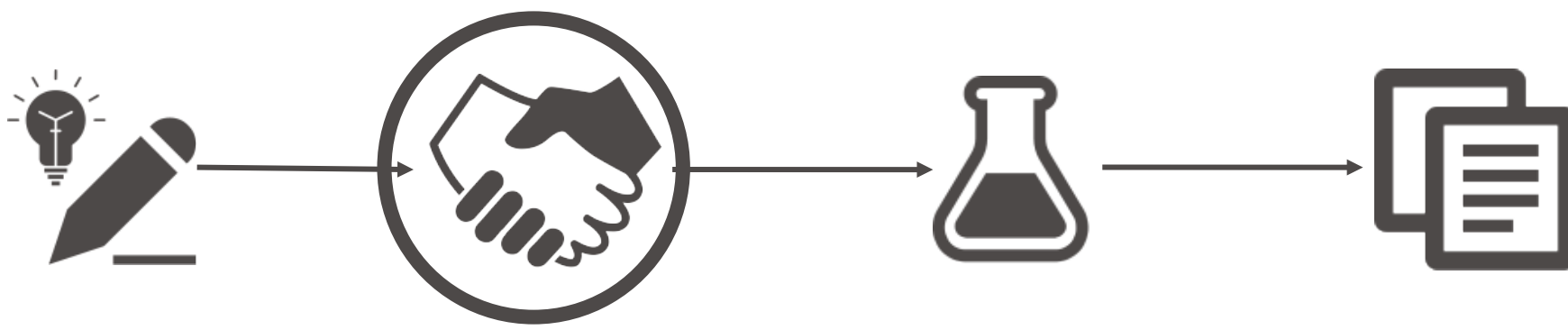


## Full DMP required

Documentation, formats, volume

Quality assurance including Metadata standards





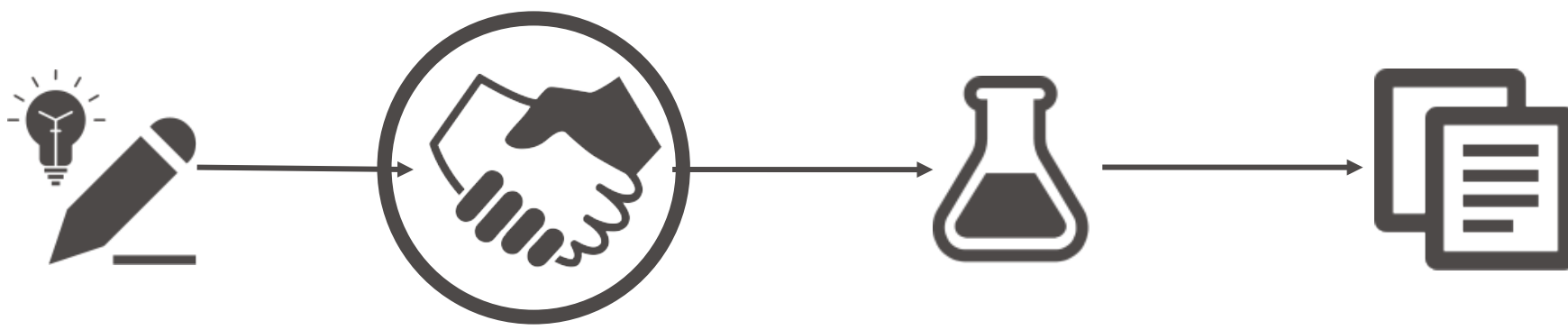
## Full DMP required

Documentation, formats, volume

Quality assurance including Metadata standards

Backup during project





## Full DMP required

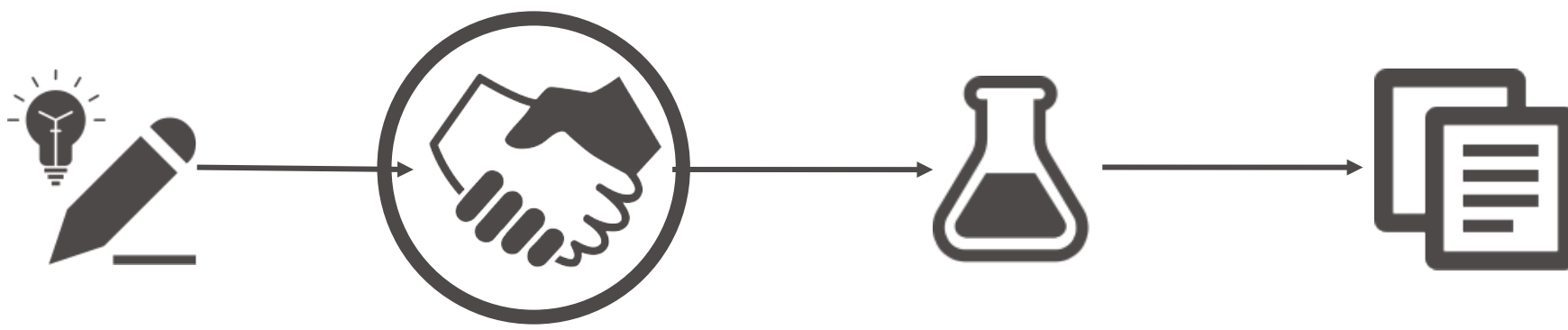
Documentation, formats, volume

Quality assurance including Metadata standards

Backup during project

Sharing & Preservation





## Full DMP required

Documentation, formats, volume

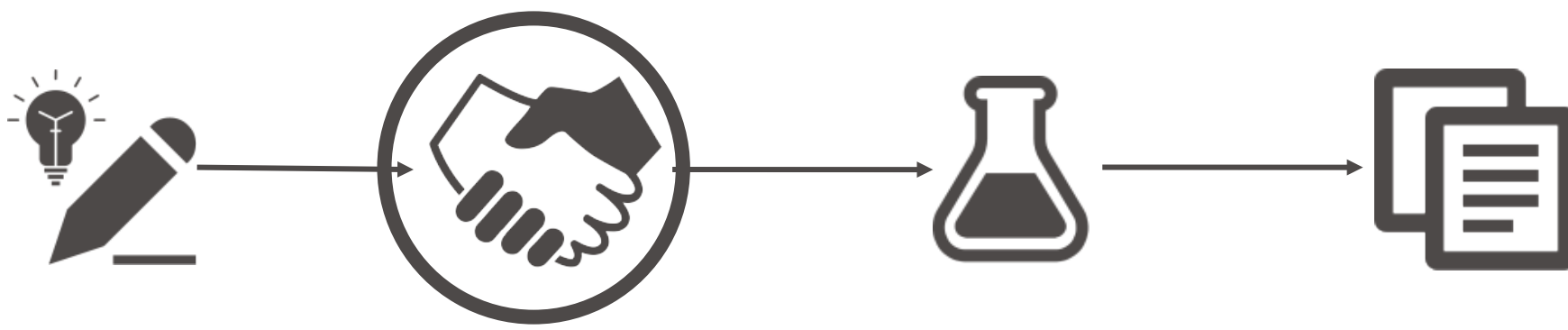
Quality assurance including Metadata standards

Backup during project

Sharing & Preservation

Ethical and Legal aspects - including IPR





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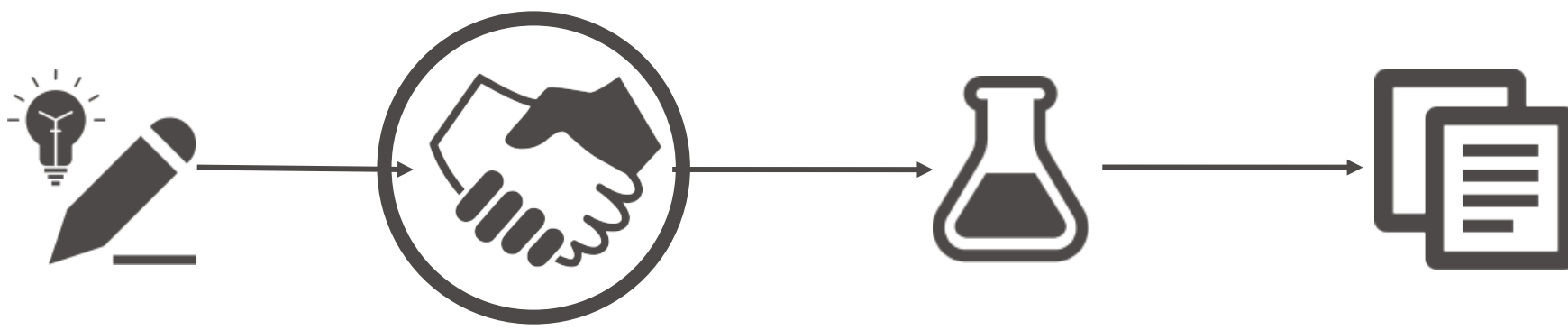
Backup during project

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Ethical and Legal aspects - including IPR

Who is responsible in the project?





## Full DMP required

Documentation, formats, volume

Quality assurance including Metadata standards

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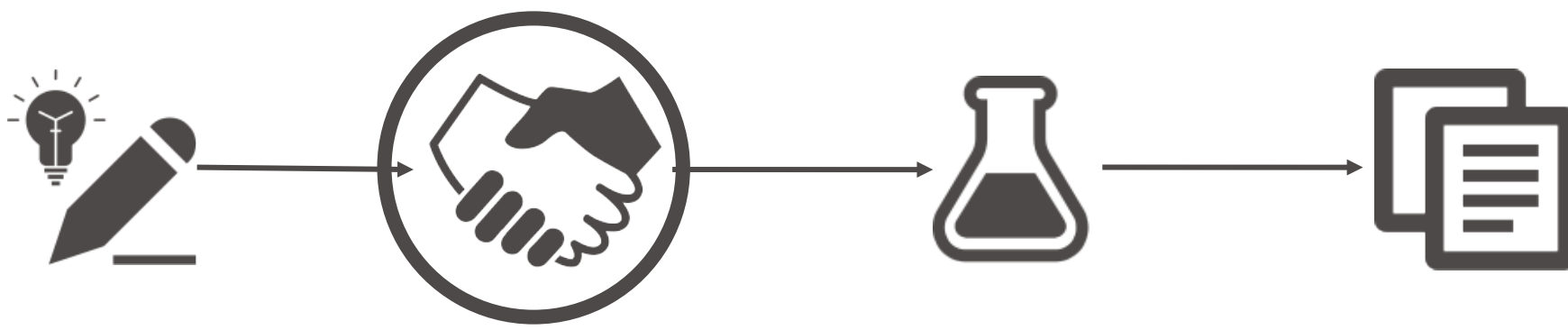
Ethical and Legal aspects - including IPR

Who is responsible in the project?

To which trustworthy repository will the data be submitted?



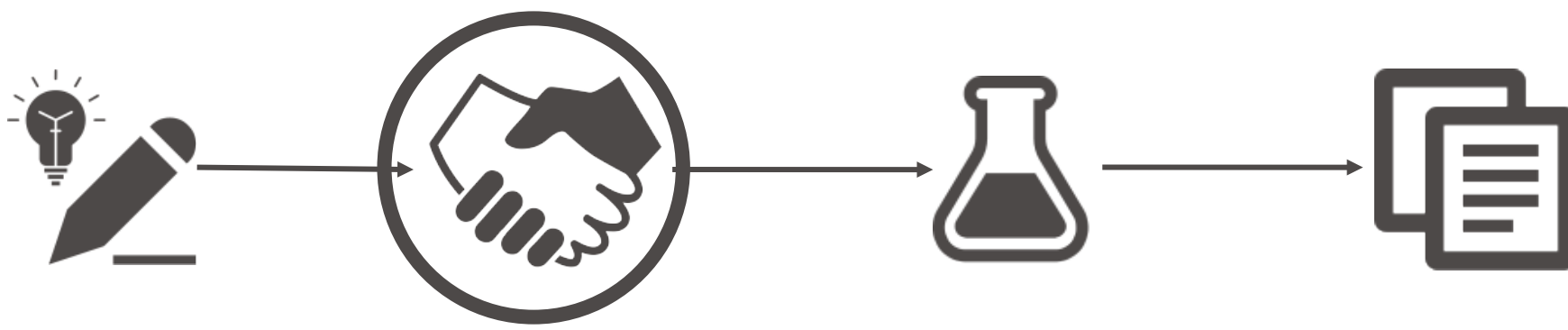




**Full DMP required**

**Data management plans are to be made public and openly accessible.**





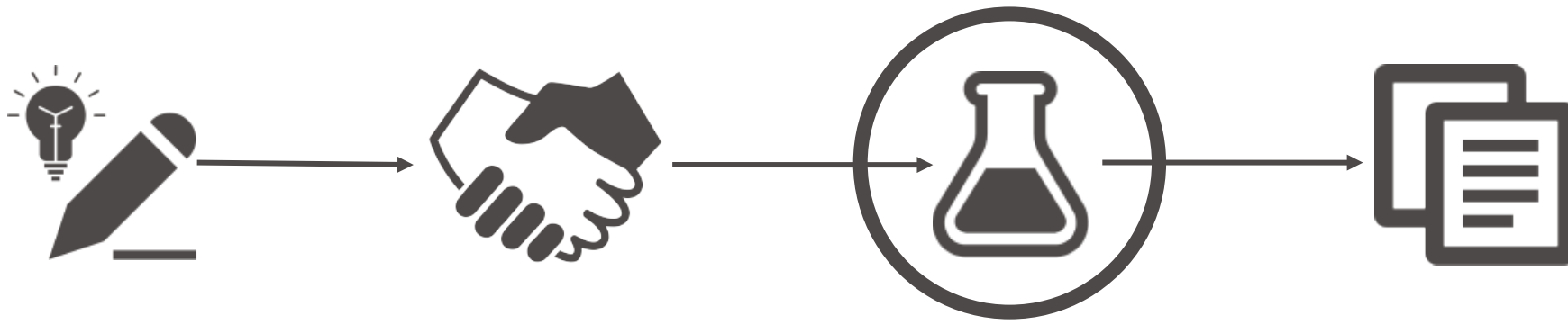
Full DMP required

Data management plans are to be made public and openly accessible.

One possibility:

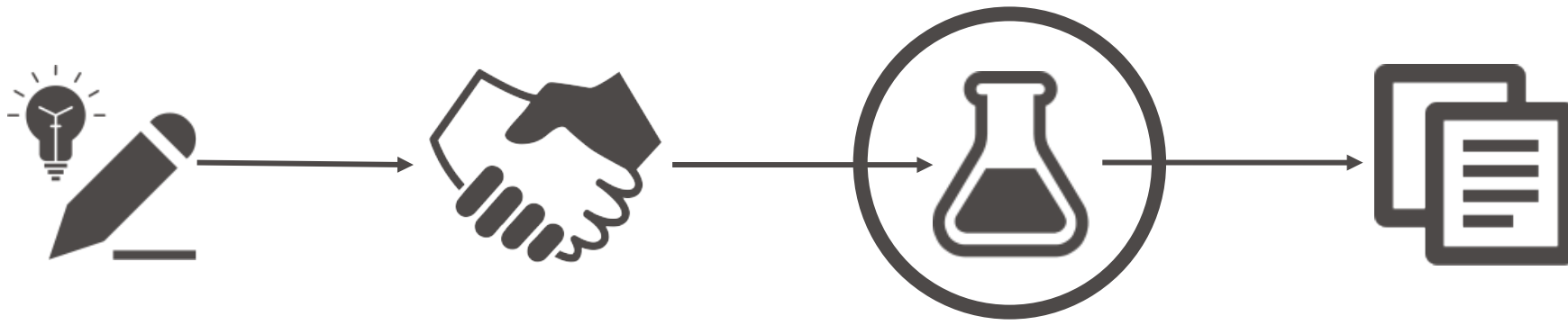
zenodo





DMP is constantly updated

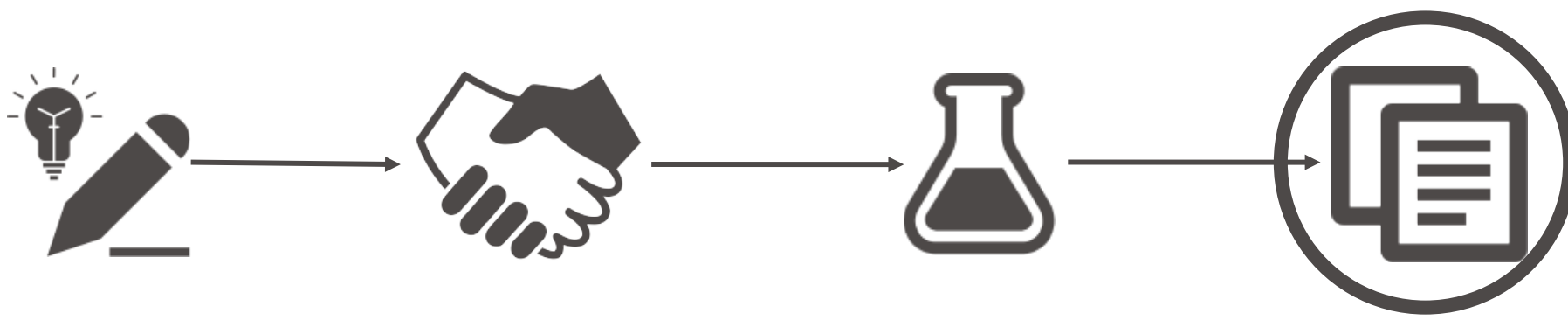




DMP is constantly updated

... changes to the plan don't have to be reported to RCN





Final version of the data management plan in connection with the final report of the project.

Data is deposited to trustworthy repository





# Horizon 2020 → Horizon Europe

Open Research Data Pilot (ORD pilot)  
Default since 2017 → mandatory 2021



**DMP**  
outline

**DMP**

- After 6 month
- Update upon significant changes





# Horizon 2020 → Horizon Europe

Data summary

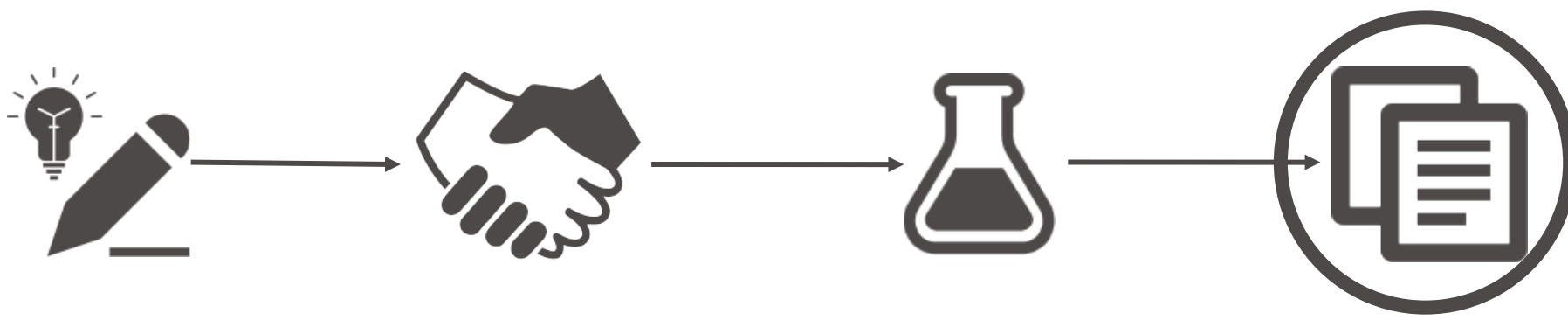
FAIR data implementation

Resources

Data security

Ethics





In addition major publishers also ask your data to be deposited



**nature**



SCIENTIFIC  
**DATA** 110110  
0111101  
1101110  
011101101



# NeLS

Norwegian e-Infrastructure for Life Sciences

BioStudies.

ENA  
European Nucleotide Archive

IDR

ArrayExpress

MetaboLights

Proteomics Identifications Database

EUROPEAN  
GENOME-PHENOME  
ARCHIVE

DSW

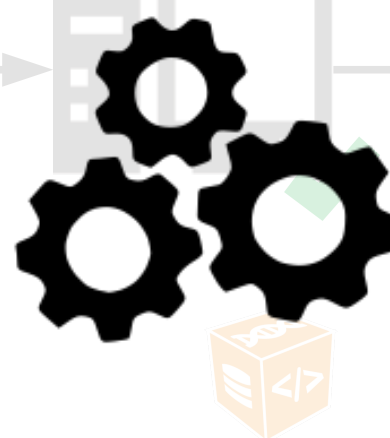
SEEK

Galaxy

F indelible A ccessible I nteroperable R euseable



sensitive  
data



Data catalogues &  
registries

Data creation &  
deposit

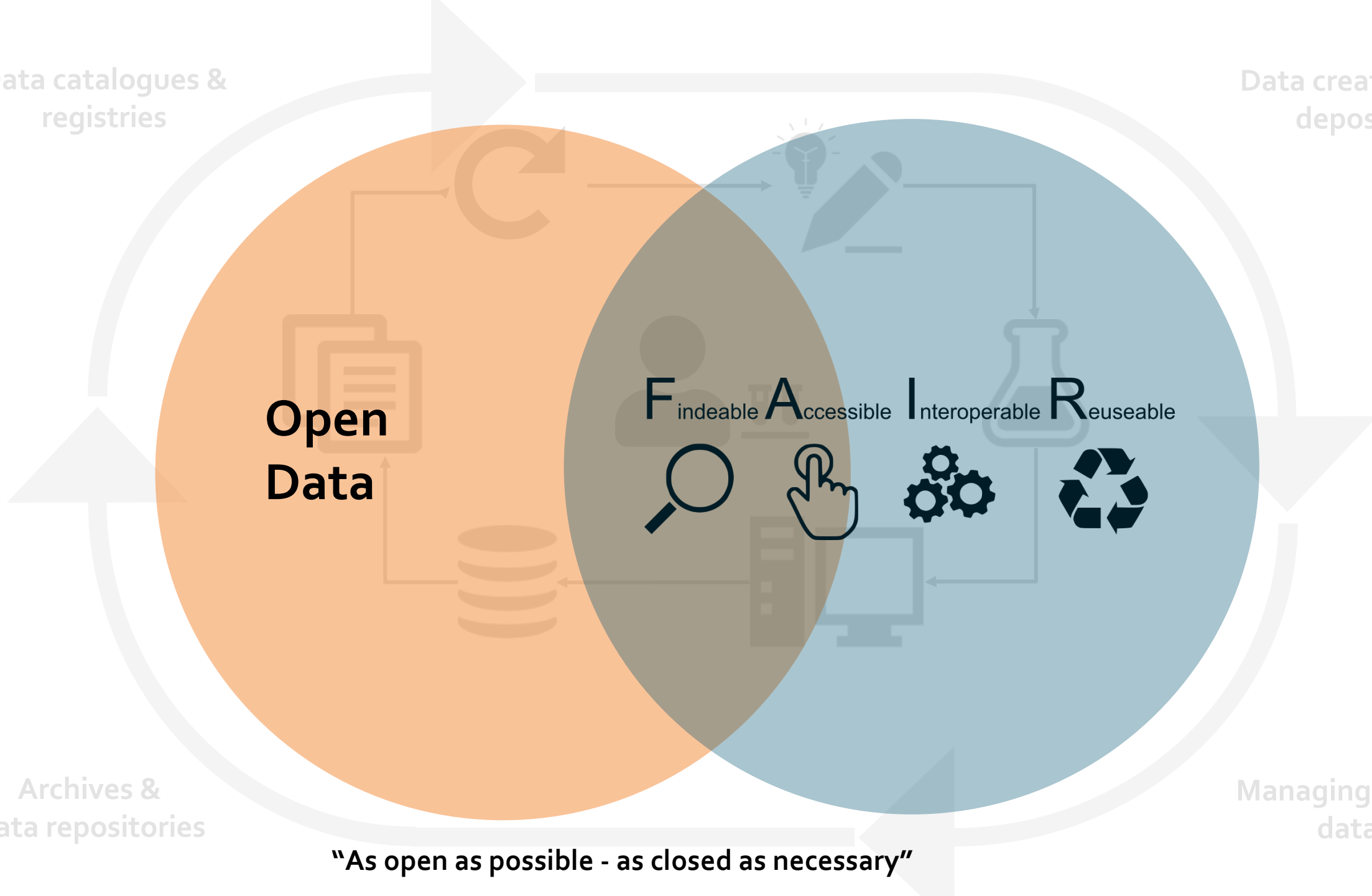
Open  
Data

F<sub>indeable</sub> A<sub>ccessible</sub> I<sub>nteroperable</sub> R<sub>euseable</sub>

Archives &  
Data repositories

Managing active  
data

"As open as possible - as closed as necessary"



OPEN

SUBJECT CATEGORIES

» Research data  
» Publication  
characteristics

## Comment: The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson *et al.*<sup>#</sup>

There is an urgent need to improve the infrastructure supporting the reuse of scholarly data. A diverse set of stakeholders—representing academia, industry, funding agencies, and scholarly publishers—have come together to design and jointly endorse a concise and measurable set of principles that we refer to as the FAIR Data Principles. The intent is that these may act as a guideline for those wishing to enhance the reusability of their data holdings. Distinct from peer initiatives that focus on the human scholar, the FAIR Principles put specific emphasis on enhancing the ability of machines to automatically find and use the data, in addition to supporting its reuse by individuals. This Comment is the first formal publication of the FAIR Principles, and includes the rationale behind them, and some exemplar implementations in the community.

Received: 10 December 2015

Accepted: 12 February 2016

Published: 15 March 2016





Identifiers.org



Identifiers.org



# community metadata standards

+

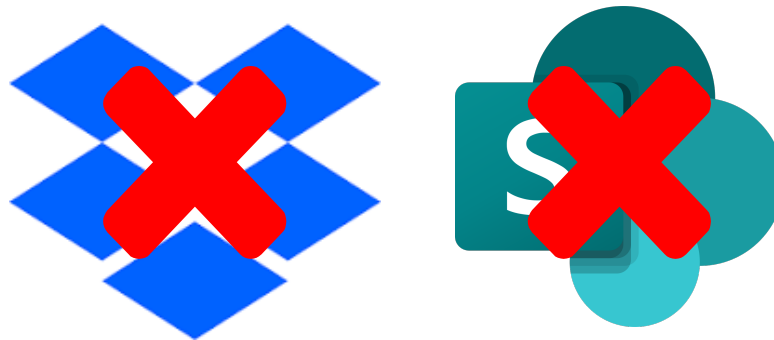








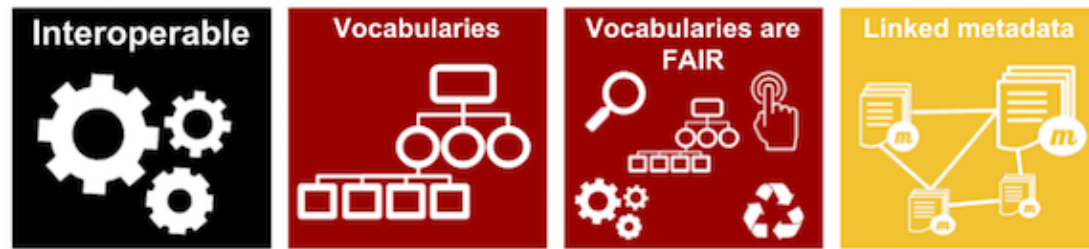
HTTP, FTP, SMTP, ...

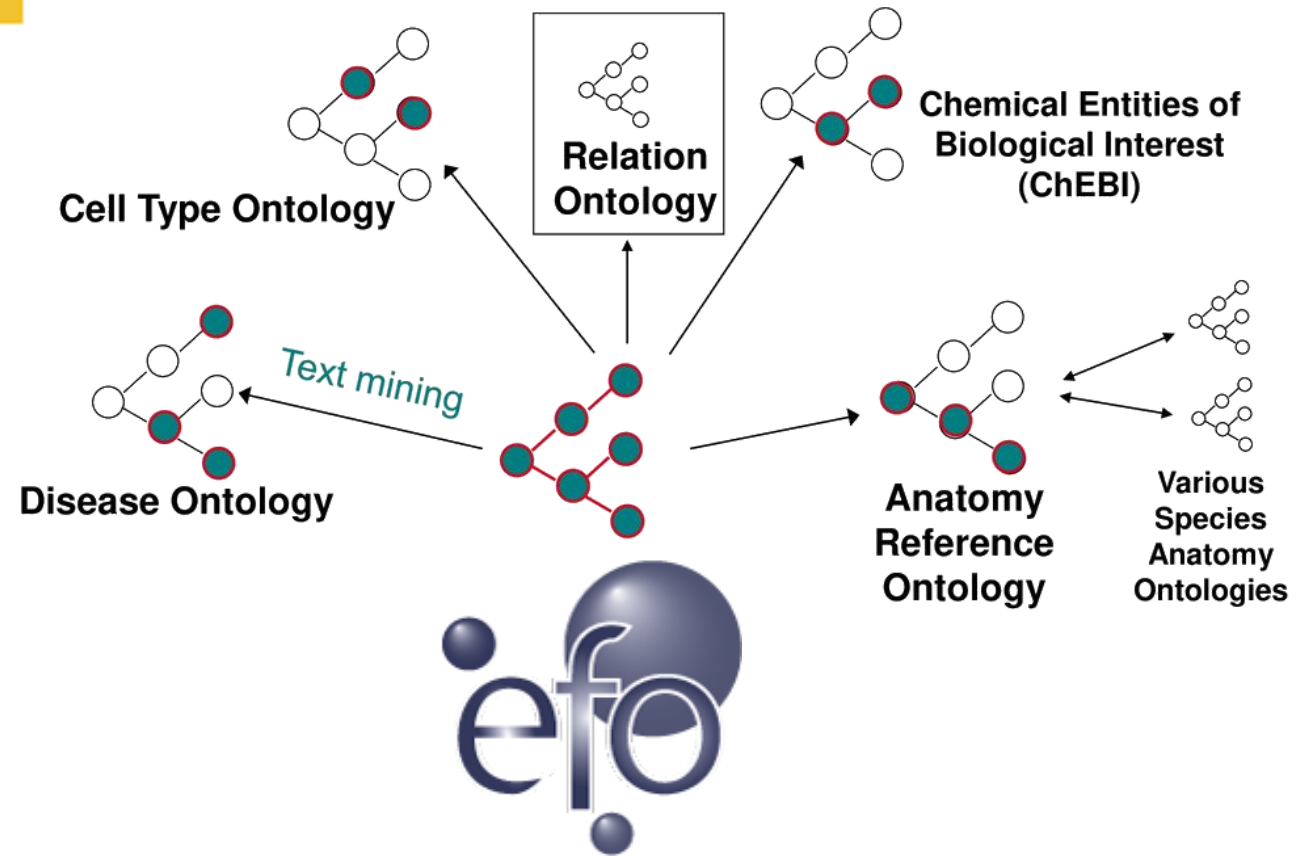
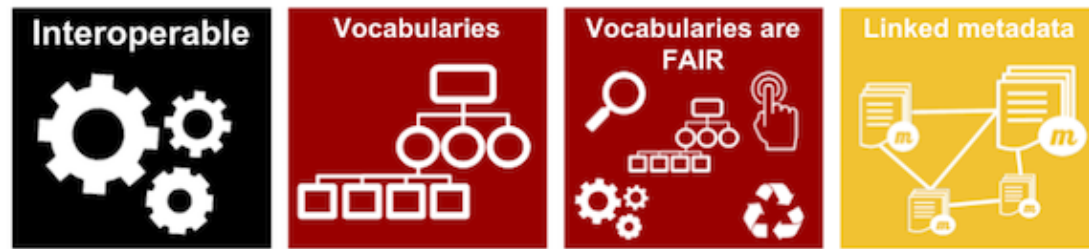


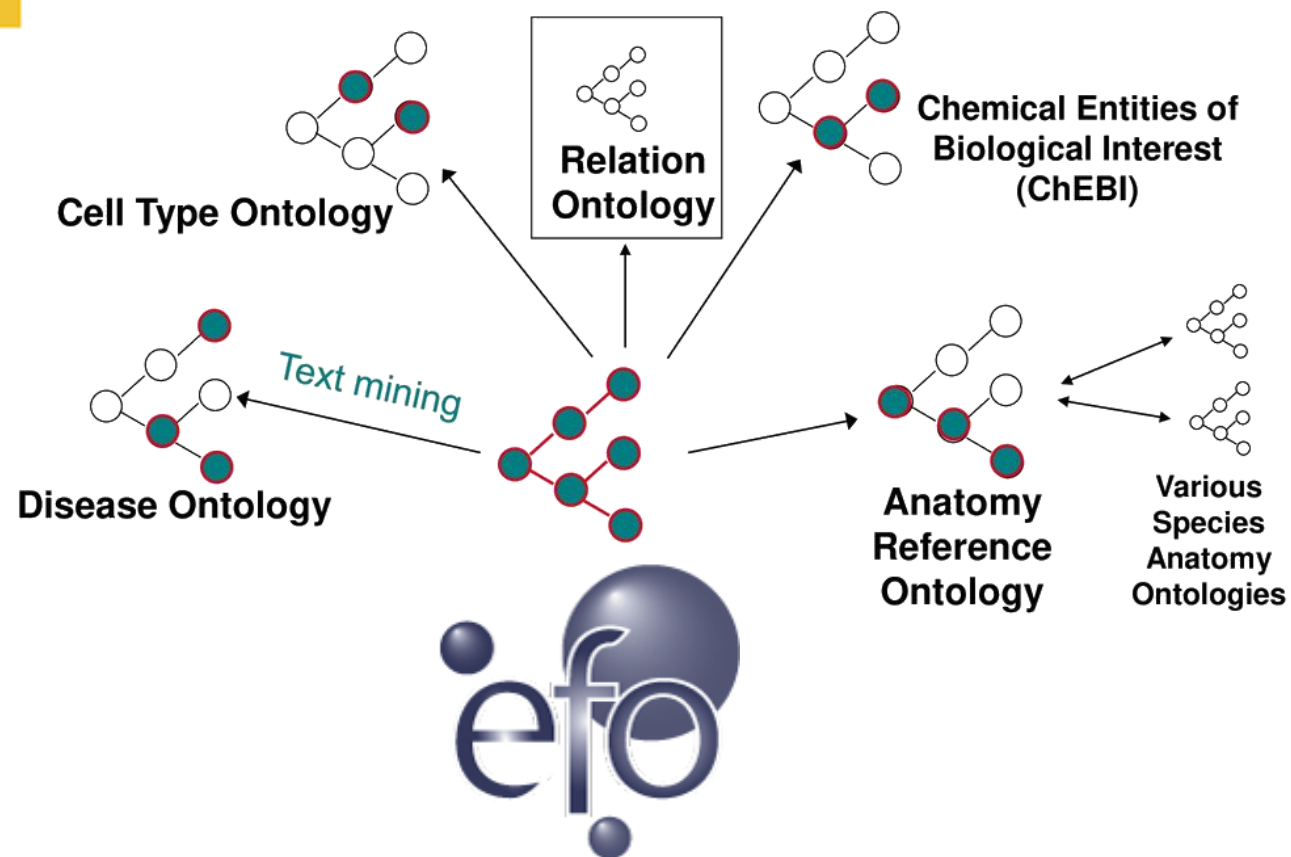
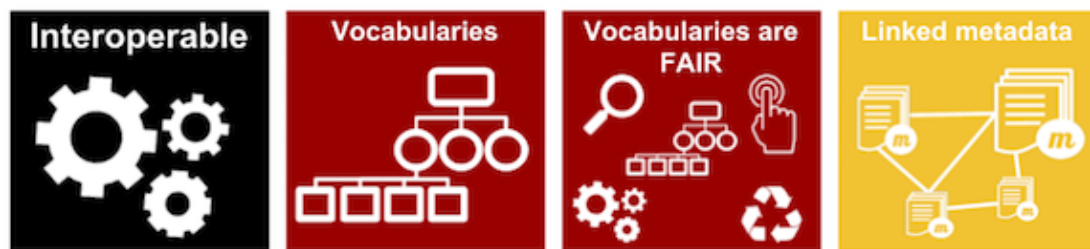
















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Describe the scope of your data: for what purpose was it generated/collected?

Mention any particularities or limitations about the data that other users should be aware of.

Specify the date of generation/collection of the data, the lab conditions, who prepared the data, the parameter settings, the name and version of the software used.

Is it raw or processed data?

Ensure that all variable names are explained or self-explanatory

Clearly specify and document the version of the archived and/or reused data.



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**Is it raw or processed data?**

**Ensure that all variable names are explained or self-explanatory**

**Clearly specify and document the version of the archived and/or reused data.**



Ideal:



**But also more closed license possible - has to be defined !**



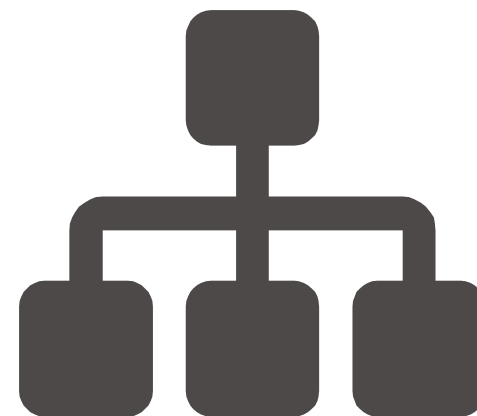
Where does the sample come from?

Where other analysed performed on the same sample?

On what is this based?

Which reference data was used?

....





MAGE-TAB  
EFO  
MIAME  
ISA-TAB  
PDBx/mmCIF

FAIRsharing

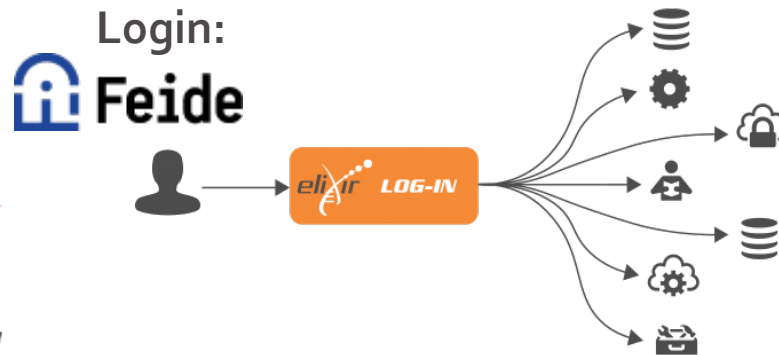
# Data Steward Wizard

Adapted for users & laws  
in Norway



# DSW

[elixir-no.ds-wizard.org](https://elixir-no.ds-wizard.org)



compatible  
**SCIENCE  
EUROPE**

