DFG

TRR 170
LATE ACCRETION
ONTO TERRESTRIAL PLANETS

TRR 170 DATA WEBINAR SERIES 2021

Research Data Management (RDM) & Data Management Plans (DMP)

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DLR

berlin

Freie Universität Berlin

Westfälische Wilhelms-Universität Münster

für Natur
MUSEUM FÜR NATURKUNDE
BERLIN

Morning Session

10:00 Welcome & Technicalities

10:15 Introduction into RDM

- What is research data ?
- Why manage research data ?
- How to manage your data
- Share your data & what to share
- TRR 170 services

10:45 Questions & answers

11:00 Introduction into DMP

- What is a DMP?
- Why do we need DMPs ?
- What should be in a DMP ?
- The reality of DMPs

11:30 Questions & answers

11:45 Information about afternoon activities

Afternoon Session

14:00 How to deposit data to **TRR170-DB**

- Hands-on exercise: deposit test dataset and add metadata
- Questions & answers (Elfrun & Alex)

15:00 How to setup a **DMP**

- Demo: How to setup a **DMP**
- Questions & answers (João)

15:45 Wrap up webinar & hands-on exercises

TRR170-DB ongoing services and support

What are Your Thoughts About Research Data Management ?

Vote at **www.slido.com** with **#761411**

or use QR code

Poll Results: What are Your Thoughts About Research Data Management ?

Research Data Management (RDM)

Research data management

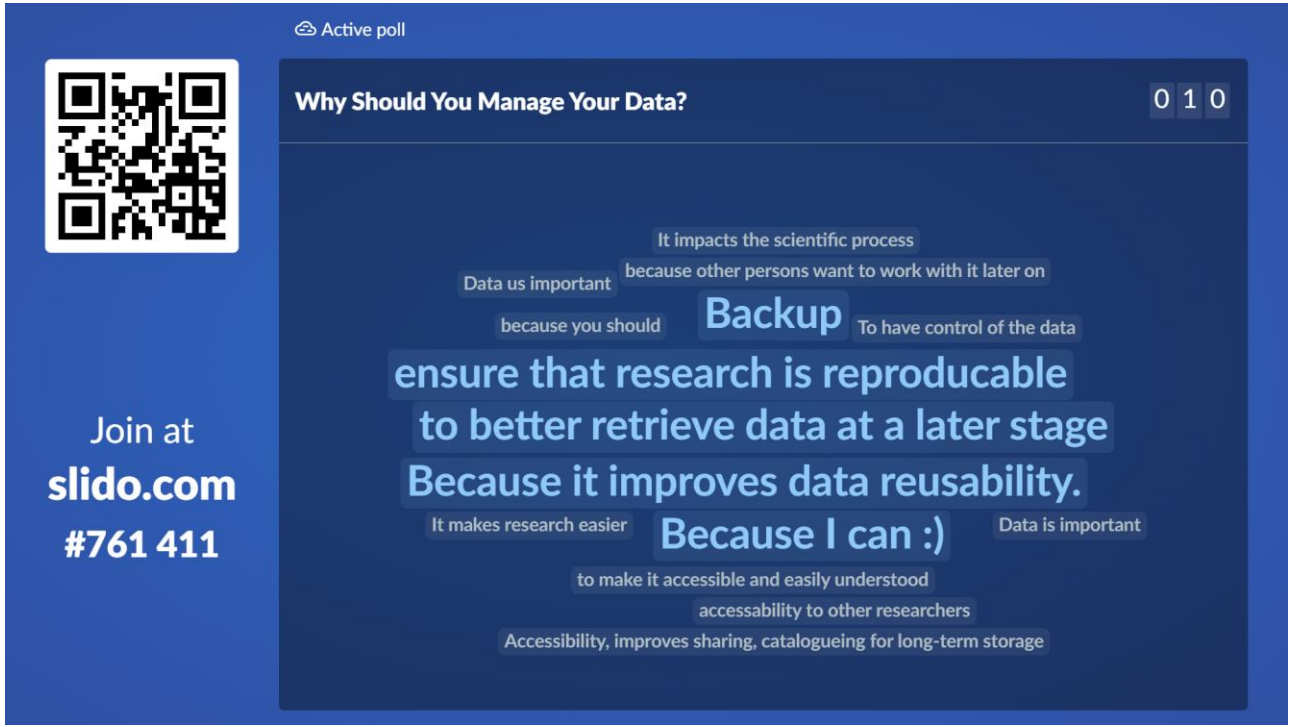
- Organization of research data
- Ensure reliable verification of research results
- Allows for new and innovative research

What Is Research Data ?

Vote at **www.slido.com** with **#761411**

or use QR code

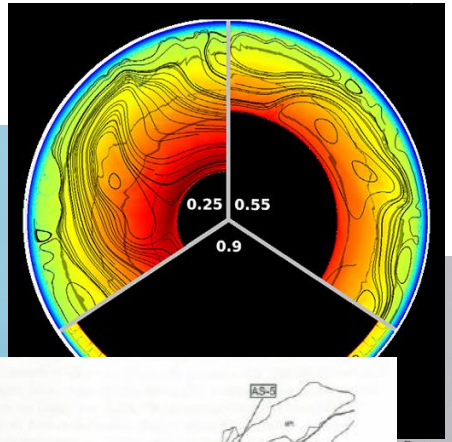
Poll results

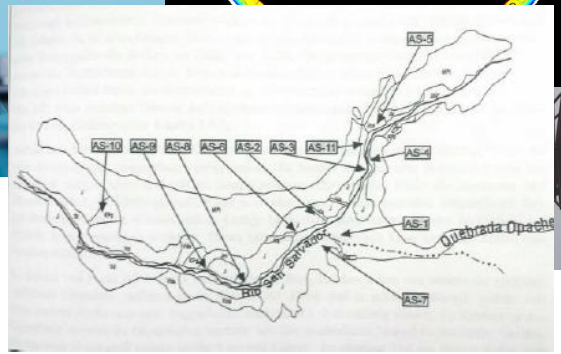


Research Data Come in Many Different Ways …

5.1 Rechts- und Hochwerte der Aufschlußpunkte (UTM)

Bezeichnung	Rechtswert	Hochwert
AN-1	503856	7529029
AN-2	499717	7522613
AN-3	499110	7524663
AN-4	496539	7526420
AA-1	496995	7522107
AA-3	495942	7516470
AA-4	497775	7518952
AA-5	497894	7523927
AA-6	496125	7515781





Research Data Come in Many Different Ways …

- Samples
- Observational
- Experimental
- Simulation data
- Derived or compiled data

… stored in various formats

… to produce original research results

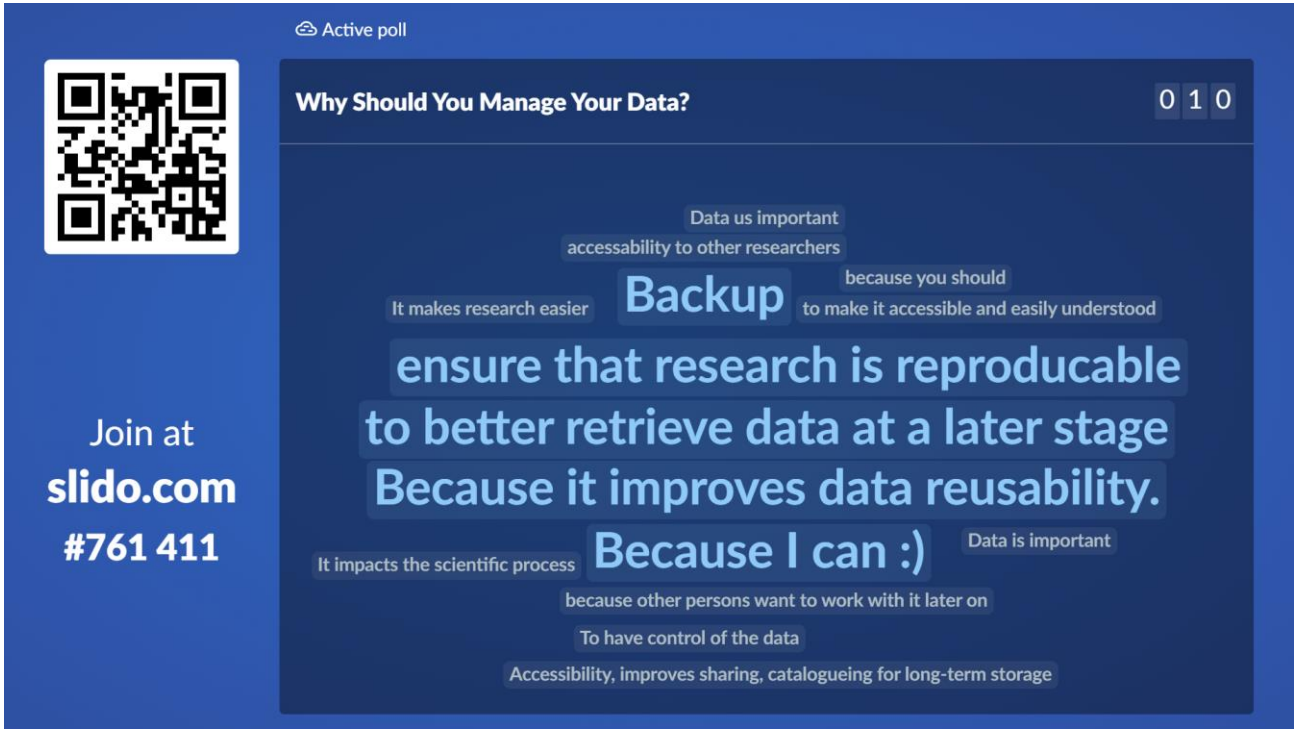
Anything and everything produced in the course of research (Lynch, 2014)

Why Should You Manage Your Data?

Vote at **www.slido.com** with **#761411**

or use QR code

Poll Results



Benefits of Managing Your Data

- ✓ Conduct your research more effectively
- ✓ Easier to check and verify research results
- ✓ Your data can be cited & reused by other researchers
- ✓ Easier to exchange data with colleagues
- ✓ Providing supplementary data for your research paper
- ✓ Be **compliant with journals** that require data access during and after the publication process
- ✓ Be **compliant with research funding organizations**

Data Management Requirements

2010 - Funding bodies of the Alliance of Science Organizations

2015 - DFG Guidelines for the Handling of Research Data

Research data have to be F.A.I.R. & open

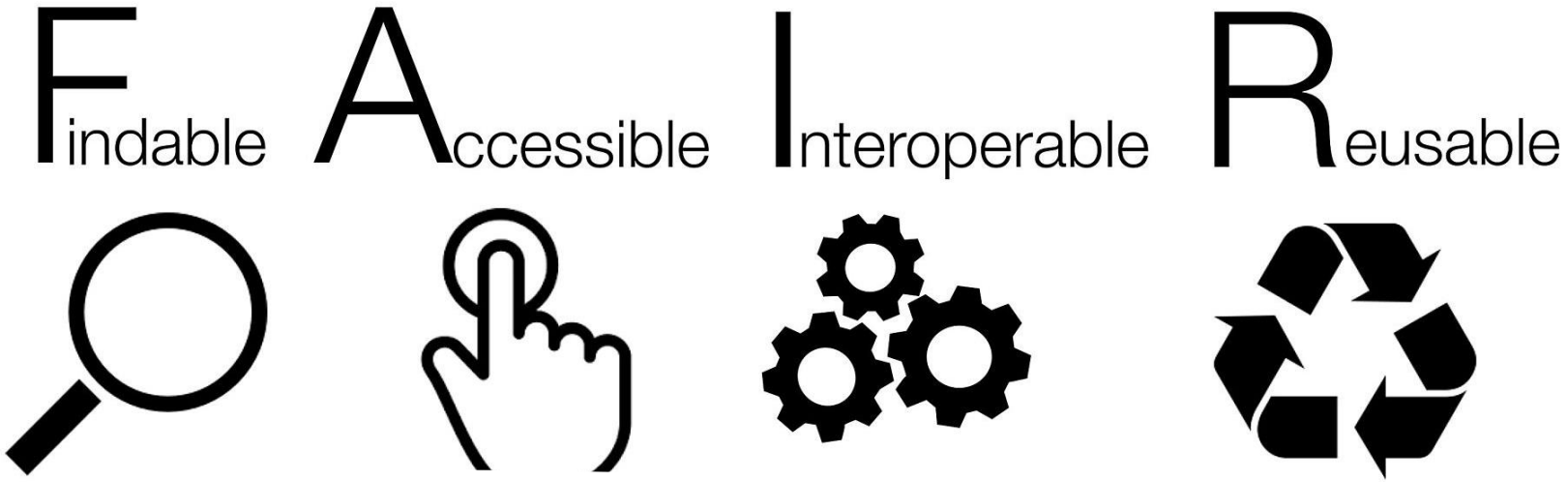
Make your data F.A.I.R. via the Data Life Cycle

Make Your Data F.A.I.R. & Open - Where to start ?

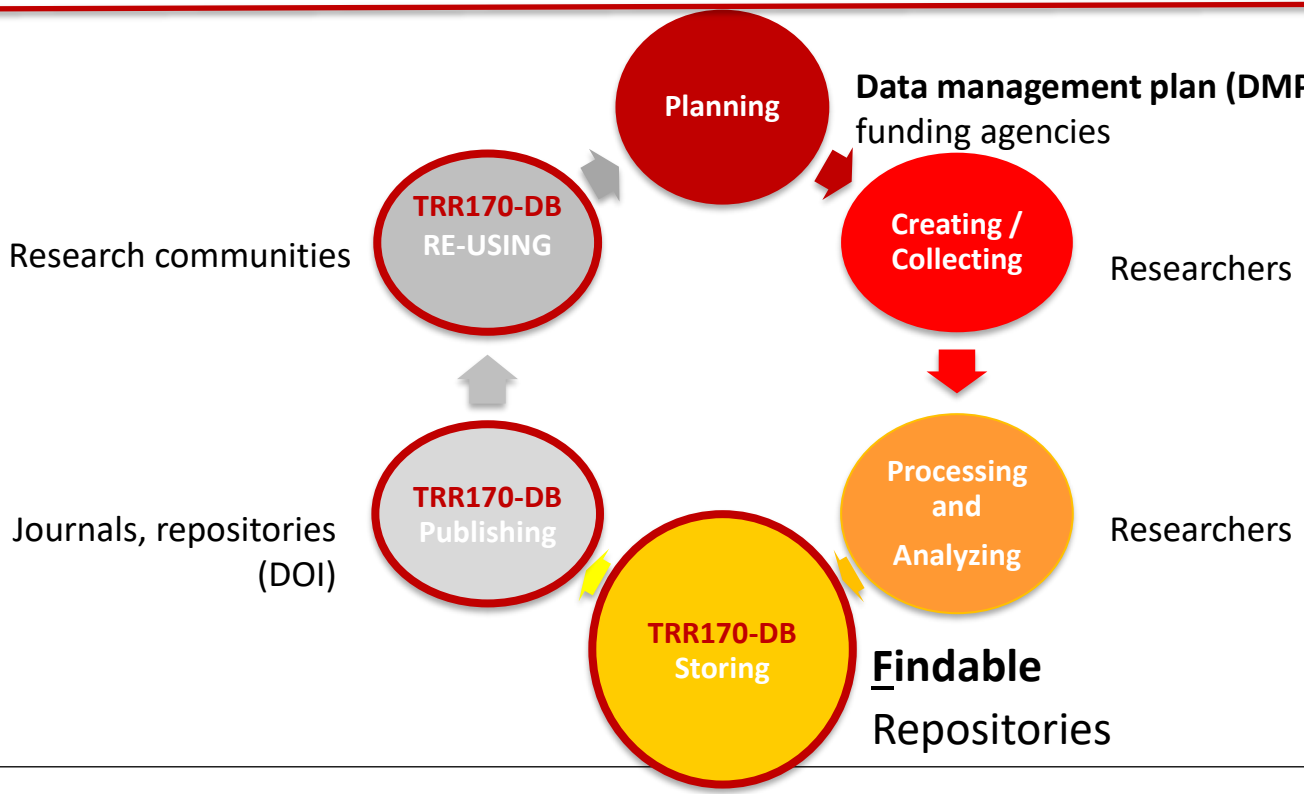
- Talk to your advisor / research program manager early in the research process
- Manage all research data products (notes, code, data, etc.)
- Set up a data management plan (DMP)

How to Make Your Data F.A.I.R. via the Data Life Cycle

The F.A.I.R. Principles



TRR170-DB Repository - Data Life Cycle



Findable

Make your data findable:

- Deposit in **trustworthy repository**
- Describe your data using rich **metadata**
- Publish your data using a **digital object identifier (DOI)**

➢ Exercise in the afternoon

We gratefully acknowledge the insightful comments of Elizabeth P. Turtle, Jason W. Barnes, Jani Radebaugh, and an anonymous reviewer. Pietro Matteoni was supported by Latium Region's Study and Knowledge Promotion (DiSCo) Programme 2018-19, European Social Fund 2014-20.

Open Research

Data Availability Statement

SAR data and related by-products used in this manuscript can be accessed from the PDS Cartography and Imaging Science Node (https://pds-imaging.jpl.nasa.gov/volumes/radar.html). Data of the geomorphological map (Figure 1b) and of the rose diagrams (Figure 2) are available on TRR 170-DB (Matteoni et al., 2020).

Supporting Information

References

Crossref | ADS | Web of Science® | Google Scholar |

Mastrogiuseppe, M., Poggiali, V., Seu, R., Martufi, R., & Notarnicola, C. (2014). Titan dune heights retrieval by using Cassini Radar Altimeter. *Icarus*, **230**, 191–197. https://doi.org/10.1016/j.icarus.2013.09.028

Crossref | ADS | Web of Science® | Google Scholar |

Matteoni, P., Mitri, G., Poggiali, V., & Mastrogiuseppe, M. (2020). Replication data for: Geomorphological analysis of the southwestern margin of Xanadu, Titan: Insights on tectonics. TRR 170-DB. https://doi.org/10.35003/MR6ZDS

Google Scholar |

Maue, A., Burr, D., Levy, J. S., & Nathan, E. (2018). Updating the global map of Titan fluvial features and investigating downstream radar brightness trends. Planetary Geologic Mappers Meeting 2018,

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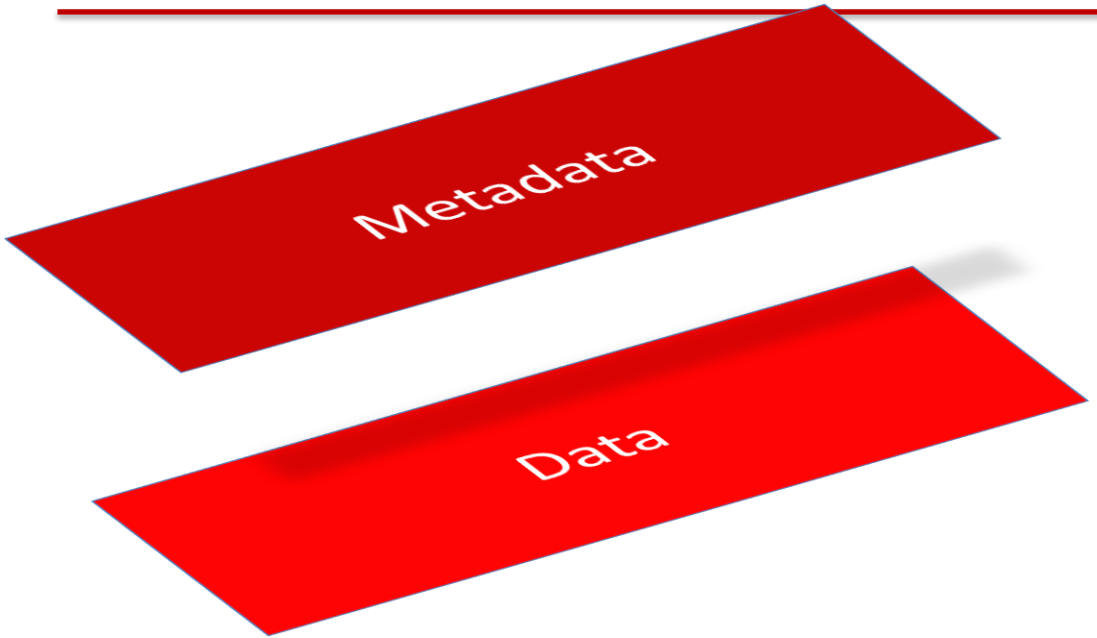
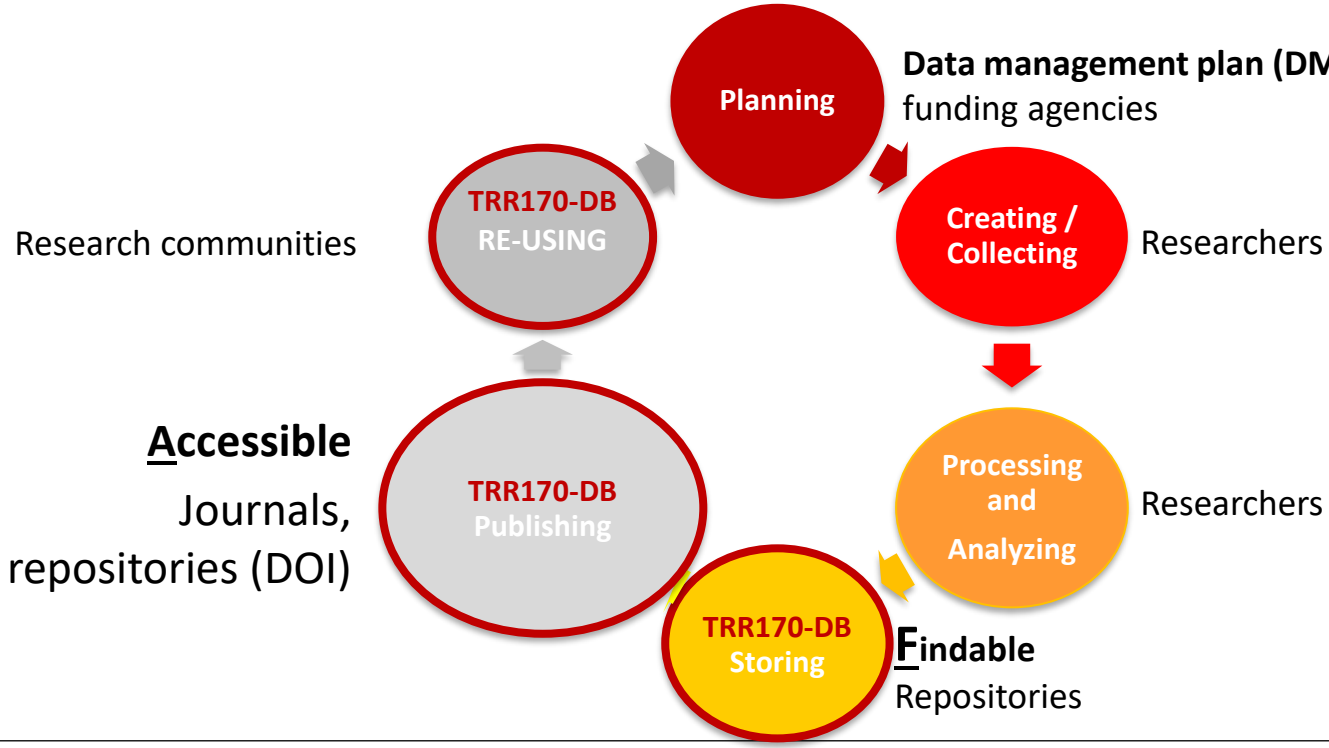
Research Data is Described by Metadata



Metadata
is data that provide information about research data

TRR170-DB Repository - the Data Life Cycle



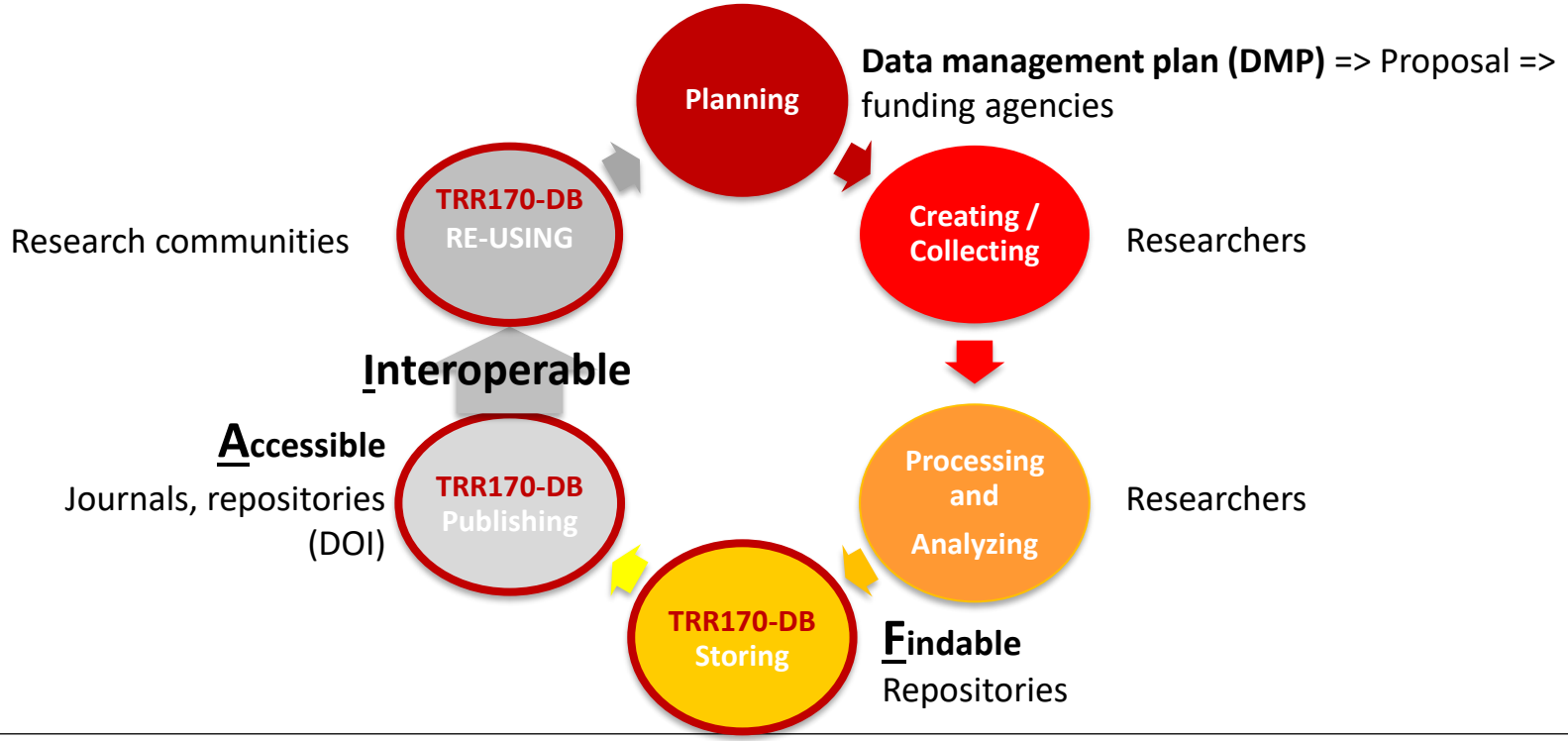
Accessible

Once the user finds your data, explain how they can be accessed:

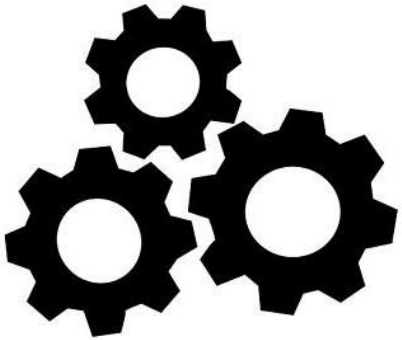
- **Terms of use**
- **Restrict sensitive data** to a relevant group
- Publish **only metadata** of sensitive data

➢ Exercise in the afternoon

TRR170-DB Repository - the Data Life Cycle



Interoperable

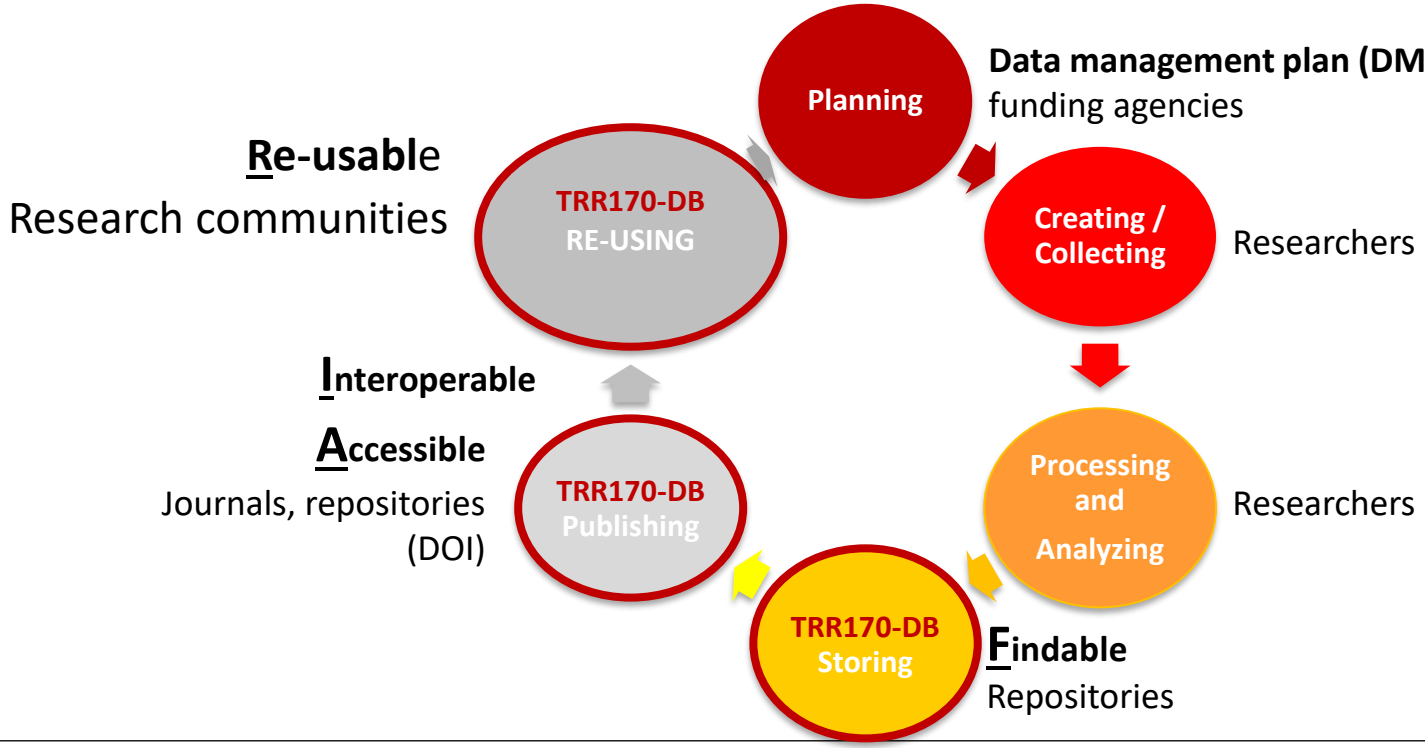


Data need to be integrated with other similar data:

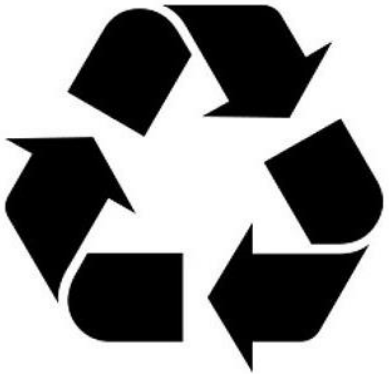
- Use **standard file formats**
- Use same mutual vocabulary (ontology)
- Link your **metadata** to other relevant metadata or information

➢ Exercise in the afternoon

TRR170-DB Repository - the Data Life Cycle



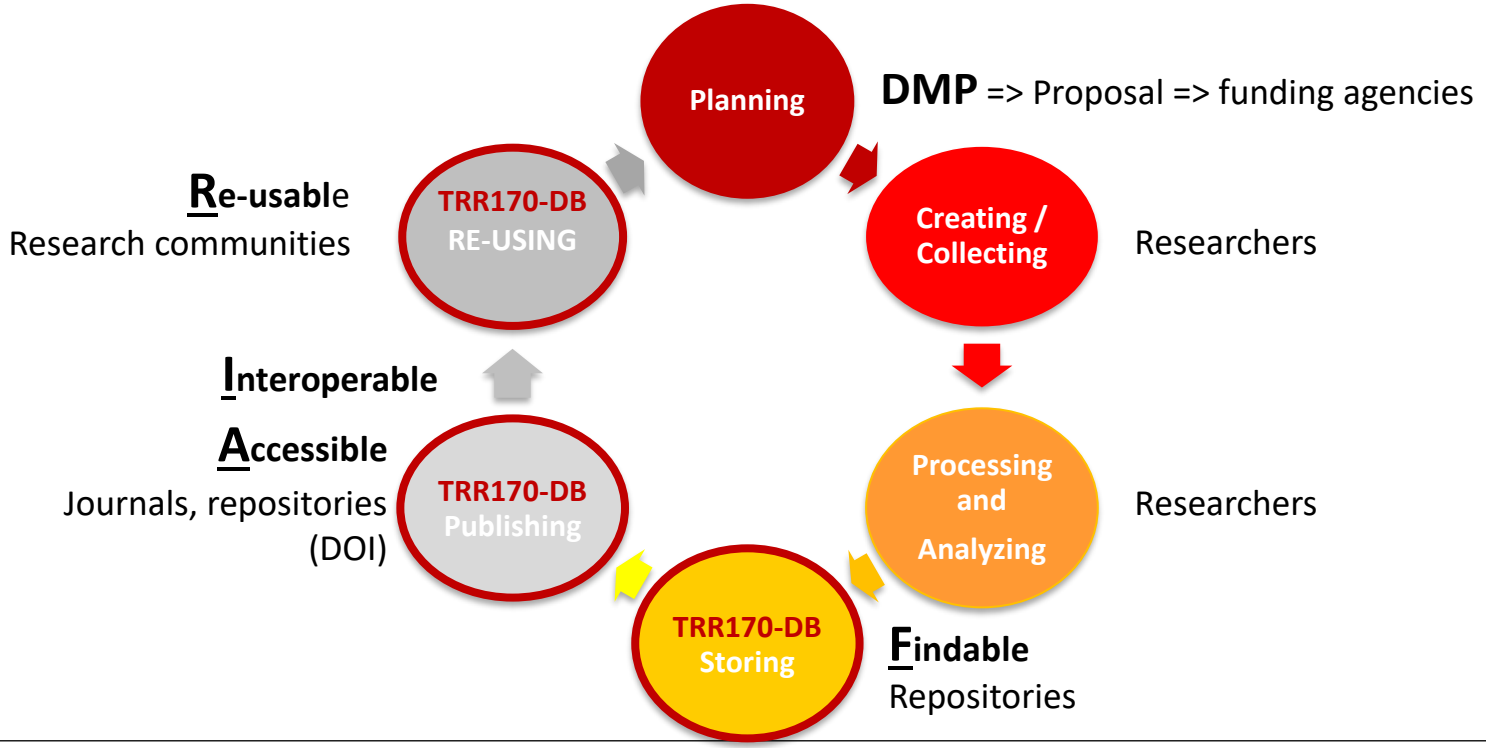
Reusable



- **Metadata**: **use** vocabulary of your research community
- **Provenance**: who produced the data and which methods were used (i.e., software codes, analytical procedures, …)
- Based on your **Terms of Use** agreement or a **license** you regulate the use of your data (i.e., licensed resource such as ‚Creative Commons‘)

➢ Exercise in the afternoon

TRR170-DB Repository - the Data Life Cycle: F.A.I.R. Data



Data Management Requirements

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What is Open Data ?

“Open data should be available to everyone to access, use, and share.”

(GO FAIR, 2018)

F.A.I.R. Data Are Not Neccessarily Open Data

Once the user

- finds your data and
- accessed the metadata of your data

via a repository, the user has to follow your

Terms of use / CC: open versus restricted

Creative Commons (CC)

The Six Creative Commons Licenses

	Derivatives Can Be Shared	Derivatives Can Be Shared ONLY IF You Share Alike	Derivatives CANNOT Be Shared
Commercial Use Allowed			
Commercial Use NOT Allowed			

All Licenses Require Attribution

https://creativecommons.org/

Creative Commons (CC)

CC0: no copyright restriction => the **data are open** => public domain

https://creativecommons.org/

Creative Commons (CC)

TRR170-DB Repository default is CC0: public domain

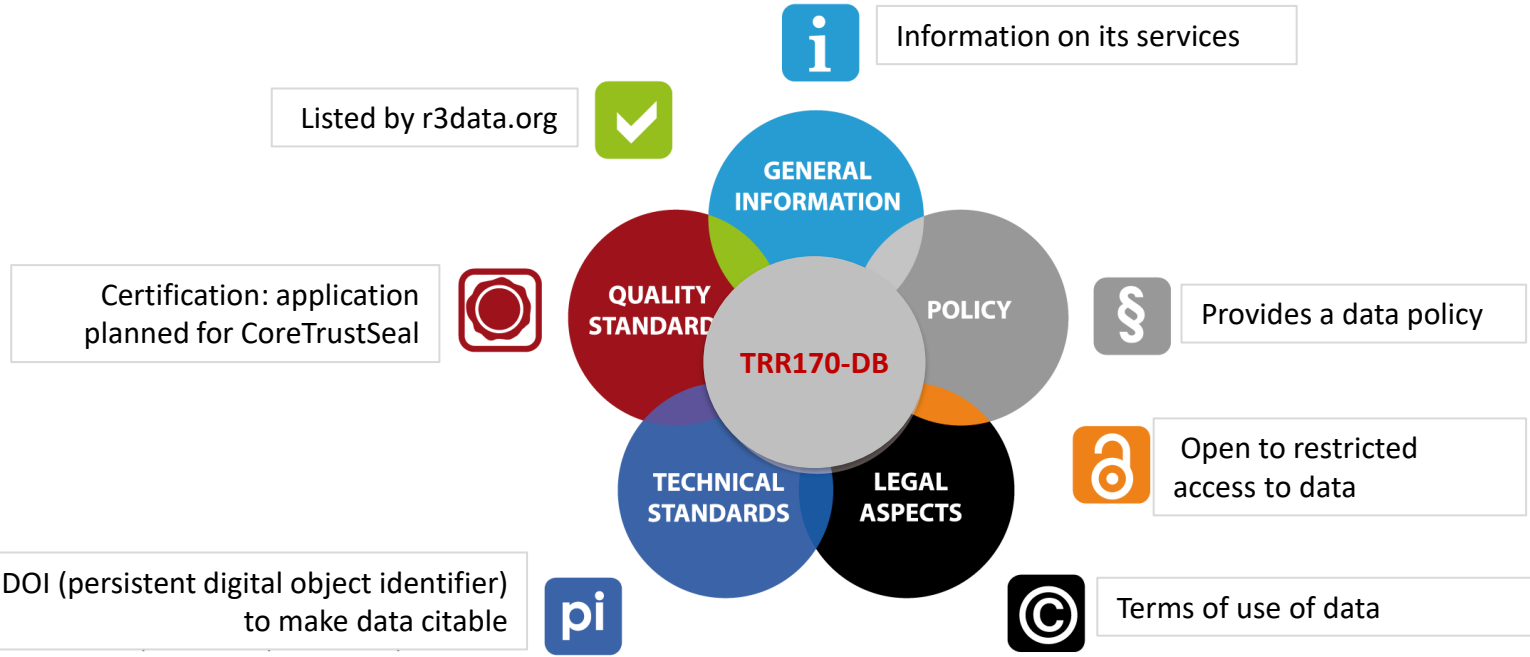
Default can be changed in

Terms of Use

https://creativecommons.org/

TRR170-DB Support & Services

info.planetary-data-portal.org



Summary

- Research data management benefits your research process
- Research data management supports you in complying with funding agencies‘ data regulations: **F.A.I.R.** and (in best of all cases) **open data**
- You regulate access to your data => Terms of use (repository), creative common licenses (legally binding via CC)

Summary

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Support by the TRR170-DB Repository Team

Further Resources

- Creatice commons, https://creativecommons.org/
- Marking your work with a CC license, https://wiki.creativecommons.org/wiki/Marking_your_work_with_a_CC_license
- Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* (2016), The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3,** doi.org/10.1038/sdata.2016.18.
- ANDS (2015), The FAIR data principles, ands.org.au/working-with-data/fairdata
- Test your data for FAIRness: https://fairaware.dans.knaw.nl/
- DFG handling of research data, https://www.dfg.de/en/research_funding/proposal_review_decision/applicants/research_data/


Open Access
DOI
FAIR
Openess
DataCite
Repository
Preservation
Open data
FAIR
Knowledge
DOI
Repository
Archiving
Publishing

Thank You !


DataDOI
Open Access
FAIRest
DOI
DOI
Open science
Storage
Research data
Open data
Reuse
Research data
OpenAIRE
FAIR

References

Slide 5: Whyte, A., Tedds, J. (2011). ‘Making the Case for Research Data Management’. DCC Briefing Papers. Edinburgh: Digital Curation Centre

Slide 5: datasupport.researchdata.nl

Slide 7: Lynch (2014) slideplayer.com/slide/4646268/

Slide 13: GO FAIR (2018) https://www.go-fair.org/fair-principles/

Slide 13: https://www.flaticon.com/premium-icon/icons/svg/3511/3511155.svg

Slide 14-18: Australian Research Data Commons

Silde 19, 20: https://creativecommons.org

Slide 22: Data Management Planning” research guide by NYU Data Services (adapted)