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EGYETEMI KÖNYVTÁR ÉS LEVÉLTÁR  
UNIVERSITY LIBRARY AND ARCHIVES

# DATA SECURITY

## Short- and long-term storage options, practices

Tibor Móring

Repository administrator

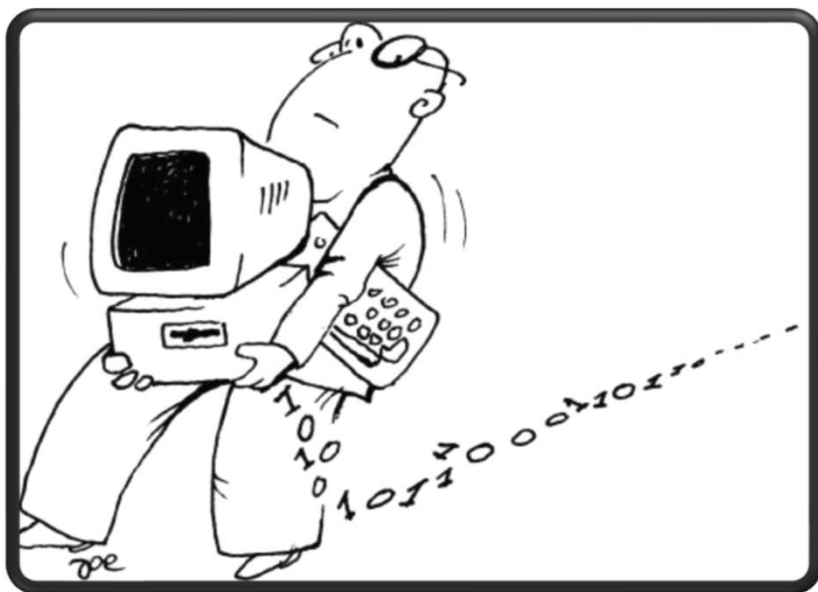
ELTE University Library and Archives

Online "nyílt nap" az Open Access-ről. Budapest Corvinus Egyetem, 2022. október 25.



# DATA LOSS

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## *Common Causes of Data Loss*

Human errors

Viruses

Hard drive  
damage

Computer  
theft

Liquid damage

Disasters



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# PERSONAL DATA, ANONYMISATION

- A name or surname
- A home address
- An e-mail address such as name.surname@company;
- Identification card number;
- Location data;
- Internet protocol (IP) data;
- Cookie id;
- The advertising identifier on your phone;
- data held by a hospital or doctor, which could be a symbol that uniquely identifies a person.

**Personal data** is any information that relates to an identified or identifiable living individual. Different pieces of information, which collected together can lead to the identification of a particular person, also constitute personal data.

Personal data that has been de-identified, encrypted or pseudonymised but can be used to re-identify a person remains personal data and falls within the scope of the GDPR.

Personal data that has been rendered anonymous in such a way that the individual is not or no longer identifiable is no longer considered personal data. For data to be truly anonymised, the anonymisation must be irreversible.

<https://amnesia.openaire.eu/>



Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=HU>



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# SENSITIVE DATA

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- Race or ethnic origin;
- Political opinion;
- Religious beliefs;
- Trade union membership;
- Genetic and biometric data for the purpose of uniquely identifying persons;
- Health data;
- The sexual life or sexual orientation

For details on the processing of sensitive data, see [Article 9 of the General Data Protection Regulation](#).



# STORAGE OPPORTUNITIES

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## Short-term storages

- Pen drive
- Winchester
- Cloud (Dropbox, OneDrive etc.)

### Good practice

If possible, store our data in 3 different locations, it could increase the effectiveness of data security..  
(Here-near-far)

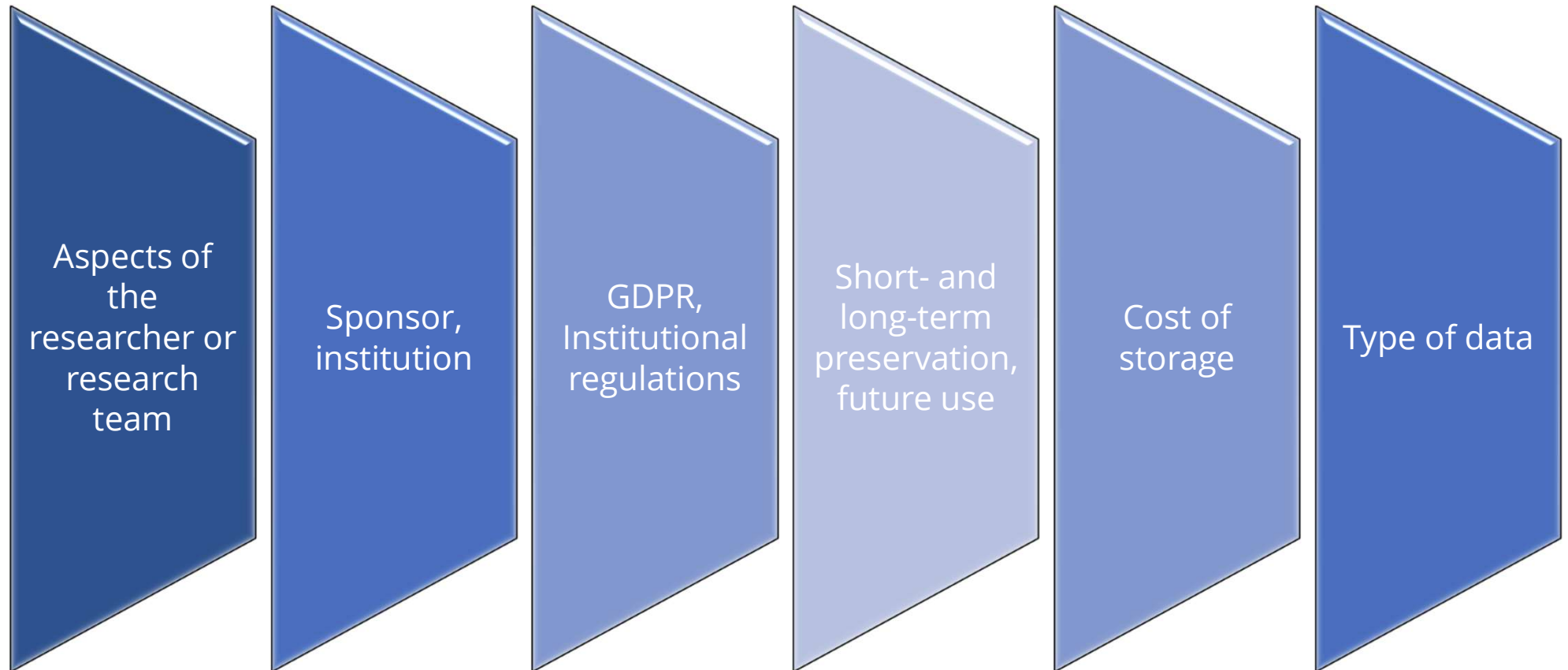
## Long-term storages

- Data repository:
- Interdisciplinary repositories (Zenodo etc.)
- Other repositories, a common search engine appropriate to the subject area: [re3data.org](https://re3data.org), <https://repositoryfinder.datacite.org/>



## BUT WHAT, HOW MUCH AND WHERE?

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Source: <https://library.soton.ac.uk/researchdata/storage>



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# DATA MANAGEMENT – CHECKLIST I.

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- ✓ Do the data directly support research findings that have been or will be published?
- ✓ What are the funder's or sponsor's requirements? Many funders require the preservation and sharing of key data underpinning research publications for set periods after the completion of the research. Check any relevant policies and contract terms;
- ✓ What are the publisher's requirements? Some publishers, e.g. the Nature Publishing Group, require authors to make data available as a condition of publishing;
- ✓ Do the data have long-term research value? Would you use them in future research? Would other researchers be able to use them?



## DATA MANAGEMENT – CHECKLIST II.

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- ✓ What is the likely cost of retaining the data in relation to the cost of recreating the data or the impact of losing the data? The results of simulations may be easily reproducible; experimental data may be reproducible cheaply or only at great cost, depending on the nature of the experiment; time series data or survey findings are by their nature irreplaceable, and may be highly valuable;
- ✓ Do you have permission to keep/publish the data? It may not be possible to retain or publish secondary data obtained under licence;
- ✓ Are you legally entitled to keep all the data, or publish or otherwise process them? The Data Protection Act, for example, and the scope of any consents for collection and processing of personal data, might affect what data can be kept, and what can be done with them;





## DATA MANAGEMENT – CHECKLIST III.

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- ✓ Can you afford to keep the data? Can the cost of archiving the data be recovered from the sponsor? The Research Councils as well as some other funders accept that data management costs may be recovered through grants;
- ✓ Do you have space to keep the data? What preservation resources are available to you?



# ADVICE ON DATA STORAGE

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## Good practice



*Projekt neve, azonosítója*



*Kutató nevének kezdőbetűi*



*Date of the experiment,  
date range*



*Version number of  
the file*

## Bad practice



*Special file formats*



*Final-finally\_v1*



*Special characters (~!@#  
\$% ^)*



*(1) (2) (3)...*



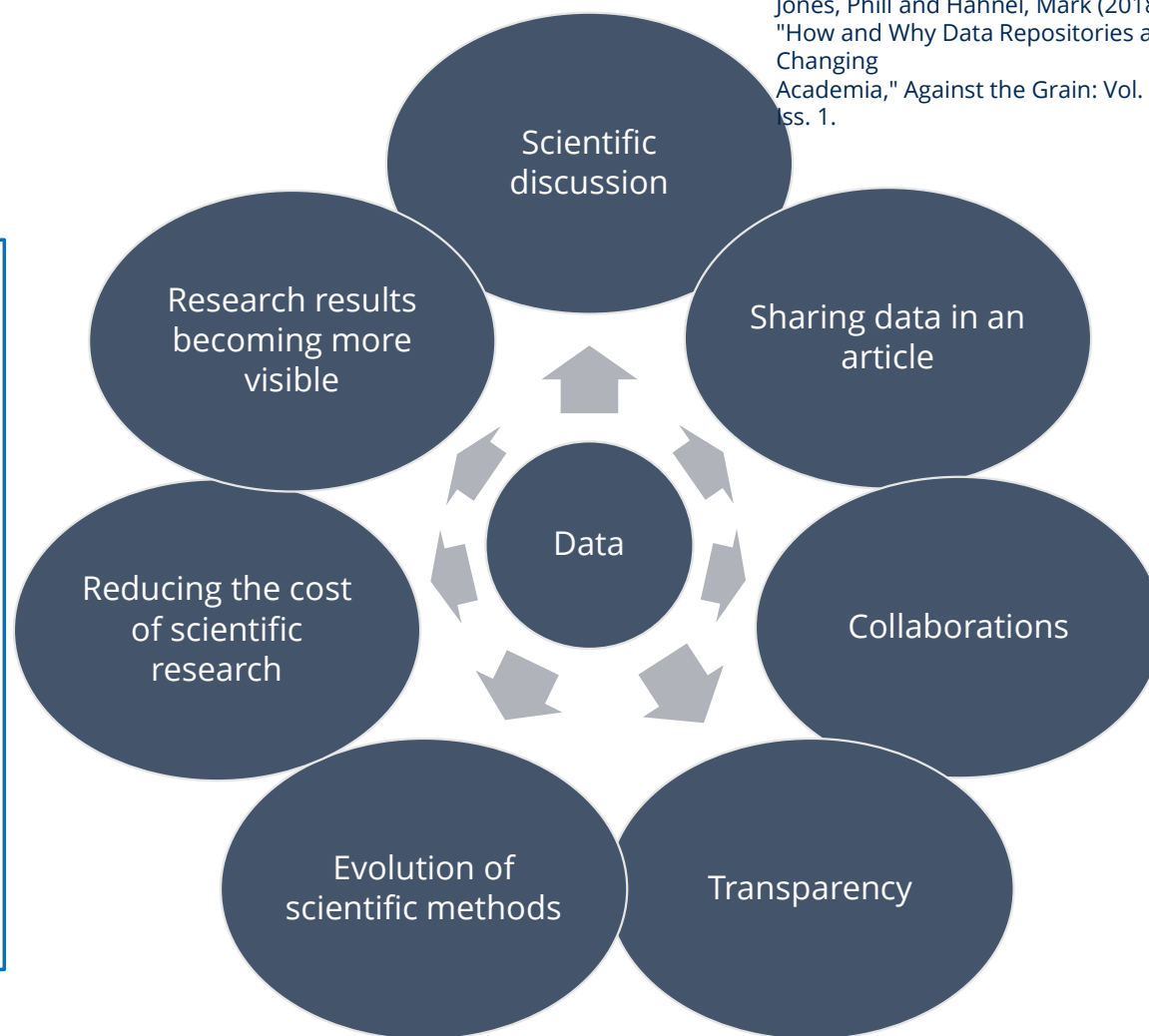
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# WHY?

- In the scientific discussion, open research data can be presented, and research results are immediately visible.
- Any form of research data can be linked to the resulting publication to support the research.
- Open research data can be used to create new collaborations and partnerships.
- Open research data helps transparency.
- The cost of scientific research can be reduced by using research data produced by others in a similar field to our own research.
- By making research results more visible, we can in principle achieve higher citation rates.



Jones, Phill and Hahnel, Mark (2018)  
"How and Why Data Repositories are  
Changing  
Academia," *Against the Grain*: Vol. 28:  
Iss. 1.



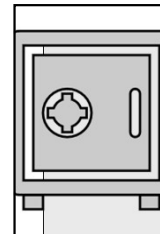
**Source:**

Banzi, R., Canham, S., Kuchinke, W. et al. Evaluation of repositories for sharing individual-participant data from clinical studies. *Trials* 20, 169 (2019). <https://doi.org/10.1186/s13063-019-3253-3>

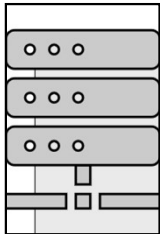
## BENEFITS OF USING DATA REPOSITORY



Efficient and secure data exchange



Secure, long-term storage



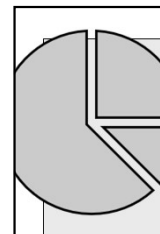
Continuous data curation enhances the security and quality of archiving



Metadata standards facilitate the searchability, visibility and citability of data



Supporting data requests and the transmission of data from source to user



Data usage statistics



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# re3data.org

REGISTRY OF RESEARCH DATA REPOSITORIES

Search...

 Search



From Stakeholder  
Survey and Workshops  
to the New Model for  
User Stories – a Journey

Releasing version 3.1 of  
the re3data Metadata  
Schema

Using the re3data API

re3data offers detailed descriptions of more  
than 2600 repositories. These descriptions  
are based on the re3data Metadata

*re3data.org*

## A. Humanities and Social Sciences

## a. Humanities

## I. Ancient Cultures

1. Prehistory
2. Classical Philology
3. Ancient History
4. Classical Archaeology
5. Egyptology and Ancient Near Eastern Studies

## II. History

1. Medieval History
2. Early Modern History
3. Modern and Current History
4. History of Science

## III. Fine Arts, Music, Theatre and Media Studies

1. Art History
2. Musicology
3. Theatre and Media Studies

## IV. Linguistics

1. General and Applied Linguistics
2. Individual Linguistics
3. Typology, Non-European Languages, Historical Linguistics

## V. Literary Studies

1. Medieval German Literature
2. Modern German Literature
3. European and American Literature
4. General and Comparative Literature and Cultural Studies

## VI. Non-European Languages and Cultures, Social and Cultural Anthropology, Jewish Studies and Religious Studies

1. Social and Cultural Anthropology and Ethnology/Folklore
2. Asian Studies
3. African, American and Oceania Studies
4. Islamic Studies, Arabian Studies, Semitic Studies
5. Religious Studies and Jewish Studies

## VII. Theology

1. Protestant Theology
2. Roman Catholic Theology

## VIII. Philosophy

1. History of Philosophy
2. Theoretical Philosophy
3. Practical Philosophy

## b. Social and Behavioural Sciences

## I. Education Sciences

1. General Education and History of Education

Filter

Reset all

Subjects

- Humanities and Social Sciences (226)
  - Humanities (51)
    - Ancient Cultures (4)
      - Prehistory (1)
      - Classical Philology (1)
      - Ancient History (1)
  - History (20)
    - Medieval History (3)
    - Early Modern History (2)
    - Modern and Current History (8)
    - History of Science (3)
  - Fine Arts, Music, Theatre and Media Studies (13)
    - Art History (4)
    - Musicology (2)
    - Theatre and Media Studies (2)
  - Linguistics (10)
    - Individual Linguistics (2)
    - Literary Studies (6)
  - Non-European Languages and Cultures, Social and Cultural Anthropology, Jewish Studies and Religious Studies (12)
    - Social and Cultural Anthropology and Ethnology/Folklore (6)
    - Asian Studies (3)
    - African, American and Oceania Studies (2)
    - Islamic Studies, Arabian Studies, Semitic Studies (2)
    - Religious Studies and Jewish Studies (1)
  - Theology (4)
    - Protestant Theology (1)
    - Roman Catholic Theology (2)
  - Philosophy (2)
- Social and Behavioural Sciences (226)
  - Education Sciences (30)
    - General Education and History of Education (3)
    - Research on Teaching, Learning and Training (4)
    - Research on Socialization and Educational Institutions and Professions (2)
  - Psychology (13)
    - Social Psychology, Industrial and Organisational Psychology (1)
  - Social Sciences (141)
    - Sociological Theory (1)
    - Empirical Social Research (58)
    - Communication Science (6)
    - Political Science (44)

Search...

Search

Toogle short help

← Previous 1 2 3 4 5 6 7 ... 10 Next →

Sort by ▾

Found 226 result(s)

LMU-ifo Economics & Business Data Center



EBDC

Subject(s)

Social Sciences Empirical Social Research Economics Economic and Social Policy Social and Behavioural Sciences Humanities and Social Sciences

Content type(s)

Standard office documents Structured graphics Scientific and statistical data formats

Country

Germany

The Economics & Business Data Center (EBDC) is a combined platform for empirical research in business administration and economics of the Ludwig-Maximilian University of Munich (LMU) and the Ifo Institute and aims at opening new fields for empirical research in business administration and economics. In this regard, the EBDC provides innovative datasets of German companies, containing both survey data of the Ifo Institute as well as external balance sheet data. Therefore, the tasks of the EBDC also include the procurement and administration of data sources for research and teaching, the central provision, updating and documentation of external databases, as well as the acquisition of corresponding support tools. Beyond that, the EBDC serves as a contact and central coordinator on licensing economic firm-level datasets for LMU's Munich School of Management and LMU's Department of Economics and supports researchers and guests of the LMU and the Ifo Institute on site. In the future, it will also conduct academic conferences on research with company data.

Alternative Fuels Data Center



AFDC

Subject(s)

Geochemistry, Mineralogy and Crystallography Process Engineering, Technical Chemistry Traffic and Transport Systems, Logistics Electrical Energy Generation, Distribution, Application  
 Economic and Social Policy Public Law Geochemistry, Mineralogy and Crystallography Geosciences (including Geography) Natural Sciences  
 Thermal Engineering/Process Engineering Engineering Sciences Systems Engineering Computer Science, Electrical and System Engineering Electrical Engineering Economics  
 Social and Behavioural Sciences Humanities and Social Sciences Jurisprudence

Content type(s)

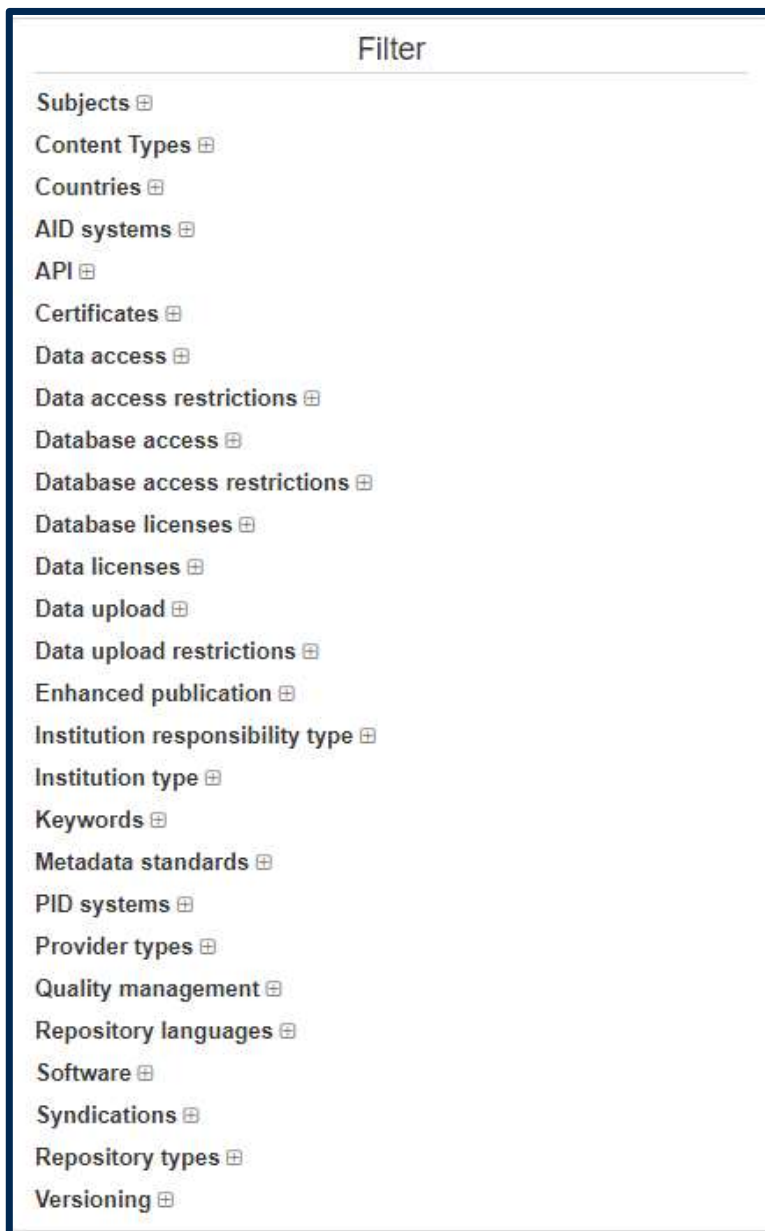
Images Raw data Plain text Scientific and statistical data formats Standard office documents Structured graphics Software applications Audiovisual data

Country

United States

The Alternative Fuels Data Center (AFDC) is a comprehensive clearinghouse of information about advanced transportation technologies. The AFDC offers transportation decision makers unbiased information, data, and tools related to the deployment of alternative fuels and advanced vehicles. The AFDC launched in 1991 in response to the Alternative Motor Fuels Act of 1988 and the Clean Air Act Amendments of 1990. It

Re3data.org – description of a data repository



**There are several filters in re3data, just some of them:**

- Subjects
- Data upload
- Data access
- Identifiers: PID systems

*...and more:*

Type of repository, versioning, metadata standards

*Re3data filters*



# SZAKIRODALOM

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1. Benefits of using data repository. Banzi, R., Canham, S., Kuchinke, W. et al. Evaluation of repositories for sharing individual-participant data from clinical studies. *Trials* 20, 169 (2019). <https://doi.org/10.1186/s13063-019-3253-3>
2. General Data Protection Regulation (GDPR): <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=HU>
3. Jones, Phill and Hahnel, Mark (2018) "How and Why Data Repositories are Changing Academia," *Against the Grain*: Vol. 28: Iss. 1. <https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=7269&context=atg>
4. Open Sicene. Data management. (Hungarian). <https://openscience.hu/>
5. Data management in Southampton University:: <https://library.soton.ac.uk/researchdata/storage>
6. Repository finders: [re3data.org](https://re3data.org), <https://repositoryfinder.datacite.org/>
7. Personal data: <https://ec.europa.eu/info/law/law-topic/data-protection/reform/what-personal-data-hu>





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# Thank you for your attention!

Tibor Móring

Research supporter librarian

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