Research Data Management at the University of Vienna

Ganguly, Raman
Vienna University Computer Center, University of Vienna : Head of IT Support for Research

Gergely, Eva
IT Support for Research, Vienna University Computer Center, University of Vienna

https://doi.org/10.15017/7360096

universität wien

Research Data Management at the University of Vienna

Raman Ganguly (Vienna University Computer Center, Head of dept. at IT Support for Research)
Eva Gergely (Vienna University Computer Center, Project management at dept. IT Support for Research)

Research Data Management

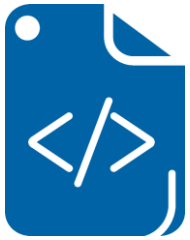
In General and at the University of Vienna

universität wien

Research Data at the University of Vienna

Text files

Spreadsheets



Structured text

Images

*"The University of Vienna recognises the **fundamental importance of research data** for maintaining quality research and academic integrity. The University of Vienna acknowledges that correct and easily retrievable research data are the foundation of and integral to a wide range of research activities. Access to research data is also necessary for the **verification and validation of research** processes and results. Research data have a long-term value owing to their potential for widespread use in academia and society."*

Excerpt from the Research Data Management Policy of the University of Vienna

Research Data Management (RDM)

- Research data management refers to all the activities of working with research data throughout and after the research process:
  - data collection
  - data storage
  - backup
  - data archiving
  - publishing
- Good RDM ist a key part of good scientific practice

Research Data Management Lifecycle – see also “Research Data Management at the University of Vienna Training Course” on Zenodo

FAIR Data Principles

Findable
Data and metadata should be easy to find by both people and machines. Machine-readable and descriptive metadata enables the discovery of interesting datasets.

Accessible
Data and metadata should be archived and made available in such a way that allows easy retrieval and download by machines and people.

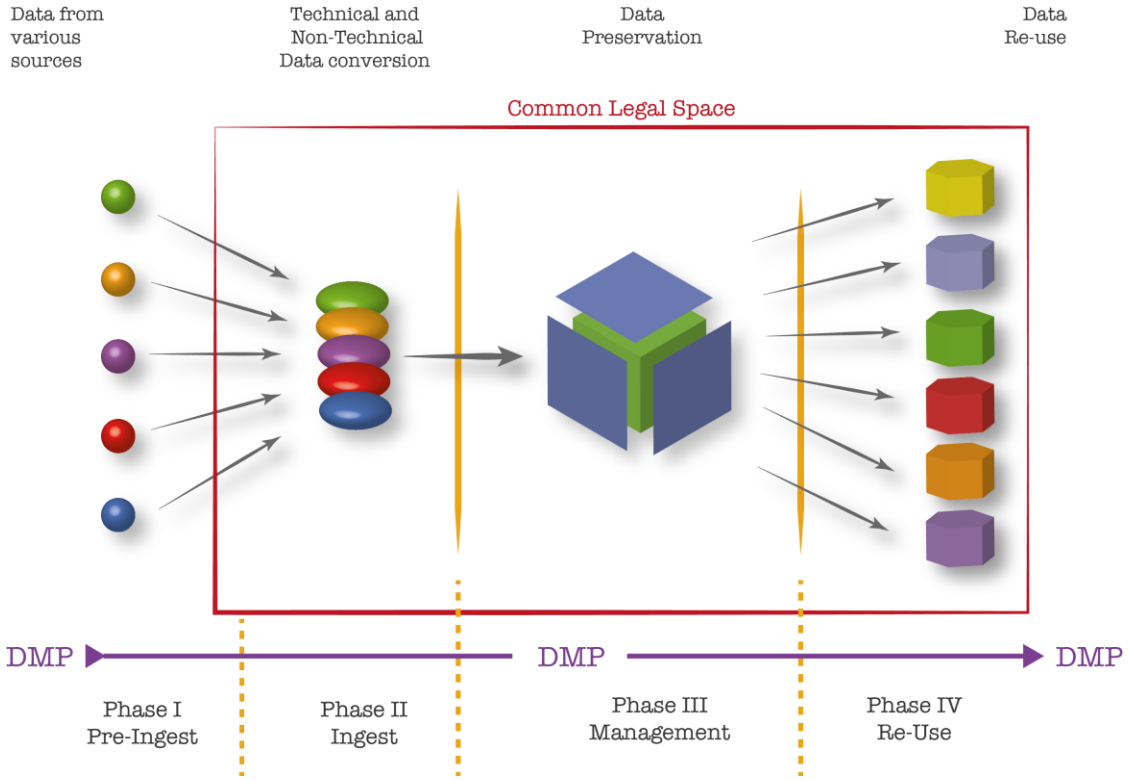
Interoperable
Data should be available in such a way that people and machines can exchange, interpret and combine these with other data sets in a (semi-)automated way.

Reusable
A good description of data (metadata) ensures that it can be reused for future research. Data should be permanently citable (such as with a DOI).

Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. The FAIR Guiding Principles for scientific data management and stewardship. Sci Data 3, 160018 (2016). CC BY 4.0

Workflow for Data Management

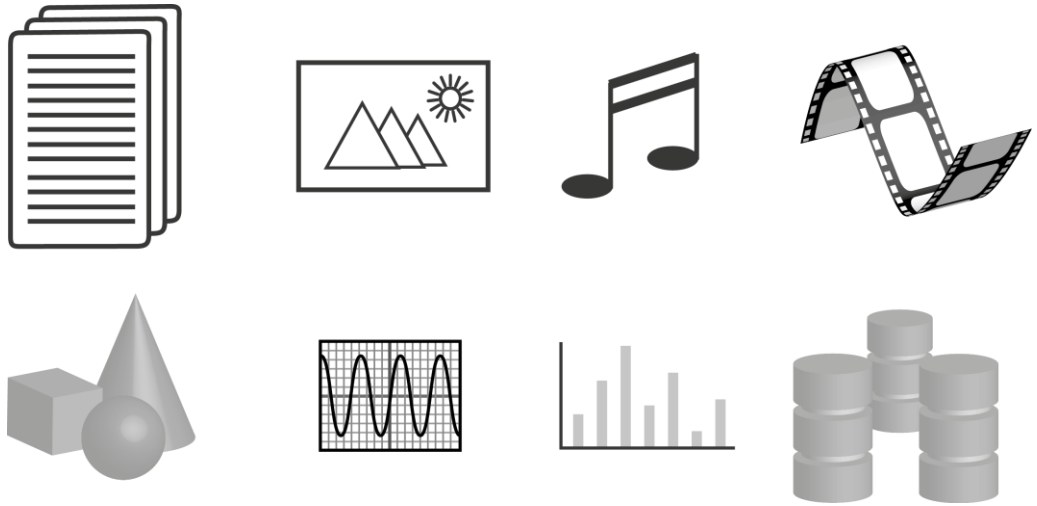
- **Phase 1:**
  Production of data – responsible is the data producer (researcher)
- **Phase 2:**
  Ingest of data – handover of the data from the producer to the central data management
- **Phase 3:**
  Data Management – focus on data preservation (data management)
- **Phase 4:**
  Re-Use – handover to the re-user



Digital Workflow Model for Data Management, Raman Ganguly

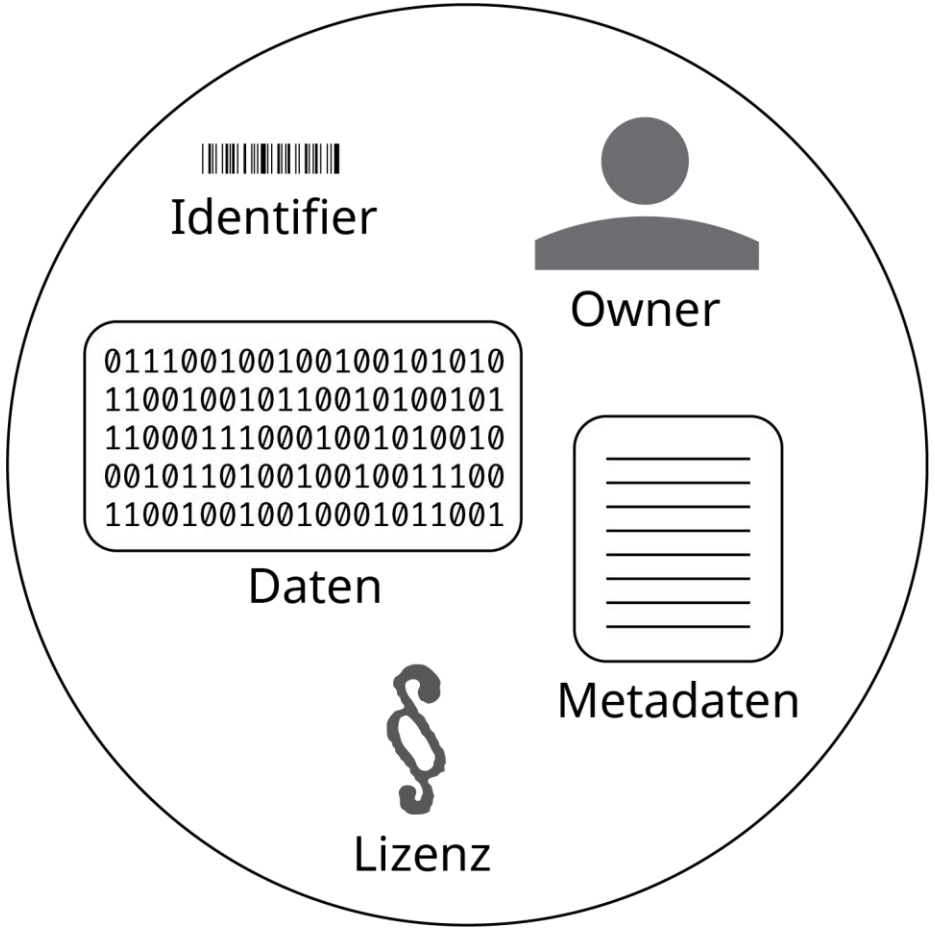
Data for Data Management

- All types of data can be considered – it is the purpose of the research that defines data as research data.
- Distinguish between data:
  - Stored in files
  - Stored in databases
  - That is part of a software application
  - …



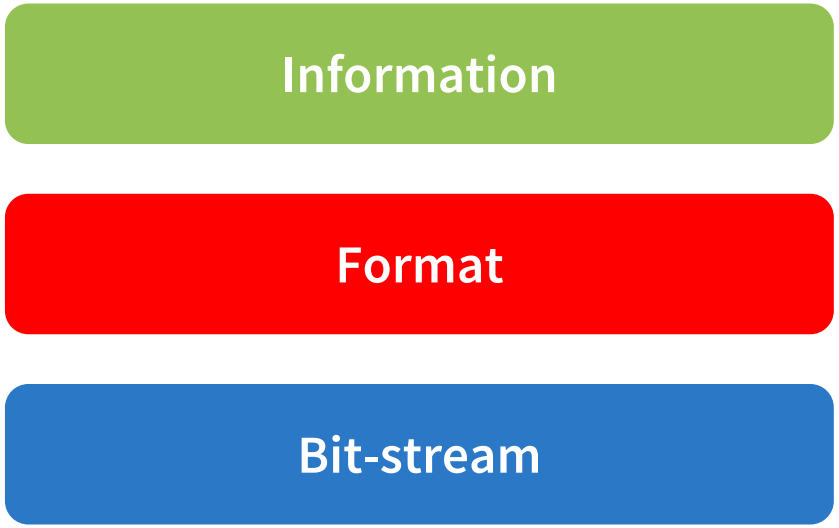
Digital Objects

- Digital objects are more than just the data:
  - Data itself
  - Identifier
  - Metadata
  - License
  - The owner (optional)



Preservation of Data

- Information is the main component that should be preserved
- The format is the structure in which the data can be interpreted by software
- On the lowest level, the bit-stream is the main part of how data is represented digitally



PHAIDRA

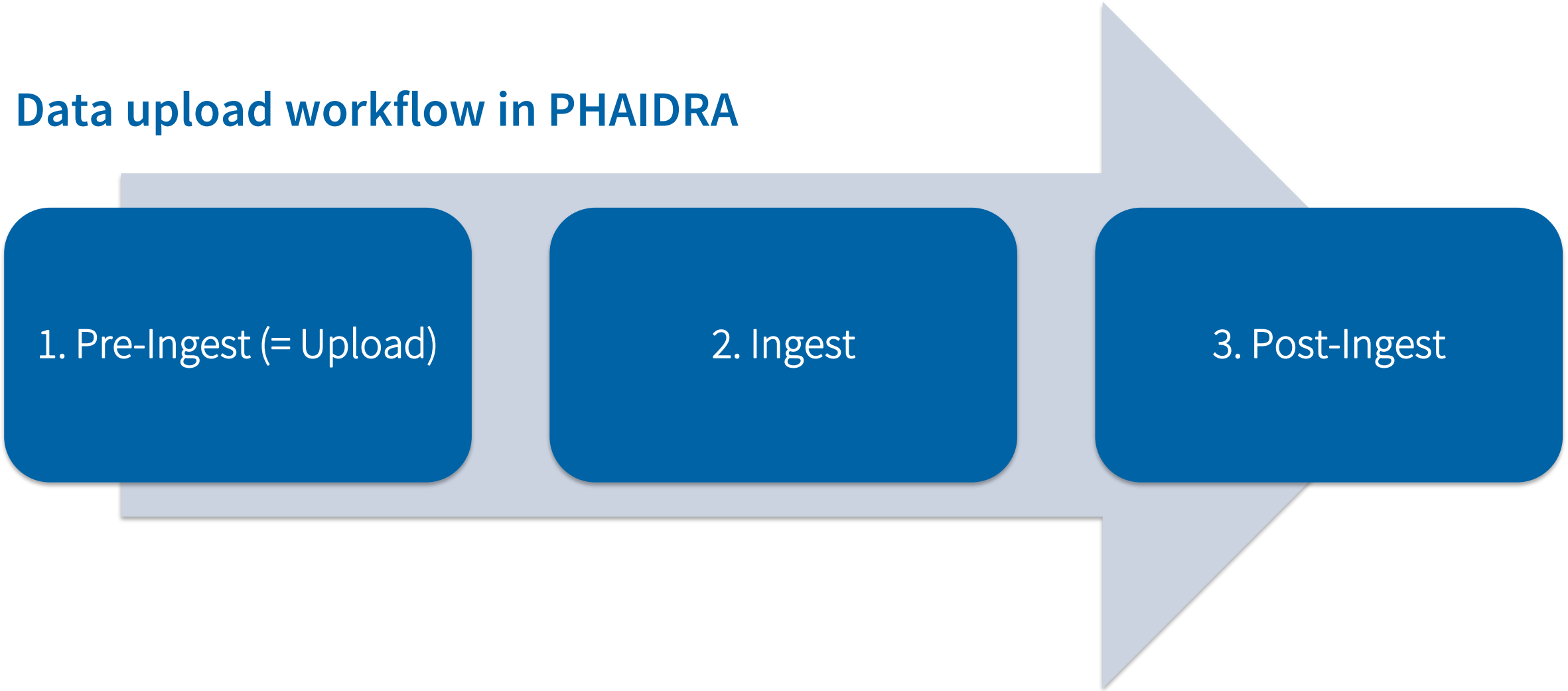
Permanent Hosting, Archiving and Indexing of Digital Resources and Assets

universität wien

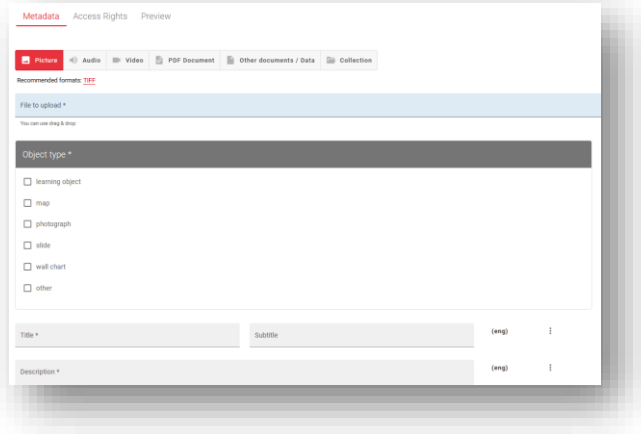
Key Facts about PHAIDRA

- Institutional repository of the University of Vienna
- Maintained by the University Library (contentwise) and the Vienna University Computer Center (technical)
- Based on: FEDORA Commons Repository
- Licensed as an open-source-product
- Users must hold necessary rights to upload objects
- Creative Commons Licensing is encouraged
- Approx. 80 metadata fields, 8 are mandatory
- Metadata are ALWAYS publicly accessible (= indexed by search engines)
- Access management options:
  - Open access (= recommended by the open access policy of the University of Vienna),
  - Restricted access:
    - Access for members of the University of Vienna
    - Access for certain members of the University of Vienna
    - Access for certain people or groups

Data upload workflow in PHAIDRA



How to Upload Objects to PHAIDRA?



1. Go to https://phaidra.univie.ac.at./
2. Login
3. Select „Upload“
4. Select „Create new object“
5. Select object type (technical)
   - image, audio, video, PDF, other types, …
6. Select file you want to upload
7. Select object type (contentwise)
   - e.g. letter, data management plan, article, …
8. Assign metadata to the object
   - 8 mandatory fields
   - If needed, add further metadata fields
9. If needed, select access restrictions (tab „access restrictions“
   - temporally (embargo period)
   - personal (org. units, people, pre-defined groups)
10. Check all assigned metadata under the tab „preview“
11. Click „Upload“

PHAIDRA Demo

Roles in Data Management

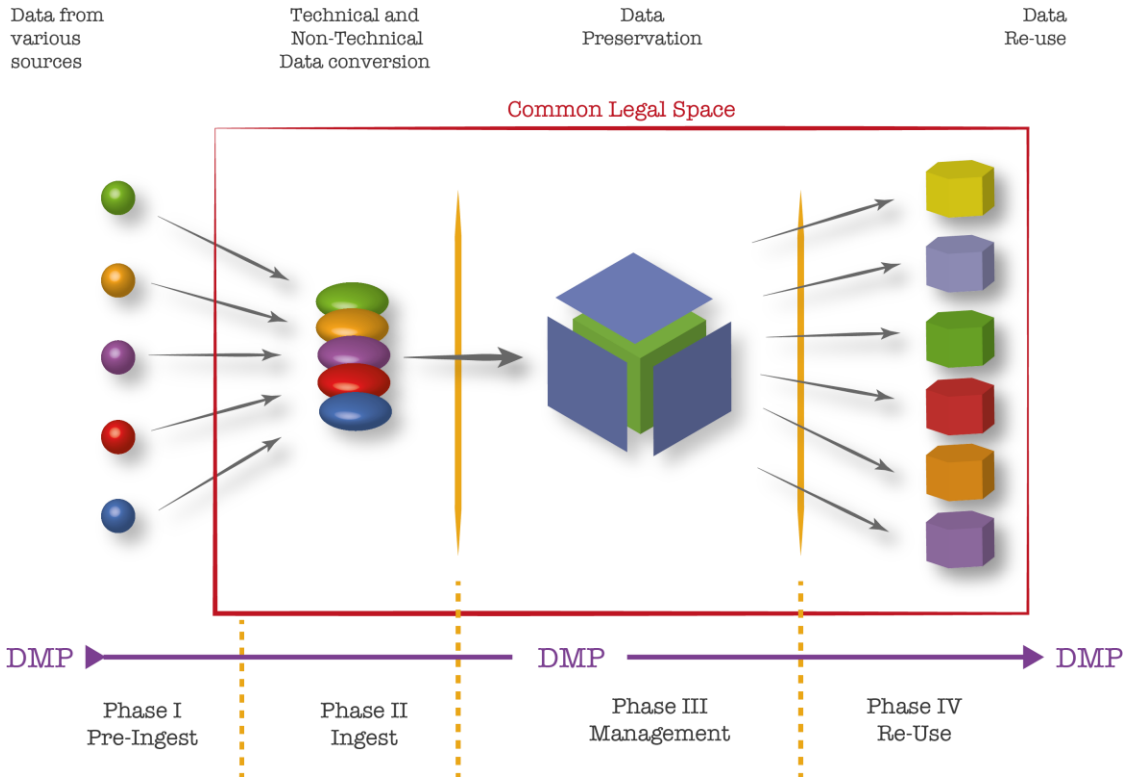
Data Stewardship and Other Roles in Data Management –

And their Implementation at the University of Vienna

universität wien

Workflow for Data Management

- **Phase 1:**
  Production of data – responsible are the data producer (researcher)
- **Phase 2:**
  Ingest of data – handover of the data from producer to the central data management
- **Phase 3:**
  Data Management – focus on data preservation (data management)
- **Phase 4:**
  Re-Use – handover to the reuser



Digital Workflow Model for Data Management, Raman Ganguly

Terms and Roles in Data Management

- Two paths of transformation in research:
  - Open and transparent ways to do research
  - Digital transformation of research

→ Data management is the central part of this two-stage transformation

→ The way we work is changing

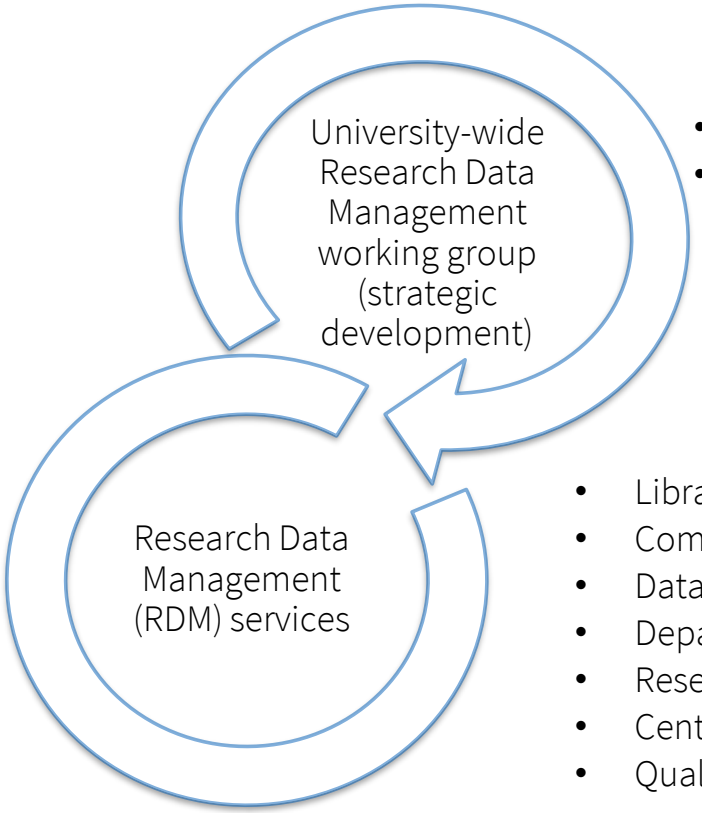
- Open Access
- Open Data
- Open Science
- Open Source
- Open Metrics
- Open *

- Data Stewards
- Data Champions
- Data Curators
- Data Librarians
- Data Scientists
- Data *

Roles Along the Workflow

Pre-Ingest	Ingest	Data Management	Re-use
Data Champions help researchers manage their data in their current research project. They are part of the research process. (Open Science and Open Software)	**Data Stewards** interact with a research project and are **NOT** part of the process. They are the link between data production and data management. (Open Access and Open Data)	**Data Librarians** are operating a repository. They are responsible for the quality of the data over time and provide access to the right people. (Open Access and Open Data)	**Data Curators** structure the data and help re-users find the correct data. (Open Data and Open Metrics)

Research Data Management at the University of Vienna



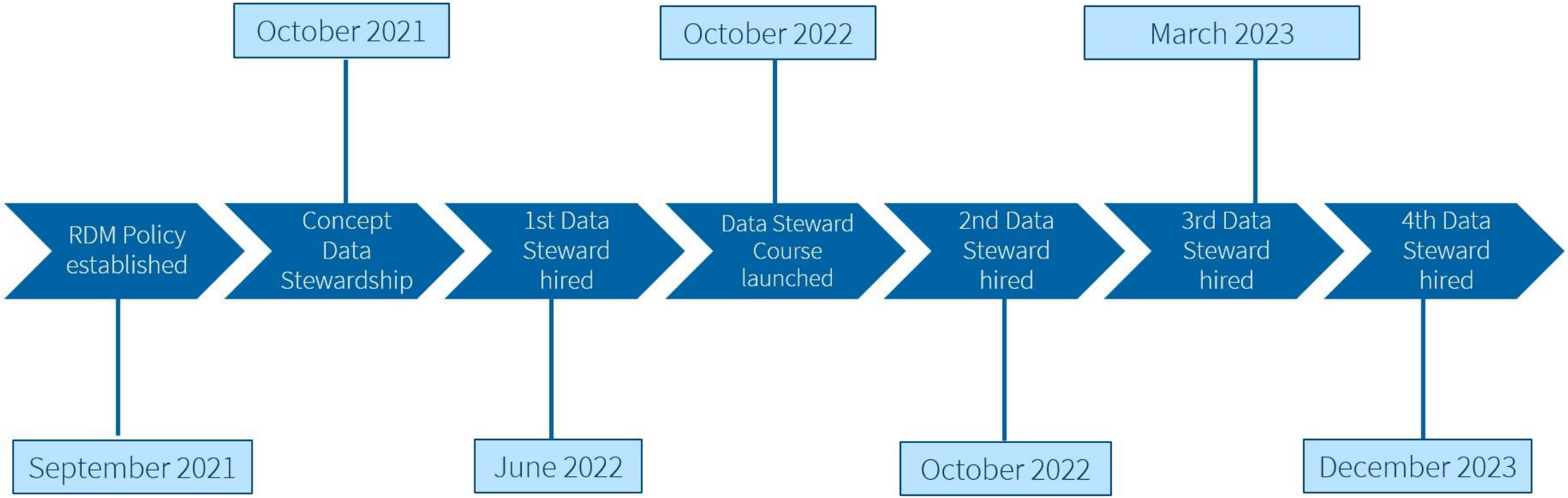
- Coordinated by the University Library
- Vice-Rector for Digitization and Knowledge Transfer

- Library
- Computer Center (ZID)
- Data Stewards at (selected) faculties and research centers
- Department of Innovation and Digitalisation in Law
- Research Support and Career Development
- Center for Teaching and Learning
- Quality Assurance

Until 2022 mostly generic RDM services

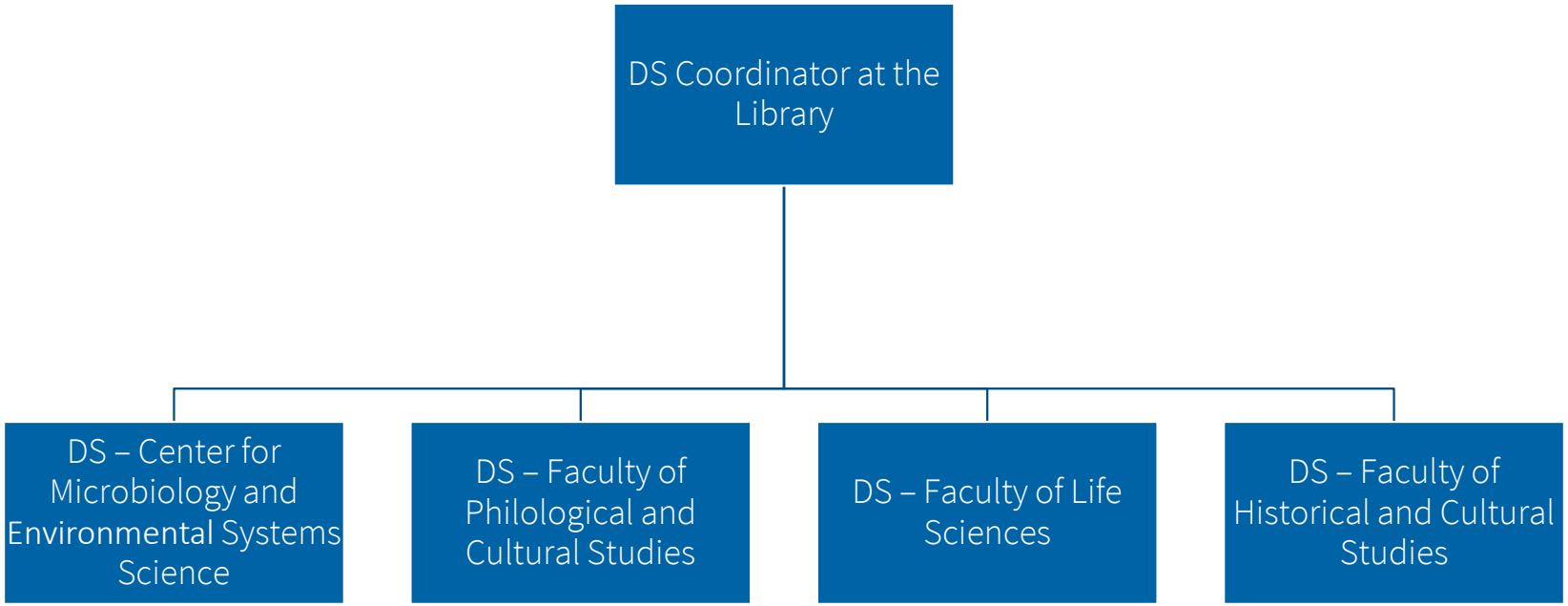
Data stewardship program for domain-specific RDM support

Data Stewardship Development



Slides adapted from Tereza Kálova et al. https://orcid.org/0000-0002-1764-7228 and Kalová, T. (2024, Juni 6). Certificate Courses, Workshops, Trainings… What Do Data Stewards Need? Insights from the "Data Steward" Certificate Program at the University of Vienna. HeFDI Data Week 2024, Online. Zenodo. https://doi.org/10.5281/zenodo.11483014, CC BY 4.0

Data Steward Network: Discipline-Specific RDM Support



Slides adapted from Tereza Kálova et al. https://orcid.org/0000-0002-1764-7228 and Kalová, T. (2024, Juni 6). Certificate Courses, Workshops, Trainings… What Do Data Stewards Need? Insights from the "Data Steward" Certificate Program at the University of Vienna. HeFDI Data Week 2024, Online. Zenodo. https://doi.org/10.5281/zenodo.11483014, CC BY 4.0

Data Steward Certificate Course

- Part-time further education program based on the certificate course "Data Librarian" and similar courses
- Academic degree: Certificate of the University of Vienna
- Language: English
- Duration and scope: 2 semesters/15 ECTS credits
- Target groups: Researchers and Research Support Staff
- Costs: from 2950 €

- For more details see the official website

GOAL: To upskill existing staff and prepare new hires for the challenging role of data stewards

Slides adapted from Tereza Kálova et al. https://orcid.org/0000-0002-1764-7228 and Kalová, T. (2024, Juni 6). Certificate Courses, Workshops, Trainings… What Do Data Stewards Need? Insights from the "Data Steward" Certificate Program at the University of Vienna. HeFDI Data Week 2024, Online. Zenodo. https://doi.org/10.5281/zenodo.11483014, CC BY 4.0

Thank you for your attention!

universität wien