WG Research Data Management

HANDOUTS FROM THE WORKING GROUP RESEARCH DATA MANAGEMENT

The Research Data Repository RADAR Passau

Exposée

Guide to Using RADAR | Login | Roles and Functions | Metadata Fields

Edited

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1. Quick Start

Since January 1, 2025, the University of Passau has been utilizing the repository service RADAR for its institutional research data management (RDM) and has licensed the institutional repository RADAR PASSAU through this platform. This handout aims to provide you with a concise and application-oriented overview of how to use RADAR.

1.1. What is RADAR?

RESE**A**RCH **DA**TA **R**EPOSITORY is a repository operated by FIZ Karlsruhe for the archiving and publication of research data from completed scientific projects. It primarily hosts research data from disciplines that do not yet have their own subject-specific RDM infrastructure.

The RADAR repository enables the archiving, publication and enrichment of research data with metadata, as well as a preliminary review. This process not only ensures the long-term availability of archived data but also facilitates access to and reuse of published data in accordance with the FAIR principles.

1.2. Why Research Data Management and Long-Term Archiving?

If research data is FAIR, then it is *findable*, *accessible*, *interoperable* and *reusable*. The FAIR principles reflect the academic policy objective that publicly funded scientific results and the associated research data should be made available to the scientific community and the public whenever possible.

The concrete implementation of the FAIR principles requires, among other things, digital long-term archiving (LTA) for at least ten years. This ensures the accessibility, integrity, authenticity, and comprehensibility of research data in the face of continuous technological innovation. Thus, FAIR and physically flawless data storage (bitstream preservation) at the time of ingest, as well as its long-term archiving, is a key task in RDM.

2. Registration

Sign in to RADAR by clicking on **LOG IN→**] in the header bar. On the login page, you can choose between two options: the login **via your institutional account**, which we recommend, or the login **via your RADAR account**.

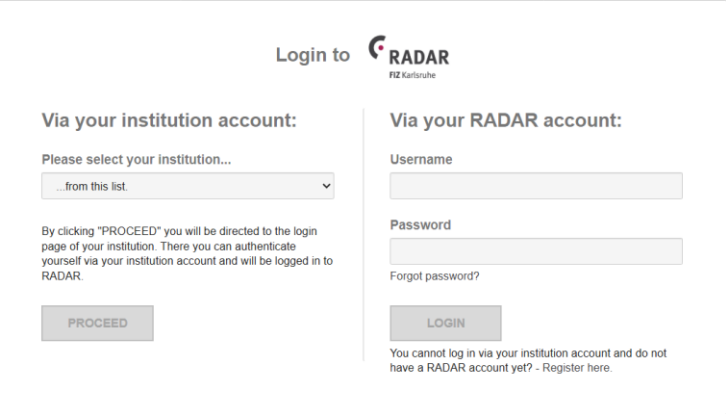

Fig. 1: Screenshot RADAR; source: radar-service.eu

2.1. Option 1: Recommended Login via your Institutional Account

Please select **University of Passau** from the drop-down list on the left-hand side of the RADAR login page. Subsequently, authentication will be conducted via your ZIM ID.

2.2. Option 2: Login via your RADAR Account

You can log in with your own user account by registering for the first time with a new username and your official university email address (...@uni-passau.de). After completing the online form, you will receive an email containing a confirmation link and further instructions.

3. Roles and Functions

RADAR grants users different functions and user rights within the workspaces depending on their assigned role (Administrator, Curator or Subcurator; as outlined in RADAR glossary).

Note: For newly assigned role holders, it may be necessary to log out and log back in to activate the role assignment in the profile.

3.1. Role and Rights Model

Administrator

Admins serve as the primary point of contact for both their institutions and FIZ/RADAR. In this pivotal role, they are responsible for the installation and management of all workspaces. They can upload datasets, describe them with metadata, submit them for review, archive them, and publish them. Additionally, they assign roles to registered users as data providers (see below), they receive statistics and control access rights, storage capacities, and RADAR contracts.

Note: This role is not available to researchers.

	Admin	**Curator**	Subcurator
Manage contract	Yes	no	no
Create workspace	Yes	no	no
Manage workspace	Yes	partially(1)	no
Define data provider in the workspace	Yes	partially(2)	no
Upload datasets	Yes	Yes	Yes
Describing datasets with metadata	Yes	Yes	Yes
Have datasets analysed	Yes	Yes	Yes
Archive or publish datasets	Yes	Yes	no

Fig. 2: Radar matrix of roles and rights; Original: ph-weingarten.de

(1) E.g. management of archiving duration, e-mail address, metadata default values

(2) Curators can define sub-curators

Curator

Curators are data providers with full rights, appointed by Admins. They are responsible for the research data within their workspace and can create and manage datasets, enrich them with metadata, submit them for review, archive them, and publish them. Moreover, curators assign Subcurators within their workspace and grant selected registered users access to archived data.

To appoint Subcurators for a workspace, click on ‘Manage users’ and enter the **username** or the **registered email address** of the person in the **"Add Subcurator"** field.

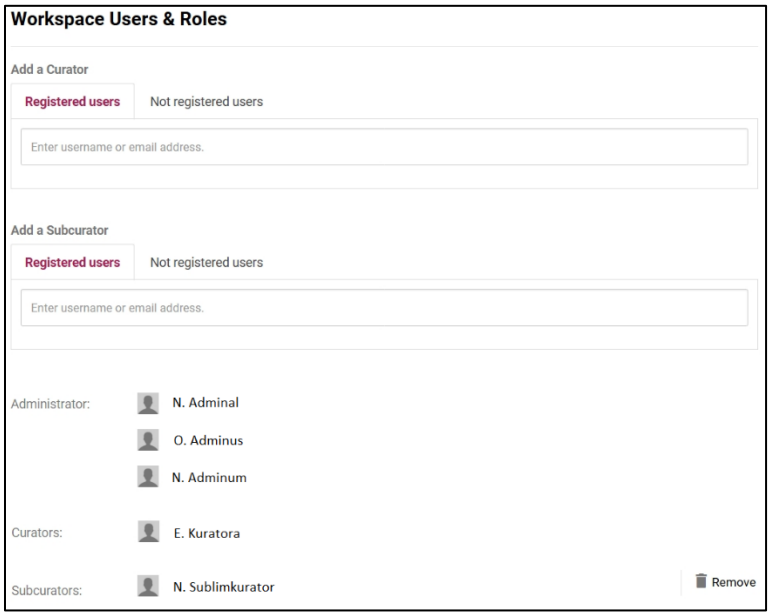

Fig. 3: Role allocation within a workspace

Subcurator

Subcurators are data providers with restricted rights, appointed by Curators. They can upload research data within their workspaces and enrich it with metadata. However, Subcurators only have read access to datasets, meaning they cannot submit them for review, archive them, or publish them – unlike Curators.

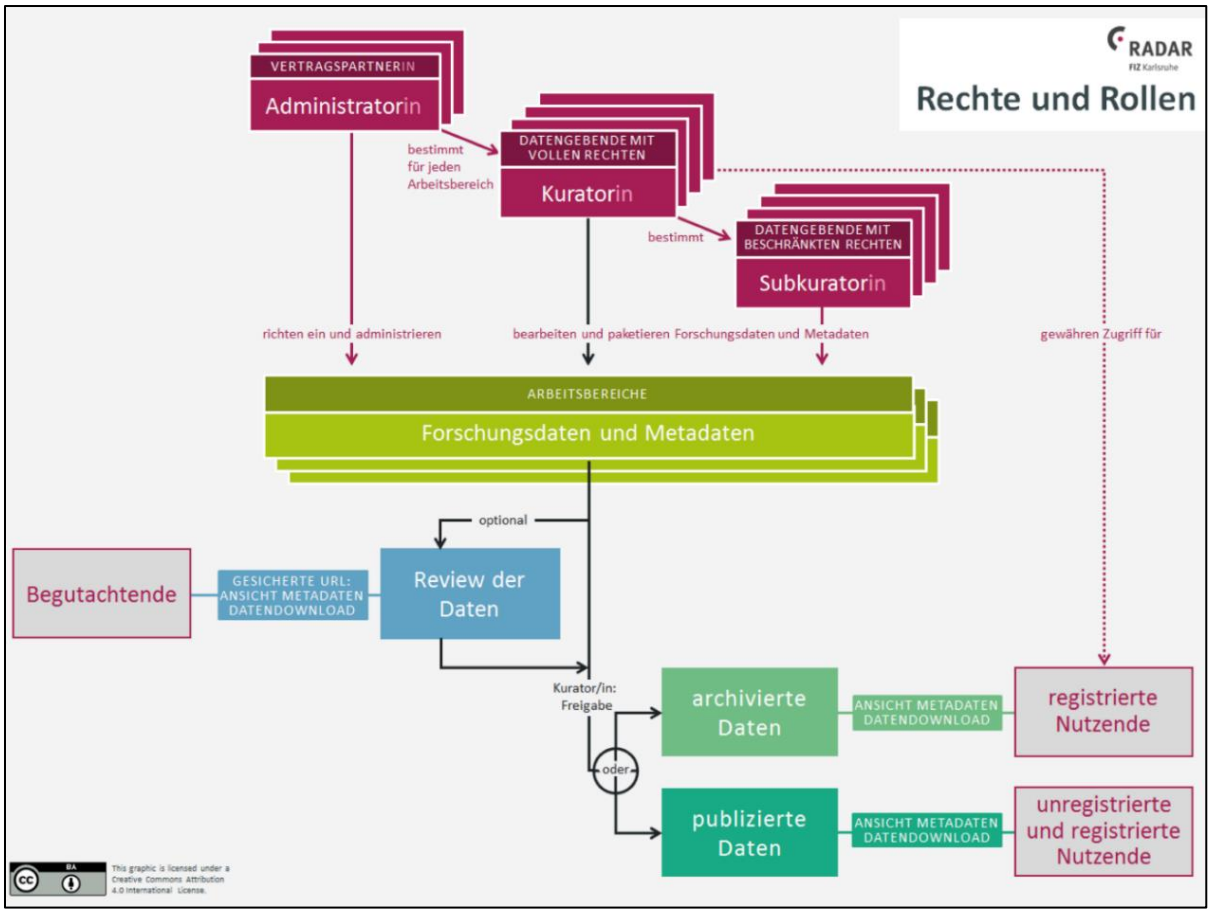

Fig. 4: Rights and roles in RADAR in the workspace process; source: RADAR orig. graphic

3.2. Create Dataset

A dataset consists of a single file or a collection of files, including the research data and the corresponding metadata description (see section 3.3). To create a new dataset, click on **CREATE DATASET** in your workspace.

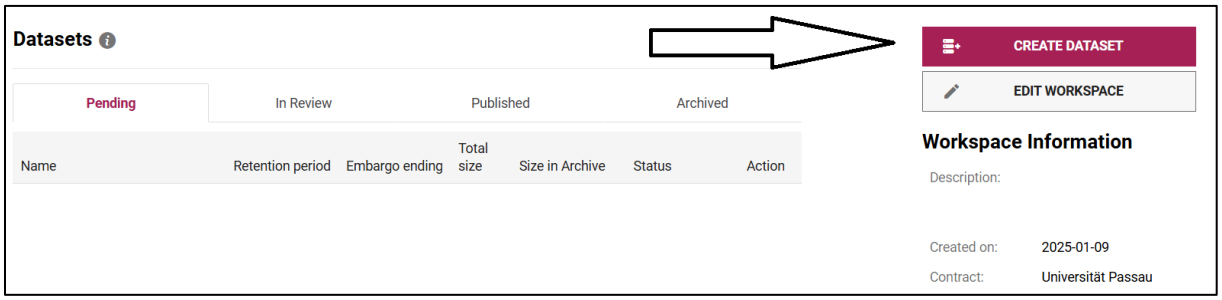

*Fig. 5: Workspace view with the **Create dataset** selection*

To upload your research data, please select the **'Upload dataset'** option. Assign a name to your dataset, which you can modify at any time during the editing phase. Next, choose the file you want to upload. You can either **drag and drop** it into the designated area or select it via your **file system**. You may upload either a **single file** or a **compressed archive** (e.g., **ZIP format**). During the editing process, additional individual files can be added to the dataset.

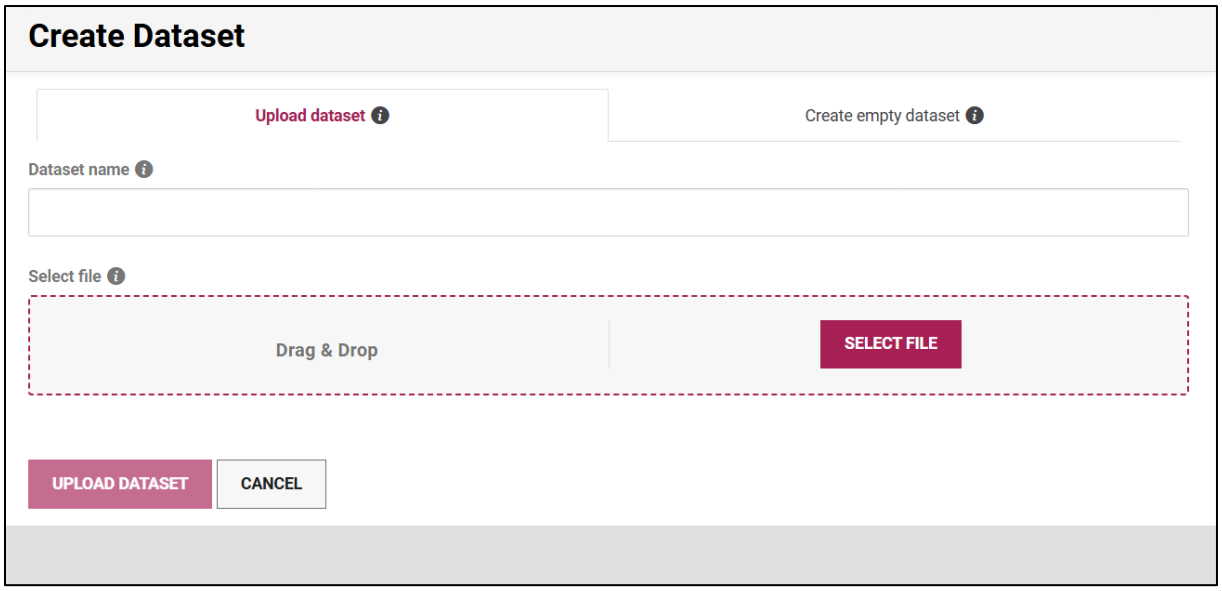

*Fig. 6: Create dataset view with the **Upload dataset** selection*

3.3. Metadata Description of Files and Directories

Metadata ('data about data') describe the properties and content of research data. Metadata in RADAR DATASETS includes **descriptive metadata,** which facilitate findability, referencing, and reuse (e.g., title, creator, subject, or identifier). They are created by Curators and Subcurators. RADAR also generates technical metadata relevant for long-term data preservation (e.g., information about data format, data volume, and checksums).

Furthermore, RADAR automatically generates **LTA metadata** in accordance with the PREMIS standard, documenting all events—from the initial upload to the creation of copies during migration to **new storage media**.

Note: Metadata from published datasets is always publicly accessible. The documentation of the RADAR metadata schema is available here.

*Fig. 7: Dataset view with the **Edit metadata** selection*

To describe the dataset with metadata, navigate to the **RADAR METADATA** tab and then click **EDIT METADATA** on the right. Alternatively, you can upload a metadata file in XML format. RADAR provides a sample XML file as a template for reference. Simply **drag and drop** the XML file into the designated area. Most metadata fields can be edited later, as outlined in Metadata correction. The mandatory metadata fields are creator, title, publishers, production year, subject areas, resource type, rights statement for the dataset, and rights holders. In addition, optional fields such as contributors, Additional titles, description, keywords, language, geolocation, data source, software, data processing, and funding can be entered.

3.4. Definition of Metadata Default Values

To simplify the regular metadata description of datasets, you can set metadata default values. Once defined, these defaults are automatically applied to every newly uploaded dataset within your workspace and can be individually edited by data providers at any time.

You define metadata default values by clicking on **Edit default metadata** in your workspace.

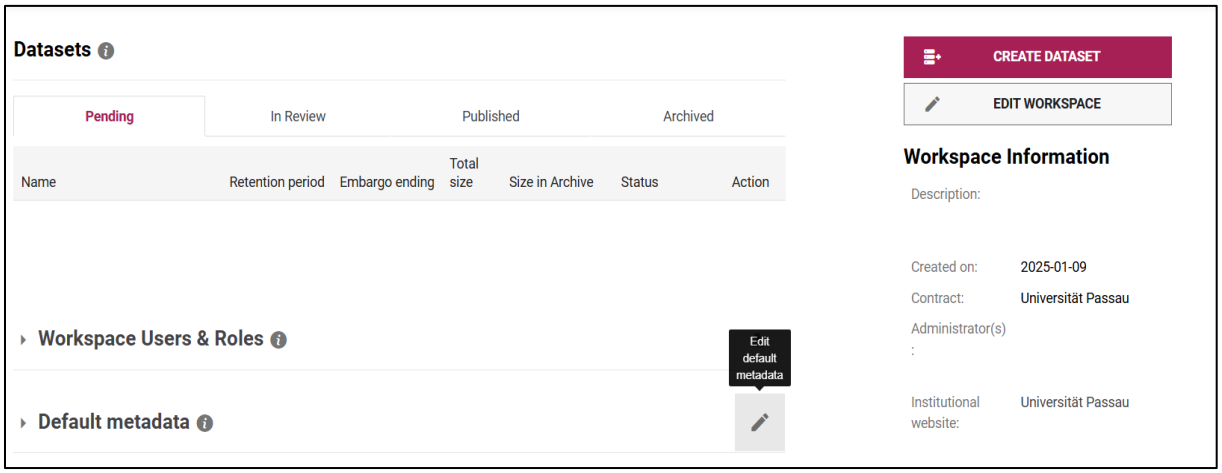

*Fig. 8: Workspace view with the selection **Edit default metadata***

3.5. Archive Datasets

To archive your completed datasets, click the **ARCHIVE** button. Data archiving ensures long-erm, format-independent storage of research data for the specified retention periods. Once archived, the dataset status changes to 'Archived'.

Note: After archiving, no further modifications to the dataset are possible.

*Fig. 9: Workspace view with the **Archive** selection*

3.6. Examine Datasets

With RADAR, you can conveniently share your research datasets with reviewers before a planned publication via an automatically generated and secure review URL (e.g., peer review, publishers and journal editorial boards). This URL allows access to the unpublished dataset without prior authentication. The review process can be extended or cancelled at any time. In the latter case, the secure link will become invalid. During the review process, the dataset remains locked for further editing.

3.7. Publish Datasets (with Embargo)

When you publish datasets, they are securely stored in RADAR Cloud with a minimum retention period of 25 years. A Digital Object Identifier (DOI) is assigned to each published dataset, ensuring unique and permanent identification. This enables citation and linking to scientific publications. If required, DOIs can be reserved during metadata annotation. For each dataset published in RADAR, data providers select a license (e.g., Creative Commons 4.0), thereby defining its reuse conditions.

Note: No modifications can be made after publication.

If the research data should not be published immediately, an embargo period of up to 12 months can be set. The dataset becomes publicly accessible only after the embargo period expires, but the metadata remains immediately viewable upon publication.

4. Metadata Fields

A minimum set of metadata is required for archiving or publishing your dataset. The RADAR metadata schema (current version 9.1) is based on the DataCite metadata schema and includes 10 mandatory fields and 13 optional fields.

4.1. Mandatory Fields

1. **Identifier**
   - A persistent identifier ensures that a dataset is uniquely and permanently identifiable.
   - Identifiers are automatically assigned by RADAR
     - for published data: DOI (Digital Object Identifier)
     - for archived data: Handle (RADAR INTERNAL identifier)

2. **Creator/Author**
   - The responsible person or institution for the content of research data.
   - The following can also be entered optionally
     - for institutions: the listing entry from the Research Organization Registry (ROR)
     - for individuals: the Open Researcher and Contributor ID (ORCiD)

3. **Title**
   - The title of the dataset.
   - It is typically assigned when creating the dataset.
   - A concise and meaningful title is recommended.

4. **Publishers**
   - The person(s) or institution(s) responsible for the publication or archiving of research data at RADAR.
     - Names of individuals should be formatted as "Last name, First name", with the option to add ORCiDs.
     - Institution suggestions are displayed via Research Organization Registry (ROR).
     - Names not written in the Latin alphabet should be transcribed according to the ALA-LC Schema13.

5. **Production Year**
   - Refers to the time of origin or collection period when the research data was generated.
   - Format: yyyy or yyyy-yyyy
   - If the creation date is unknown, it should be specified as "unknown".

6. **Publication Year**
   - The year in which the dataset was published or archived.
     - Format: yyyy
     - **Note**: The publication year is automatically assigned by RADAR.

7. **Subject Areas**
   - The scientific discipline(s) to which the research data are assigned.

8. **Resource Type**
   - A more detailed description of the object type (resource) or the type of research data.

- Controlled list: Selection of a category or type in which the research data is organised e.g.: audio-visual presentation, text file, software, collection etc.
- Free text: The content should be a single term with a certain level of detail that supplements the Resource type from the controlled list.

9. Rights Statement for the Dataset

- Each dataset must have a license, specifying the usage rights for the research data.
- The license can be chosen from a controlled list.
- By selecting the parameter 'Other', a proprietary or discipline-specific license can be entered as free text.
- **Note**: Metadata is by default licensed under Creative Commons (CC0).

10. Rights Holders

- The person(s) or institution(s) holding rights to the research data published or archived at RADAR.
  - Individuals: Personal names should be formatted "Last name, First name", with the option to add ORCiDs.
  - Institutions: Default lists for institutions appear via ROR

4.2. Optional Fields

11. Additional Title

- Additional titles, such as alternative titles, subtitles, title translations, etc.

12. Description

- A content-related description of the object, such as a summary or a technical note.
- RADAR recommends that the description is in English
- Due to copyright considerations, the description should differ from the abstract of the publication ("blurb").

13. Keywords

- Keywords help further characterize the object.
- They should be distinct from the title and subtitle description. Keywords can be entered as free text or standardized GND entries.
- Using clear English terms or standardized entries ensures optimal findability.

14. Contributors

- The person(s) or institution(s) involved in the creation of the dataset (e.g., contributing or collaborating persons or institutions), along with their type of contribution.
  - Individuals: Names should be formatted as "Last name, First name", with the option to add ORCiDs.
  - Institutions: Default lists for institutions appear via ROR

15. Language

- The dominant language of the resource. For language-independent resources, select the language in which the data is documented
- Format: According to ISO 639-3, e.g., eng, fre, ger, etc.

16. Alternate Identifier

- An alternative object identifier, such as an existing institution-specific identifier.

17. Related Identifier

- A unique identifier for a related object (resource B) linked to your dataset (resource A).
- This field allows referencing supplementary materials associated with the object using a global identifier. Example: The DOI of a dissertation that uses the research data from the dataset.

18. Geolocation

- The geographical location (region, country, area) where the research data was collected or to which it relates (Geolocation)
- The entry can specify one or multiple defined geographic areas or points.

19. Data Source

- Information about the data source, including data collection method, and category of data source (e.g., subject-specific devices, observations, surveys, etc.)

20. Software Used

- Information about the software utilized in the creation, processing, or viewing of the data source.

21. Data Processing

- Specification of additional or secondary modifications made to the research data (e.g., processed raw data for statistical analysis, etc.).

22. Related Information

- Specification of important details and components that characterise the research dataset (e.g., Database ID, registration number, GenBank etc.)

23. Funding

- Information on research funding, financial support, grants (e.g., name of funding organisation, ID, funding title/number etc.)
  - Organisation names can be selected from suggested lists provided by the Crossref Funder Registry or the Research Organization Registry (ROR)

5. Links

- RADAR operated by FIZ Karlsruhe - Leibniz Institute for Information Infrastructure
- A detailed explanation of the RADAR metadata standards: Documentation of the descriptive RADAR Metadata Schema v9.1 (as of 12.2022) [content in German]
- DataCite Metadata Working Group: "DataCite Metadata Schema Documentation for the Publication and Citation of Research Data and Other Research Outputs. Version 4.5. DataCite e.V." (as of 10.2024)
- PREMIS Data Dictionary for Preservation Metadata V3.0 (as of 06.2015)
- Priscilla Caplan (2021): "Understanding PREMIS: an overview of the PREMIS Data Dictionary for Preservation Metadata."
- The Dublin Core Metadata Initiative Usage Board: DCMI Metadata Terms (as of 01.2020)
- The Dublin Core Metadata Initiative (Stefanie Rühle/Tom Baker/Pete Johnston): How to create content for DCMI Metadata

See also the handouts and information sheets form the Working Group Research Data Management.