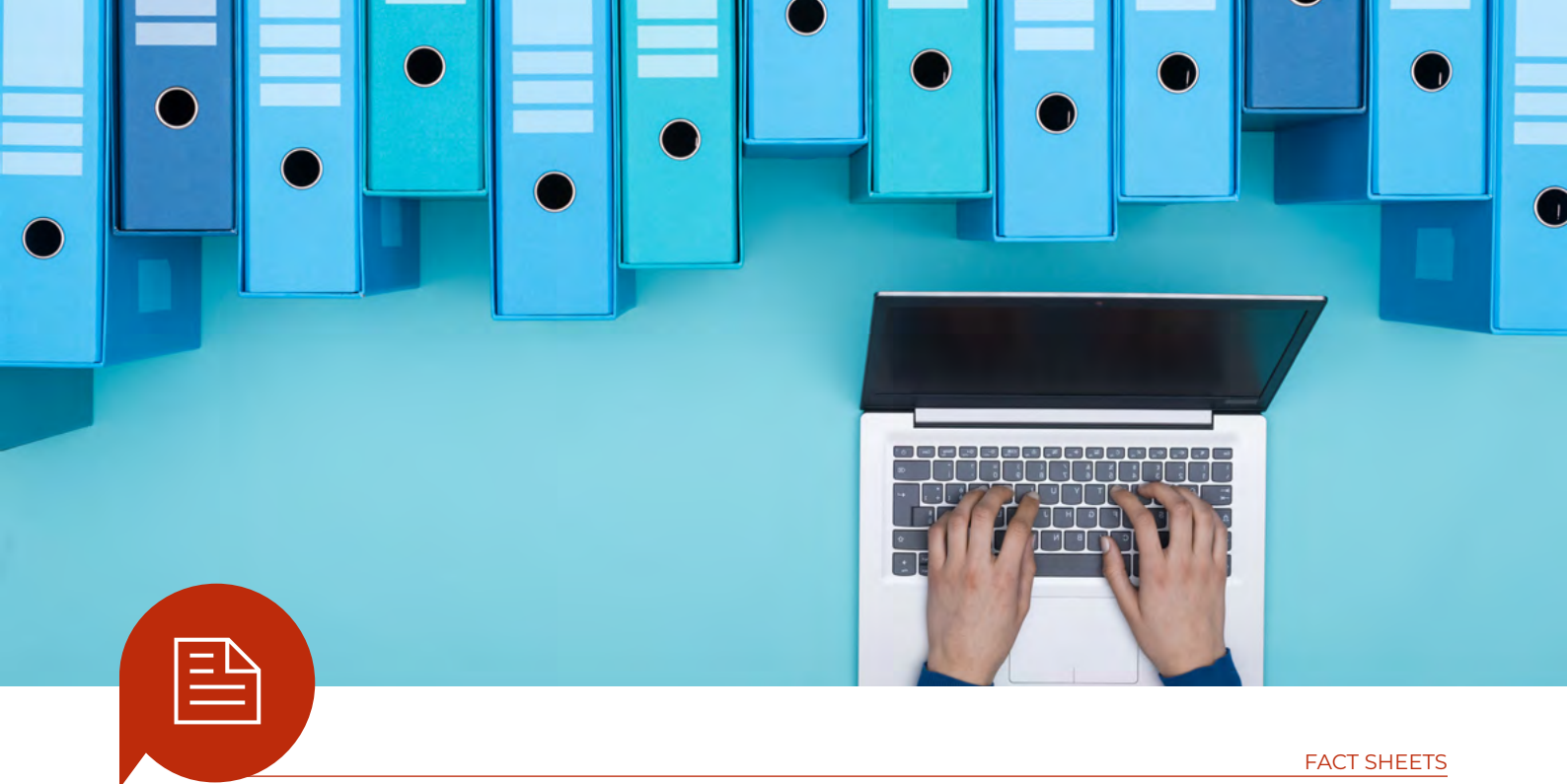




Repositories for data deposit

Repositories are **digital infrastructures for archiving and preserving data, publications, software** and, more generally, research results **in the long term**.

The data archived in a repository is **associated with metadata structured** according to standard schemas  **Metadata and documentation**. Repositories also play a key role in promoting open and accessible research, allowing researchers to **abide by FAIR principles** as they make it possible to associate a set of descriptive metadata, a **Persistent Identifier (PID)** and a **licence** with the data deposited  **FAIR principles**;  **Copyright**. Repositories further enable researchers to **choose an access level** for their data and allow users to download deposited data they wish to reuse.

Data volume and repositories

The choice of a repository must consider not only the type of data managed, but also its volume. The need to pay for depositing data is specified in the **terms and conditions** of each repository, which you should always check. In most cases, data can be deposited free of charge, but some repositories may require the payment of a fee to deposit large datasets (usually over tens of GB).

Types of repositories

Repositories can be **disciplinary, institutional or generalist** (multi-purpose) in nature. Each type has its specific advantages, so it is important that you choose based on your needs.

- **Disciplinary** repositories use metadata schemas specifically designed for a certain discipline, can offer greater visibility and make it easier to share data within the relevant scientific community.
- **Institutional** repositories are made available to the members of an academic or research institution and usually provide validation and support services to ensure the quality of the datasets deposited. AMS Acta and AMS Historica are the repositories that the University of Bologna provides to its researchers (see below).
- **Generalist** repositories gather data and materials from different disciplines and research contexts. They provide a solid platform for data preservation, visibility and accessibility. Zenodo is one of the main generalist repositories in use.

In the field!

I am a researcher, and I need to choose a repository to deposit my datasets. Where do I start?

Carefully review any ethical, privacy and intellectual property constraint of the datasets you intend to produce to establish long-term preservation strategy and dataset access level.

Estimate the volume of your data to find out whether you can deposit it for free.

Decide if you need support or are happy to deposit your data by yourself.

Check the repository documentation to make sure that your selected repository meets the requirements to ensure that the data you deposit is FAIR (especially: PID, metadata, licence).

Repositories and accessibility levels

The choice of the access level is key: you should choose a repository that allows you to deposit your data in accordance with Open Science practices but also restricts access where necessary.

The access level can be:

- **Open**, when the dataset is openly accessible to anyone who wishes to browse, download and reuse it.
- **Restricted**, when those who wish to browse or download the deposited dataset must ask for permission. This may be obtained directly from the researcher who deposited the dataset, or, for certain specific repositories, from a committee in charge of assessing the legitimacy of the request for access.

- **Embargoed**, a temporary restriction that keeps the deposited datasets private for a limited time, after which the embargo expires, and the dataset becomes open.

In the field!

I am a researcher in social sciences, and I want to deposit a dataset I produced, containing a survey. What can I do?

Use re3data to search for a repository that makes your data visible to your scientific community.

Consider whether the survey you intend to conduct is cross-sectional or longitudinal, as they pose different challenges.

Longitudinal surveys usually include personal data, as the same individuals are interviewed more than once over time. In this case, you will have to choose a repository that also allows you to restrict access to the deposited data.

I am a researcher working with sensitive data, which cannot be deposited in open access. What can I do?

As regards the management of sensitive data that cannot be made anonymous, it is crucial that you choose a restricted-access repository. This will make your data available to authorised users only, while publishing metadata and support documentation.

Another option is to deposit the methodology for data analysis in open access, but keep the data private where necessary, so that at least the research process can be replicated.

My data could be involved in a patent procedure. Can I deposit it?

Remember that, if your data is necessary for a patent, it should be kept confidential until the procedure is completed, in order not to jeopardise novelty. Do not share it with anyone and do not upload it online without restrictions. Deposit your data in a repository that allows you to place a temporary embargo on it.

University repositories: AMS Acta and AMS Historica

AMS Acta is an institutional repository for the collection, preservation and dissemination of the University of Bologna's research data. It allows professors, researchers, research fellows, and students of the University of Bologna to archive research data in compliance with FAIR principles and Open Science:

- It ensures preservation and access to the outputs deposited over time.
- It assigns a DOI (Digital Object Identifier).
- It implements various access levels (open, closed, embargoed).
- It implements the Dublin Core and DataCite descriptive metadata standards; metadata are always accessible under a Creative Commons Zero (CC0 1.0 Universal) licence.
- It implements various licences for the data, including Creative Commons licences.
- It complies with international standards for interoperability and metadata

transmission, is registered in the re3data catalogue, and is indexed by the main catalogues (OpenAIRE, BASE, WorldCat) and search engines (Google, Google Scholar, etc.).

- It provides statistics about accesses and downloads for each output.

AMS Historica is an institutional repository that gathers the digital reproductions of the University of Bologna's ancient and valuable sources of scientific and cultural importance. It is built for browsing the digital reproductions of rare and unique documents, including works of art, monuments, archaeological finds, manuscripts, papyri, books, journals, newspapers, maps, drawings, photographs, audio and video sources of scientific, historical and cultural importance, which are kept in the museums, libraries and archives of the University or which are the result of national and international research projects.

The content is published in accordance with the national and international guidelines and standards that foster preservation and enhancement of digital collections over time:

- It associates metadata and licences that enable discovery, study, sharing and reuse according to the principles of Open Science.
- It operates on an open-source platform, DSpace-GLAM, that offers new and powerful features for browsing and studying heterogeneous digital content thanks to its digital services based on IIIF (International Image Interoperability Framework).
- It is indexed by national and international catalogues and aggregator services such as Cultura Italia, Europeana, OpenAIRE, WorldCat and BASE.

Useful links

Registries of repositories:

- Re3data <https://www.re3data.org/>
- OpenAIRE Explore <https://www.openaire.eu/find-trustworthy-data-repository>
- FAIRsharing Repository Database <https://fairsharing.org/search?fairsharingRegistry=Database>

University repositories:

AMS Acta <https://amsacta.unibo.it/> | AMS Historica <https://historica.unibo.it/>

Further information about the University repositories:

- "Preserving and disseminating research data in AMS Acta"
(<https://sba.unibo.it/en/almadl/almadl-services/preserving-and-disseminating-research-data-in-ams-acta>);
- "Preservation and enhancement of the digital cultural heritage"
(<https://sba.unibo.it/en/almadl/almadl-services/preservation-and-enhancement-of-the-digital-cultural-heritage>).