

Guidelines on Digital Research Data at TU Darmstadt



Translation of the official German text „Leitlinien zum Umgang mit digitalen Forschungsdaten an der TU Darmstadt“

from December 12th 2015, revised on September 8th 2022

Preamble

The Technical University of Darmstadt (TUDa) considers the responsible and scientifically appropriate handling of research data to be an essential contribution to the acquisition and dissemination of scientific knowledge as an implementation of its principles for ensuring good scientific practice. In line with the institutional goals of sustainability and digitization, it promotes and supports the preservation and documentation of research data as well as structured and free access to them in accordance with the FAIR principles with the aim of increasing the findability, accessibility, interoperability and reusability of research data. The guidelines for handling digital research data apply to all research projects at TU Darmstadt, including student work.

Traceability and scientific verifiability of research as well as the best possible scientific use of the data obtained are equally important goals. When implementing research data management, the guidelines take into account the specific characteristics of the various disciplines. The implementation of the guidelines should not restrict the commercial exploitation of research results.

The implementation of the guidelines is accompanied by the central working group TUdata, which provides technical, organizational and legal advice on all areas of research data management and supports the members of TUDa with a broad service portfolio and recommendations for action. To this end, TUDa cooperates with other scientific institutions, participates in the National Research Data Infrastructure (NFDI) and uses common standards and structures.

Definitions

1. Research data are all digital data that are created by transformation from an analogue medium or in the course of experiments, measurements, simulations, computer program development, studies of primary sources, surveys or inquiries or are their result. Associated with them are also the metadata, documentation, and software necessary to understand them. Research data exists in a variety of digital formats and stages of processing and aggregation in every scientific discipline.
2. Research data management is understood to refer to the entire handling of digital data in research, from the planning of its generation, through its organization, use and processing in research projects, to its selection and permanent archiving or even deletion, with the aim of achieving the aforementioned goals. This includes, in particular, the discipline-specific documentation of its creation in digital form, the secure storage, the appropriate processing and, if applicable, the publication in a suitable form.

Guidelines

1. The planning and execution of a research project also include research data management. This concerns, for example, the type of data generated and used in the course of the project, information on the required accuracy and scope of the data and metadata to be collected, measures to maintain the integrity and authenticity of the data, as well as information on confidentiality, retention and planned publication, including clarification of intellectual property rights and rights of use. These aspects should be systematically prepared and recorded in a suitable form (data management plan). Subject-specific characteristics and standards must be taken into account and the data management plan must be adapted in line with the current progress of the project.
2. The leaders of a research project are responsible for the management of all resulting research data during its entire duration. In consultation with the researchers involved, they decide on the selection of research data to be archived and the time, place and conditions of its archiving and, if applicable, its publication. In particular, all project participants are obliged to ensure compliance with good scientific practice and long-term archiving, as well as to implement the relevant requirements of the research funders and partners. In doing so, they take ethical, data protection and copyright aspects into account.
3. Research data must be archived to the extent and for the periods specified in the Guidelines for Safeguarding Good Scientific Practice (usually at least ten years). As a rule, this archiving should take place in a recognized discipline-specific research data repository¹ or in the institutional repository of TUDa (TUdatalib²). If there are reasons why archiving at the above-mentioned locations is not possible, an archiving solution should be chosen that ensures a similar level of long-term integrity preservation, accessibility and findability of the data. If the data volume of the research data to be stored is too high for complete archiving, a selection will be made according to the aspects of traceability, reproducibility and reusability.
4. In order to ensure the traceability and reproducibility of research results, research data should be published at an appropriate time and to an appropriate extent, unless other regulations (e.g. contracts in commissioned research or data protection law) or a planned commercial exploitation prevent this. In order to ensure their reusability and in accordance with the Open Access Policy of the TU Darmstadt,³ published research data should be assigned as open a license as possible. To implement the FAIR principles, the metadata describing the research data must be published to an appropriate extent.
5. The source code of self-developed research software, which was created at the TU Darmstadt, shall be made publicly available, provided that the research data generated with it can only be understood with it and no other reasons contradict a publication.
6. All research groups at TUDa strive to be up to date with regard to the rules, standards and recommendations for research data management that apply to their discipline. To this end, they appoint a scientific staff member as RDM officer who actively follows developments and supports the group members in research data management. The development of subject-specific recommendations at the appropriate level (departments, institutes, etc.) is recommended.

1 Evidence via the Registry of Research Data Repositories (Re3data), <https://www.re3data.org/>

2 <https://tudatalib.ulb.tu-darmstadt.de/>

3 Open-Access-Policy of Technical University of Darmstadt from August 29th 2019
https://www.ulb.tu-darmstadt.de/media/ulb/pdf/OA-Policy_TUDarmstadt.en.pdf

An RDM officer can also be appointed for several methodologically or disciplinary related disciplines. The RDM officers exchange information with each other at the appropriate level (at least in the department). TUdata supports the RDM officers and their networking.

7. When applying for external funding, the departments check what effort research data management will require in the project and what opportunities exist to raise corresponding funds from the funding agency.
8. Data literacy is a prerequisite for efficient and sustainable handling of research data and for compliance with good scientific practice. The methods of subject-specific research data management should therefore be appropriately anchored in teaching and continuing education. Due to the outstanding importance of today's students for tomorrow's science, the TU Darmstadt advocates the idea of "good research data management from the very beginning" and, in addition to teaching the theoretical basics at an early stage, strives for the continuous and practical application of the methods and tools in student internships and thesis projects.

These guidelines were adopted by the Executive Board of the Technical University of Darmstadt on September 8th 2022 and become effective immediately.

These guidelines are regularly reviewed by the central institutions and committees involved to ensure that they are up to date and can be adapted to new requirements, infrastructural developments and the needs of researchers. Compliance with legal and regulatory standards (including data protection regulations) is checked regularly.

Contact for questions regarding the guidelines is the TUdata team (www.tu-darmstadt.de/tudata).