

CLICCS Data Management

Preamble

Good scientific practice (GSP)¹ and DFG² guidelines for safeguarding GSP require that generated research data be retained for at least 10 years after the end of the project, and that they are published and reported as openly as possible³. CLICCS data should be retained for this purpose until at least the end of 2035. This ensures the traceability and connectivity of CLICCS research as well as the reusability of CLICCS data according to the GSP.

CLICCS uses research data in a wide variety of forms, such as measurement data, images, video and audio recordings, observation and simulation data, data from surveys, data from commercial enterprises, and software source code. In principle, CLICCS research data should be prepared according to the FAIR standard⁴ (Findable, Accessible, Interoperable, Re-usable) and the descriptive metadata should be provided with a CLICCS disclaimer and meaningful keywords. The long-term storage and verification of the data should take place in an established subject-specific repository or in the UHH⁵ repository, which are basically designed for an arbitrarily long retention period. This enables the application of the FAIR principles over several, possibly successive projects or associated longer durations. The repositories used must provide an interface to an overarching reporting system in order to gain a CLICCS-wide overview of the stored data. This applies both to data that is freely accessible (open data) and in cases where access is restricted to an organizational unit or to a project (closed user group).

Guidelines

The following guidelines are binding for all CLICCS members. They define the handling of all data used in CLICCS research - hereinafter referred to as CLICCS data for short.

- **Responsibility and tasks**

The responsibility for research data management lies with the project chairs. They take all measures to ensure the rules of the GSP throughout the entire life cycle of CLICCS data - planning, acquisition, processing, documentation, publication and long-term storage. They can define additional rules in their area.

Project chairs appoint respective data officers who perform the associated tasks and, if necessary, involve the scientists involved in the project.

¹ https://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/index.html

²

https://www.dfg.de/download/pdf/foerderung/grundlagen_dfg_foerderung/forschungsdaten/forschungsdaten_checkliste_en.pdf

³ Third-party data that is already verifiably stored does not have to be stored again.

⁴ https://www.forschungsdaten.org/index.php/FAIR_data_principles

⁵ <https://www.fdr.uni-hamburg.de/communities/cliccs?page=1&size=20>

In cooperation with central institutions⁶, CLICCS offers support, advice, training and tools on the topic of research data management.

- **Data protection, backup**

Backups of CLICCS data must be made regularly to prevent data loss. Changes to data (e.g. corrections) are only made to copies of the original data.

- **Documentation, data description**

CLICCS data are documented according to the GSP. This documentation is based on the subject-specific metadata standards and contains, among other things, information on the origin or the context of origin as well as on the tools used, physical units, date, time, measuring instruments, etc.

- **Publication and Open Data**

CLICCS data are published as openly as possible and in accordance with the FAIR standard. The decision whether and in what capacity to publish the data, the place of publication and the compliance with the legal framework (e.g. data protection, ethics, copyright) are the responsibility of the scientists. The use of a Creative Commons license (CC) is recommended. Data should be published in a recognized repository, with a persistent identifier (e.g. DOI), metadata, keywords and a CLICCS disclaimer.

- **Documentation of data storage**

Each project is required to prepare a data management plan (in accordance with DFG² guidelines) that outlines the entire lifecycle of CLICCS data - planning, acquisition, processing, documentation, publication, and long-term retention. This plan will be updated every six months until the end of the project. The respective data management plan is stored in an RDMO instance (Research Data Management Organizer) of DKRZ or UHH. Both implement a template adapted for CLICCS. The data management plans are shared internally within CLICCS.

In addition to the proof of scientific publications, CLICCS also uses the Research Information System (FIS) of the UHH for the proof of published data.

Within the framework of quality assurance, it is checked whether the corresponding data management plans are available and updated. The FIS is used to produce a regular report showing which repositories store data and to which CLICCS projects are the data related. The report will also oversee whether data storage is in accordance with the FAIR principles, as well as whether these data are publicly published or sustainably secured within the organization or project.

⁶ German Climate Computing Center (www.dkrz.de)

ICDC Integrated Climate Data Center (<https://www.cen.uni-hamburg.de/en/icdc.html>) and

ZFDM – Center for Sustainable Research Data Management (www.fdm.uni-hamburg.de)



- **CLICCS Disclaimer, Keywords**

The following disclaimer is mandatory for all CLICCS publications, including data publications:

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If possible, members of the UHH should add: *"contribution to the Center for Earth System Research and Sustainability (CEN) of Universität Hamburg".*

A mandatory keyword list will be provided centrally.

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