



HALO Data Policy

Preamble

The Scientific Steering Committee (Wissenschaftlicher Lenkungsausschuss) and the Board (Kuratorium) of High Altitude and Long Range Research Aircraft (HALO) support an open Data Policy. In order to define the rules of the accessibility and exchange of data collected using HALO the following document has been approved by the Scientific Steering Committee and the Board of HALO. According to §29 Abs. 2 of the HALO-Konsortialrahmenvertrag it is mandatory for all scientific HALO missions.

Mission-specific parameters have to be set in a Data Protocol. For this, the template in Appendix A has to be used. The M-PIs, Contributors and Associated Scientists of each HALO research mission (Mission) have to confirm these Data by subscribing to the Data Protocol.

This Data Policy aims to:

1. Ensure the fair use of the Data,
2. Encourage the rapid dissemination of the scientific results,
3. Uphold the rights of the individual scientists,
4. Ensure the visibility and the integrity of the project,
5. Treat all involved researchers equitably,
6. Encourage an orderly and timely analysis and publication of the Data, and
7. Produce a central repository of the data to be released to the public domain.

§ 1 Definitions

The term Konsortialpartner refers to the research institutes and organisations that work together as partners according to the HALO-Konsortialrahmenvertrag and that co-finance the availability of HALO and therefore have privileged access rights, as well as the Universities using HALO via the funding of the DFG.

The term Person refers to the individual acting in the relevant role as well as - if applicable - to the Konsortialpartner they are representing.

The term Data refers to information that was obtained for scientific use in the context of missions with HALO. Data can be based on observations or simulations and is either Raw Data or Processed Data. Primary Data include Raw Data that have been measured directly or, in case of simulations, the Data that drive the model run. Processed Data include higher level products, based on primary Data, or results from model runs.

The term Mission Principal Investigator, also called *M-PI*, refers to a Person that is the scientific head of the mission. There may be more than one M-PI per mission, in which case the M-PIs shall make all decisions under this Data Policy by unanimous consent and appoint one of them to represent them in the communication with the other Members (M-PI according to § 12 (1) of the HALO Konsortialrahmenvertrag).

The Data Provider is the Person in charge of the instrument used to measure the Data, or the Person responsible for the retrieval or for a numerical simulation.

The term Mission Contributor refers to a Person that contributes to the Data of the mission.

The term Associated Scientist refers to an individual wishing to use the Data but not to participate in the mission. Associated Scientists must provide a short written description of her/his aims to the M-PI to be considered for membership. Membership is granted by the M-PI.

A *Member* of a mission is a Person that is a Data Provider, Mission Contributor, Associated Scientist or M-PI. All Members must subscribe to the Data Protocol of the mission based on the template in Appendix A. The membership of the Konsortialpartner derives from the individual employed by or associated with them. The represented Konsortialpartner is to be named in the Data Protocol. Persons who do not subscribe to the Data Protocol cannot participate in and become Members of a mission.

The term *Quicklook* refers to a visualization of preliminary Data that is produced shortly after the respective Data set was created.

§ 2 Data management

(1) Data ownership: Data Providers may or may not legally own the Data they create for a mission. It is the responsibility of each Data Provider to ensure that he/she can act on behalf of the respective Data Owner with regards to the rights and duties imposed by this Data Policy.

It is the responsibility of each Mission Contributor to assume the role of or to get linked to a Data Provider for the Data they contribute in the context of the mission. Contact details of the Data Provider shall be given within each file uploaded to the repository. Otherwise, the Person uploading the Data to the repository is considered to be the Data Provider.

(2) Data repository: The repository for the Data of a mission is the HALO Database, operated by the Institute of Atmospheric Physics of the German Aerospace Center (DLR) (the “*HALO Database*”). Data rejected by the administrators as unsuitable for the HALO Database shall be deposited in another persistent and accessible repository that supports the requirements of this Data Policy. Usage of a repository means delegating the necessary administrative tasks to repository staff.

(3) Citation of Data: Referencing must be persistent and reproducible, as facilitated by digital object identifiers (DOI). The DOI of the HALO Database is <https://doi.org/10.17616/R39Q0T>. Additional parameters (e.g. dataset number, campaign name, instrument name) may be needed for reproducibility, depending on the subset of Data to be referenced. The access date should always be given. Separate DOIs shall be applied to subsets of the Data.

(4) Data format: The Data must be provided in a form that ensures accessibility without proprietary tools/software. Essential metadata must be provided within each Data file. Acceptable file formats, conventions, essential metadata and standard variable names are determined by the repository and must be adhered to.

(5) Data quality: The analysis of the scientific Data has to be made in accordance with the rules of good scientific practice defined by the Deutsche Forschungsgemeinschaft (DFG). This includes in particular that the analysis procedures have to be transparently documented and the scientific Data and the documentation necessary to understand the Data has to be stored for at least 10 years. A long time preservation of the Data beyond 10 years is encouraged.

§ 3 Provision of Data, licensing and sharing

(1) The Data has to be made publicly available under the license **CC-BY 4.0** (the “*License*”) via the Data repository no later than **5 years** after the end of the respective mission. The M-PI can decide for a shorter time period with the unanimous consent of every involved Data Provider. Within this time period, which is called the “*Non-Licensed Period*”, the use of Data is restricted according to the provisions of the subsections below and the Terms of Use, as set out in Appendix B of this Data Policy.

(2) The License has to be accepted before using the Data.

(3) Sub-Periods: The Non-Licensed Period is subdivided into up to three sub-periods (each a “Sub-Period”). These start with an Upload Period, followed by a Quality Assurance Period, followed by a Credit Period, which are defined in the following. The maximum durations of these Sub-Periods are defined below and may not be exceeded. The M-PI can decide for shorter lengths of time for the Sub-Periods (the “Time Periods”) with the unanimous consent of every involved Data Provider, which is strongly encouraged. Individual Sub-Periods may be skipped by setting the corresponding Time Periods to zero.

(4) Quicklooks: Each Data Provider will provide Quicklooks of their Data to the Members shortly after each flight, unless technical reasons prohibit the creation of timely Data sets.

(5) Upload Period: The Data of each individual scientific instrument along with the corresponding documentation to understand the Data shall be made available to all Members as soon as possible. For the exchange of very first Data, where frequent updates are expected, the usage of alternative platforms than the HALO Database is encouraged. No later than **18 months** after the end of the mission, the Data and the corresponding documentation must be made available to all Members via a repository as defined in §2(2). The Data should contain qualifiers of the status of the analysis (preliminary, final, etc.). Corrections and amendments to preliminary Data must be made available to all Members as soon as possible.

(6) Quality Assurance Period: For a Time Period not exceeding **30 months** after the end of the mission, the Data is only available to Members.

This Sub-Period is for quality assurance and Data Providers may consider their Data as preliminary without further justification within this Sub-Period.

In this Sub-Period the Data is considered Confidential Information according to §27 of the HALO-Konsortialrahmenvertrag. Disclosing of Data from other Data Providers to non-Members is allowed only with the explicit consent of the respective Data Provider. Before disclosing own Data to individuals or organisations who are non-Members, the M-PI has to be informed.

Using of and cross-checks between different Data sets are encouraged. When Data are shared, it should be ensured that research that is related to a measured or modelled Data set should not duplicate already ongoing work by the Data Provider, especially when the topic is central for an ongoing PhD thesis.

(7) Credit Period: The Data must be made publicly available via the HALO Database after the Quality Assurance Period and can be assumed to be ready for scientific interpretation. Use of the Data are bound to the terms of use stated in Appendix B for the Credit Period, which ends not later than 5 years after the end of the mission.

Upon request by the Data Provider, the deadline for making the Data publicly available can be extended by the M-PI. Such exceptions shall only be granted in case there are reasonable doubts about the Data quality. The affected Data must be made publicly available as soon as they are ready for scientific interpretation.

§ 4 Publications/Conference Contributions/Public meetings

(1) The regulations regarding publications, conference contributions and public meetings for the Non-Licensed Period are set in the terms of use in Appendix B.

(2) After the Non-Licensed Period, users of the Data are encouraged to offer co-authorship to relevant Data Providers when appropriate. HALO and the relevant mission must be acknowledged, which is stipulated by the License.

(3) Recent version of Data: The Data Provider must promote the usage of the best available Data of their instruments and models at that time for publications, conference contributions and/or public meetings.

§ 5 Press releases

(1) Publications or press releases where the mission itself is the main subject, so called overview articles, must be approved by the M-PI and every Data Provider before submission. In this case the consent of the Scientific Steering Committee according to §10 (6) f) of the HALO-Konsortialrahmenvertrag is considered given.

(2) Press releases relating to Data, created during a mission, must be approved by the corresponding Data Provider(s). This paragraph applies only during the Non-Licensed Period.

§ 6 Avoidance of disputes

(1) Any disputes about the use of the Data, in particular with respect to publications, will be resolved by a committee of scientists. The members of the committee are suggested by the M-PI and have to be accepted by all concerned Data Providers. If no consent can be reached, the members of the committee will be appointed by the WLA.

(2) It is encouraged to hold scientific meetings on a regular basis, where all Mission Contributors and Associated Scientists can present their ongoing work and their plans for future work with the Data of the mission. This shall avoid parallel efforts and wrong interpretations of Data, which are a both potential sources of disputes.

§ 7 Constraints

(1) This Data Policy is made according to §29 Abs. 2 of the HALO-Konsortialrahmenvertrag. In case of there being a conflict of terms and/or interpretation of this Data Policy with the HALO-Konsortialrahmenvertrag, the latter shall prevail.

(2) National and international laws or regulations, as well as commitments to other projects or networks, might constrain the agreements of this Data Policy. In that case the M-PI has to inform all Data Providers about those constraints. The M-PI shall find a mutual solution on a case-by-case basis together with all involved Mission Contributors.

§ 8 Final provisions

This Data Policy takes effect on **01.01.2021**.

Appendix A

Data Protocol for a HALO research mission

The HALO Data Policy as agreed on 01.01.2020 applies to this mission. The mission specific parameters are as follows (recommended Time Periods given in blue font):

- **Name of the mission:** ???
- **Mission end date:** tt/mm/yyyy
- **Upload Period:** 6 months after the mission end date
(maximum time period: 18 months)
- **Quality Assurance Period:** 18 months after the mission end date
(maximum 30 months)
- **Credit Period:** 5 years after the mission end date
(maximum time period: 5 years)
- **M-PI and affiliation at the time of the mission:**
???

The undersigned confirms the Data Protocol.

Signature of Participant:

Date, place:

Name:

Represented Konsortialpartner:

Role: M-PI / Contributor / Associated Scientist

Address:

Email:

The M-PI grants the membership of the mission.

Signature of a M-PI of the mission:

Date, place:

Appendix B

Terms of use during the Non-Licensed Period

During the Non-Licensed Period, the use of Data gained from HALO missions is prohibited, except when used under the following terms of use:

- (1) Time Periods: Time Periods mentioned in this Terms of Use are defined in the respective Data Protocol of a mission, which is authoritative for these Terms of Use.
- (2) Non-Disclosure during Quality Assurance Period: During the Quality Assurance Period, Data is confidential and must not be disclosed to non-members of the mission without the explicit consent of the respective Data Provider.
- (3) Non-Dissemination during Credit Period: During the Credit Period, Data must not be disseminated to third persons by the user and may only be obtained from the HALO Database or the respective Data Provider.
- (4) Co-authorship: The lead author has to offer co-authorship to the Data Provider, if Data of the mission is used for publications (scientific articles), conference contributions or in public meetings.
- (5) Publications: The lead author of a publication must send the manuscript to all co-authors, the Data Provider and the M-PI before submission. Consent must be obtained from all co-authors and the Data Provider before submission. Approval can be assumed from all involved that have not answered within two weeks after sending out the manuscript. The lead author has to take into account substantial comments from the co-authors before the submission of the manuscript or abstract. The co-authors, the M-PI and the Data Providers shall be kept informed of the further progress of the review and publication.
- (6) Right to refuse: In justified cases (e.g. wrong interpretation of measurements, Data preliminary) the Data Provider has the right to refuse the usage of the Data in publications, conference contributions or in public meetings.
- (7) Abstracts: The lead author of an abstract to a conference contribution or a public meeting must send the abstract to all co-authors, the Data Provider and the M-PI before submission. Consent must be obtained from all co-authors before submission. Approval can be assumed from all colleagues that have not answered within two weeks after sending out the manuscript.
- (8) Acknowledgement: HALO, the relevant mission and the Data source must be acknowledged in a suitable way.
- (9) The Data are provided on an "as is" basis, and the use of the Data is on the user's own risk. The Data Provider does not assume any responsibility for the Data usage.