

NDACC Data Protocol for Instrument Principal Investigators

It is the spirit and purpose of the NDACC to foster the broadest possible collaboration among interested scientists via quick access to NDACC data. However, with any good measurements, the investigators themselves bear the ultimate responsibility for data quality in accordance with guidelines defined by their Instrument Working Group. The NDACC Data Protocol for Instrument Principal Investigators recognizes that, in order to produce a verifiable data product, an NDACC Instrument Principal Investigator (NDACC PI) requires sufficient time to collect, reduce, test and analyze the data products, while at the same time endeavors to provide timely data to the community.

General

NDACC PIs responsible for the instrumentation, measurements and reduction to NDACC data products submitted to the Data Host Facility (DHF) agree to adhere to the following principles:

- i. NDACC PIs are encouraged to establish the scientific collaborations needed for the optimum testing and verification of their measurements.
- ii. It is required that the verifiable product(s) referred to as “NDACC Data” which includes all Instrument Working Group (IWG) approved versions, be archived at the DHF for public availability within a one-year period after acquisition.
- iii. Within the first year after acquisition, DHF data are available only to NDACC affiliates. NDACC PIs are encouraged to approve the public release of the data on a time scale shorter than one year.
- iv. Metadata are an integral part of the reference data quality. Therefore, NDACC PIs must provide and update a metadata text file sufficiently to enable the continuing assessment of data quality. This documentation is publicly available at the DHF and should include (but is not limited to):
 - current contact information so that data users can fulfill their obligation to interact with data providers and coordinate publication obligations,
 - a brief description and history of the instrument and any changes to it,
 - a report of validation exercises and instrument or data inter-comparisons,
 - a description of the data reduction processes,
 - an explanation of all data versions existing in the database, including a description of the data processing versions and procedures,
 - a statement of all DOIs that are applicable to the dataset,
 - a statement of the Data License,
 - the statement: “If the data will be used in a publication/communication, the PI must be contacted during the preparation of the publication/communication to discuss possible collaboration and co-authorship“.

- v. Data providers must provide all metadata in their data files as mandated by the associated IWG best practices.
- vi. NDACC PI's must submit annual reports containing their contact information, a summary of their instrument's operational and funding status, information about the data analysis and archiving schedules, and a list of relevant publications. In addition, they are requested to highlight any issues that they wish called to the attention of the NDACC Steering Committee.
- vii. NDACC PI's are expected to provide, and update, as needed, a brief descriptive paragraph for inclusion in the Measurements & Analyses Directory appearing on the NDACC webpages.

Rapid Delivery (RD) Data

There are times when centralized access to preliminary data would be of operational benefit to the public even though final verification is not yet complete. Cases may include:

- i. campaigns in the vicinity of an NDACC station for which centralized access to the preliminary NDACC data analyses would help in achieving the goals of the campaign,
- ii. geophysical episodes for which such analyses might be useful in planning a research response, (e.g., at the occasion of a volcanic eruption or big fire episode),
- iii. satellite and model intercomparison and validation activities,
- iv. use in near real time operational analyses,
- v. data from non-NDACC affiliated sites that are valuable to the public.

A dedicated directory on the public archives of the DHF is available for such RD. It is expected that NDACC affiliated instruments will continue to archive the final verified data products within one year of acquisition. At such time the obsolete RD will be removed from the DHF. Data from non-NDACC affiliated sites will remain indefinitely. RD Data are not the final verified NDACC Data.

Data Versioning and Reprocessing

For traceability all submitted datafiles are retained at the DHF. Beginning in 2020 multiple versions are publicly available as new versions are ingested. Versions are defined at the IWG level, and details are found in the Data Versioning Protocol and at the IWG webpages at www.ndacc.org. The NDACC PI must update the metadata text file and the datafile metadata accordingly. The methodology and time frame for updating the archive for each instrument type are established by the corresponding IWG.

If an NDACC PI finds an issue with a submitted dataset, the entire affected archived dataset should be reprocessed as soon as possible to maintain compatibility. It is highly recommended that PIs retain old versions of the data at their home facility.

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