

International Community Guidelines for Sharing and Reusing Quality Information of Individual Earth Science Datasets

Carlo Lacagnina¹, Ge Peng², Ivana Ivanova³, Robert Downs⁴, Hampapuram Ramapriyan⁵, David Moroni⁶, Yaxing Wei⁷, Lesley Wyborn⁸, Dave Jones⁹, and Anette Ganske¹⁰

¹Barcelona Supercomputing Center

²NC State University and NOAA's National Centers for Environmental Information (NCEI)

³Curtin University

⁴Columbia University of New York

⁵NASA Goddard Space Flight Cent

⁶NASA Jet Propulsion Laboratory

⁷Oak Ridge National Laboratory

⁸Australian National University

⁹StormCenter Communications

¹⁰Technische Informationsbibliothek (TIB)

November 23, 2022

Abstract

The knowledge of data quality and the quality of the associated information, including metadata, is critical for data use and reuse. Assessment of data and metadata quality is key for ensuring credible available information, establishing a foundation of trust between the data provider and various downstream users, and demonstrating compliance with requirements established by funders and federal policies. Data quality information should be consistently curated, traceable, and adequately documented to provide sufficient evidence to guide users to address their specific needs. The quality information is especially important for data used to support decisions and policies, and for enabling data to be truly findable, accessible, interoperable, and reusable (FAIR). Clear documentation of the quality assessment protocols used can promote the reuse of quality assurance practices and thus support the generation of more easily-comparable datasets and quality metrics. To enable interoperability across systems and tools, the data quality information should be machine-actionable. Guidance on the curation of dataset quality information can help to improve the practices of various stakeholders who contribute to the collection, curation, and dissemination of data. This presentation introduces international community guidelines to curate data quality information that is consistent with the FAIR principles throughout the entire data life cycle and inheritable by any derivative product. Supportive case studies demonstrate the applicability of the proposed guidelines.

We are developing ...

International Community Guidelines for Sharing and Reusing Quality Information of Individual Earth Science Datasets

<https://doi.org/10.31219/osf.io/xsu4p>

Global Interdisciplinary Domain Experts

- Data producers, publishers, and users;
- Data, science, and technology stewards;
- Data, information, and service providers;
- Standards and policy makers.



Takeaways

- **Strong needs** for developing community and practical guidelines
- Quality information about data and metadata/documentation is important in:
 - Establishing the **trustworthiness** of data and services,
 - **Increasing** sharing and **value** of the data for diverse applications.
- **Community feedback** is crucial in improving the quality of the guidelines

