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HARMONise - Towards the sustainable management of metadata associated with marine molecular sequencing data

Monday 4 November 2024 14:00 (1 hour)

Biomolecules, such as DNA and RNA, provide a wealth of information about the distribution and function of marine organisms, and molecular sequencing data from the marine realm is generated across several Helmholtz Centers. Biomolecular (meta)data, i.e. DNA and RNA sequences and all steps involved in their creation, exhibit great internal diversity and complexity. However, high-quality (meta)data management is not yet well developed and harmonized in environmentally focused Helmholtz Centers. As part of the HMC Project HARMONise (Enhancing the interoperability of marine biomolecular (meta)data across Helmholtz Centres), we developed sustainable solutions to enable high-quality, standards-compliant curation and management of marine biomolecular metadata at AWI and GEOMAR to better embed biomolecular science into broader digital ecosystems and research domains. Our approach builds on a relational database that aligns metadata with community standards such as the MIxS (Minimum Information about any (x) sequence) supported by the International Nucleotide Sequence Database Collaboration (INSDC) to promote global interoperability. A web-based portal enables the standardized export and exchange of core metadata, e.g. with the Marine Data Portal (<https://marine-data.de/>), which will enhance the findability and accessibility of biomolecular (meta)data within and across research areas. The alignment of HARMONise-hosted metadata with domain-specific standards and the provision of data in the relevant exchange formats will facilitate interoperability with the Helmholtz knowledge graph (UNHIDE, <https://docs.unhide.helmholtz-metadaten.de/intro.html>) and global digital ecosystems (Ocean Info Hub of the UNESCO Ocean Data and Information System, <https://oceaninfohub.org/>). HARMONise thus specifically targets the advancement of F, A, and I in FAIR for biomolecular (meta)data, and supports Helmholtz researchers in delivering high-quality metadata to international data repositories. HARMONise connects with high-level international projects of the Ocean Biomolecular Observing Network (OBON) Programme of the UN Decade of Ocean Science, to further align our developments with global strategies and ensure Helmholtz-to-global interoperability. The project HARMONise (ZT-I-PF-3-027) is funded by the Initiative and Networking Fund as part of the Helmholtz Metadata Collaboration Project cohort 2021.

Please specify "other"

In addition, please add 3 to 5 keywords.

sequencing metadata, eDNA, interoperability, metadata standards

Please specify "other"

For whom will your contribution be of most interest?

Researchers

Please assign yourself (presenting author) to one of the following groups.

Researchers

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