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HARMONise –Enhancing the interoperability of marine biomolecular (meta)data across Helmholtz Centres

Biomolecules, such as DNA and RNA, provide a wealth of information about the distribution and function of marine organisms, and biomolecular research in the marine realm is pursued across several Helmholtz Centers. Biomolecular metadata, 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, we aim to develop sustainable solutions and digital cultures 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. At the same time, we ensure the harmonization of metadata with existing Helmholtz repositories (e.g. PANGAEA). A web-based hub will enable the standardized export and exchange of core metadata, in line with domain-specific standards and using standard conventions such as JSON(-LD). Here we will present the current status of the database scheme, highlight the use of standards and fields that promote interoperability, and outline the planned development of an exchange hub for sharing and validating biomolecular metadata across Helmholtz Centers. Enabling sustainable data stewardship, export and publication routines will support researchers in delivering Helmholtz biomolecular data to national European and global repositories in alignment with community standards and the FAIR principles.

Please assign your poster to one of the following keywords.

Standards

In addition please add keywords.

sequence-data-management, interoperability, metadata-harmonization, FAIR-principles

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

Scientist/ Data Producer

Please specify "other" (stakeholder)

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