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Conference Abstract

What is the Status of Global Digitisation? MIDS as an Institutional and Global Digitisation Standard

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Abstract

The digitisation of the world's natural science collections is expanding massively and providing a unique global resource for answering some of the most fundamental bio- and geodiversity questions. However, digitisation at this scale can only be done in stages, increasing the variation in the level of digitisation both between and within collections. The ability to measure and monitor the level of digitisation of each individual specimen and, by extension, each collection on a national or global scale has never been more important. The Minimum Information about a Digital Specimen (MIDS) standard is being developed to provide an international digitisation standard within the Biodiversity Information Standards (TDWG) organisation. The standard, along with implementations which can calculate the MIDS level of specimens and, by extension, datasets, provide users with tools to help develop a digitisation strategy as well as plan, manage and monitor a digitisation programme, including prioritisation and data enhancement. For researchers, whilst the MIDS level of published specimens does not provide information about the quality of the data present, it does indicate the expected

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amount of associated data for intended analyses, including geographic coordinates and identifiers.

The MIDS website provides access to the current draft of the standard. The four MIDS levels (MIDS0 to MIDS3) are described, and for each level the purpose is included. The purpose has been key to defining the information that is required to be present.

The information recorded for each specimen is categorised into information elements. A detailed schema for the information elements includes the label, definition, usage note, purpose and examples as well as the disciplines for which each element is required (Biology, Geology, Palaeontology). The information elements required for each MIDS level are cumulative, with each level adding additional information relevant for the purpose of the level. Specimen data recorded in collection databases and submitted to international aggregators such as the Global Biodiversity Information Facility (GBIF) need to be mapped to the information elements to enable the calculation of the MIDS level.

The website explains how the Simple Standard for Sharing Ontology Mappings (SSSOM) (Matentzoglu et al. 2022) is being used to map Darwin Core (DwC) (Wieczorek et al. 2012)and Access to Biological Collection Data (ABCD) (Access to Biological Collection Data task group 2007) terms to MIDS. It provides a tabulated quick reference of MIDS mappings with a filter option to enable users to quickly review the mapping by MIDS level or by information element.

Several tools have been developed, implementing MIDS to calculate the MIDS levels of datasets, and the website provides links to these. As the MIDS standard is not yet ratified, there have been updates which are not reflected in all the tools currently available. There is a reference implementation as part of the open Digital Specimen model with the Distributed System of Scientific Collections (DiSSCo) where the MIDS level is calculated for each digital specimen. The MIDS Calculator can be used to calculate the MIDS score for DwC archive and ABCD biological datasets based on the current version of MIDS. Additional functionality for geological and palaeontological datasets is being developed. As the MIDS standard approaches public review we encourage curators and collection managers to test out the functionality on their collection data and provide feedback using the MIDS GitHub repository.

Keywords

SSSOM, DiSSCo, Darwin Core, specimens, GBIF, mapping, information elements

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Conflicts of interest

The authors have declared that no competing interests exist.

References

- Access to Biological Collection Data task group (2007) Access to Biological Collection Data (ABCD), Version 2.06. http://www.tdwg.org/standards/115. Accessed on: 2025-10-14.
- Matentzoglu N, Balhoff JP, Bello SM, Bizon C, Brush M, Callahan TJ, Chute CG, Duncan WD, Evelo CT, Gabriel D, Graybeal J, Gray A, Gyori BM, Haendel M, Harmse H, Harris NL, Harrow I, Hegde HB, Hoyt AL, Hoyt CT, Jiao D, Jiménez-Ruiz E, Jupp S, Kim H, Koehler S, Liener T, Long Q, Malone J, McLaughlin JA, McMurry JA, Moxon S, Munoz-Torres MC, Osumi-Sutherland D, Overton JA, Peters B, Putman T, Queralt-Rosinach N, Shefchek K, Solbrig H, Thessen A, Tudorache T, Vasilevsky N, Wagner AH, Mungall CJ (2022) A Simple Standard for Sharing Ontological Mappings (SSSOM). Database 2022 https://doi.org/10.1093/database/baac035
- Wieczorek J, Bloom D, Guralnick R, Blum S, Döring M, Giovanni R, Robertson T, Vieglais D (2012) Darwin Core: An Evolving Community-Developed Biodiversity Data Standard. PLoS ONE 7 (1). https://doi.org/10.1371/journal.pone.0029715