

3D Imagery and Data Task Group Charter

A Task Group of the Audubon Core Maintenance Group

Submitted 11 June 2019

1. Convenor

- Doug Boyer douglasmb@gmail.com

2. Core Members

- Rebecca Snyder
- Gary Motz
- Julia Winchester
- Jon Blundell
- Kate Webbink

3. Motivation

A growing number of 3D imaging methods are being used to create high fidelity models of natural history objects, and in some cases even to record field observations of living organisms. The core metadata describing the files resulting from these imaging events is more extensive than that currently included in Audubon Core. Therefore the ability to describe, find and preserve these digital objects robustly in biodiversity databases remains limited. As imaging becomes more and more dominated by 3D, Audubon Core will be more and more limited until its terms in this area are extended.

4. Goals Outputs and Outcomes

The deliverables from this task group will include the following additions to the Audubon Core standard:

Phase 1 (to be completed by the end of 2019):

- Property term additions to Audubon Core. The terms will be used to describe metadata specifically related to 3D images and will be organized within the Service Access Point (SAP) vocabulary.
- Additional controlled vocabulary terms to be used as values for `ac:variant`. The terms will describe the format of the SAP as do the current recommended values.

- Class terms for 3D imaging modalities to be used as values for `ac:subtype`. These terms would be subclasses of `dcmitype:StillImage`.

Phase 2 (to be completed by the end of 2020):

- Property term additions for creating modality-specific metadata. Many of these terms will be organized within the Resource Creation vocabulary.

The task group will also produce the following reference documents, which may be ancillary to (not included within) the standard.

- A descriptive document summarizing the major 3D imaging modalities in use. This document will associate the enumerated modalities with their corresponding class terms (`ac:subtype` values) and the recommended metadata terms that are appropriate for describing each modality.
- A descriptive document summarizing the major 3D file formats and listing the recommended metadata terms for describing them.
- A Best Practices document for describing the image capture event.

5. Strategy

Since the deliverables outlined in this charter constitute coordinated additions to Audubon Core, the task group will produce a Feature Report as required in Section 4.2.1 of the Vocabulary Maintenance Specification (VMS) prior to Phase 1 of the work. The convenor and core members will collaborate with CS3DP working group to assemble the use cases necessary for the creation of the report.

Following the development of the suite of terms, the task group will collect implementation experience data from the CS3DP working group who have tried using the new terms with their data sets. These data will be included in an Implementation Experience Report (Section 4.2.2 of the VMS) for Phase 1 that will be completed before submission of the Phase 1 terms for adoption.

Following the completion of Phase 1, the experience gained in Phase 1 will be used to guide the Feature Report for Phase 2 and the subsequent development of the Phase 2 terms. After the CS3DP constituency has had an opportunity to try using the Phase 2 terms, their experience will be documented in a Phase 2 Implementation Experience Report prior to submission of the Phase 2 term list.

The additional documents will be developed simultaneously with the terms that they describe so that they will be available for use by the community at the time the new terms are adopted.

6. Becoming Involved

- Anyone with practical experience in describing 3D imagery in a database is invited to contact the convenor or core members to register their interest.

7. History/Context

- Multiple initiatives began seeking develop and implement community standards for 3D data description and preservation between 2013-2018 partly in response to major increases in the rate of production of 3D imagery including major NSF DBI (ADBC &

ABI) funded initiatives to 3D image 10's of thousands of species from museum collections (e.g., oVert).

8. Summary

- A task group to extend vocabulary relating to 3D imagery and data has been formed under the Audubon Core Maintenance group. The main deliverables in Phase 1 of the group's work will be: property terms for describing Service Access Points of 3D images, controlled vocabulary terms for 3D imaging formats to serve as values for `ac:variant`, and class terms for 3D imaging modalities to be used as values for `ac:subtype`. The main deliverables in Phase 2 will be property terms additions for 3D modality-specific metadata.

9. Resources

- <https://github.com/tdwg/ac/tree/master/3d> Group GitHub repository
- <https://osf.io/ewt2h/>
- https://www.idigbio.org/wiki/index.php/3D_Scan_Modality_Subtypes
- <https://www.idigbio.org/wiki/index.php/MorphoSource>