

3D Preservation Town Hall Meeting

2022-11-10 [Zoom](#)

Attendees, please add your name [here](#)

This document should also be used for group note taking ([below](#))

Agenda ([slides](#))

1. Recap previous meeting
2. Overview of priority topic areas
Here is the clarification on those concepts (only from the coordinators' perspectives, we can refine more as a group):
 - Metadata schema development
 - a general schema (similar in generality to Dublin Core) or a few new terms added to an existing schema to aid discovery / aggregation of 3D data
 - More specific metadata needs for modalities/disciplines
 - Shared infrastructure development (e.g., shared repositories, metadata aggregators)
 - [GBIF](#)-like aggregation of 3D metadata
 - Development of a shared repository which can be used consortially
 - Existing solutions?
 - Common platforms / viewers / tools - development or modification
 - Using singular but common viewing platform for 3D
 - Developing software and tools which can be reused at local institutions (e.g. repository packages, automations for metadata generation or harvesting)
3. Open conversation: metadata and common platforms
 - a. How can we select/prioritize shared community goals in these topic areas?
 - b. What are the preservation implications of the community goals?
 - c. How can we leverage CS3DP to ensure that community goals are considered in individual project development?
4. Next meeting Dec. 7th, 10:30 CST, 11:30 EST, 4:30 GMT
5. Adjourn

Attendees - please type your name and affiliation below

Adam Rountrey - University of Michigan
Vera Moitinho de Almeida - CODA, University of Porto
Doug Daniels - UCLA Library
Jen Grayburn - Princeton University
Francesca Albrezzi - Office of Advanced Research Computing, UCLA
Lisa Snyder - Office of Advanced Research Computing, UCLA
Rachel Fernandez - Center for Digital Antiquity/tDAR at Arizona State University
Wen Nie Ng, Virginia Tech
Nathan Hall, Virginia Tech
Gary Motz, Indiana University
Julie Winchester, MorphoSource 3D Data Repository
Doug Boyer, MorphoSource 3D Data Repository
Jennifer Moore, Washington University in St. Louis

Group Notes

Metadata Schema Development

- DB- need modality for discoverability, file type
- AR need Dublin Core or DataCite resource type for 3D
- DB- then we need subtypes under 3D resource, preservation- need to know how it was created / modified, how can we trust, do we know it is correct
- JM- Doug, do you have a 3D-specific sheet you use for submissions
- DD - As a starting point for metadata specific to 3D, we could perhaps look at 3D hardware or software that exports XML files with pertinent settings
- VM- Audubon core, lacking something describing the processes
 - JM- how can we capture process information without using readme- processing should be in the metadata schema
- GM- [linked.art](#) crossover between art and natural history museums (as example of interdisciplinary)
- DD- openheritage3D.com has good examples of large datasets being visualized using Potree... could morphosource incorporate the Potree viewer alongside objects?
 1. Modality is an important place to start with discovery
 2. 3D type is also an important place to start
 - a. Audubon core has been working toward this
 - b. There are no general 3D resource types in big schematas (e.g. datacite)
 - i. About a class = 3d resource
 1. Subclass = modality
 2. Subclass = file type
 3. What metadata do we need to make a 3D aggregator happen
 - a. We need it now
 - b. At minimum, 3d resource

4. Implications for preservation of community goals, FAIRness are
 - a. Metadata that lives on a file
 - b. Metadata that tells about the re
5. If you are here on 11-10-2011 try this link to
https://docs.google.com/document/d/1w-sdZQL2Z2RcF_9H-4YILC8ijonRIfuD1jCBKCEHvaQ/edit#
6. We need controlled vocabularies related process need; above and beyond readmes
 - a. Ontologies
 - b. Make it available in the record
 - c. Make it so we don't have to open the readme
7. Linked.art is connecting are to natural history museums

MorphoSource processing activity list (obviously definitions are needed to be fully useful):

- id: Align Parts
- id: Background Removal and/or Masking
- id: Bit Depth Change
- id: Crop
- id: Histogram Editing
- id: Image and/or Mesh Compression
- id: Merge
- id: Mesh to Point Cloud
- id: Mesh and/or Point Cloud Texturing
- id: Patch
- id: Photos to Dense Point Cloud
- id: Photos to Digital Elevation Model
- id: Photos to Mesh
- id: Photos to Sparse Mesh and Depth Map
- id: Photos to Sparse Point Cloud and Depth Map
- id: Point Cloud to Mesh
- id: Reconstructed Tomography to Mesh
- id: Reconstruction

- id: Simplification
- id: Smoothing and/or Noise Reduction
- id: Sparse Point Cloud and Depth Map to Dense Point Cloud
- id: Sparse Mesh and Depth Map to Mesh
- id: "Transform: Reflection"
- id: "Transform: Rotation"
- id: "Transform: Scale"
- id: "Transform: Translation"

Shared Infrastructure development

- FA- best practices, need screenshot or video of 3D asset in aggregator
- LS- Agrees shared repository is needed, but there are so many different flavors of 3D (e.g., environments)
- JB- Push back on the need for multiple repositories, what about Morphosource?
- JW- Morphosource does cover several domains and modalities, some groups want to spin up own 'Morphosources' in different contexts, want more community involvement
- DB- agree with LS that scenes or environments probably would not work well in Morphosource, but Morphosource can work across disciplines
- JG- shared repository is good, but need ease of use like sketchfab
- LS- we don't control Sketchfab
 - Aggregators = accessibility;
 - Baseline
 - Shared repository would be amazing, beyond sketchfab
 - There are soooooo many flavors of 3D they can't be lumped together
 - Multiple, related shared repositories?
 - No to multiple repos: well defined content types
 - Morphosource as a starting point shared repository
 - How would morphosource need to expand?
 - Think about long-term sustainability
 - Where does IIIF fit in
 - How do get consortium in place to support morphosource
 - Morphsource not set up for scenes; would need a different one
 - Repos need to integrate scenes and modalities
 - Sketchfab is greate, but not ours

Common Platforms / viewer tools development

- JW- IIIF broadest common denominator feature set, how many modalities will it cover

DD- Potree for pointclouds, openheritage <http://potree.org/potree/examples/viewer.html>

JB- IIIF allows you to view the content in your own context, standalone version of Voyager exists

- IIIF is trying to incorporate 3D into the api
- It wants to develop common api so that multiple viewers can use it
- How common of a viewer do we want a viewers, how broad
- Ucla has been working potry: lowe

NB:

ISO/IEC X3D [web3d.org] ... X3DOM and X_ITE (in browser rendering engines) plus dozens of others for desktops, CAVEs, etc;

- X3D4, was just approved internationally as a true ISO/IEC International Standard

<https://www.web3d.org/x3d4-highlights> ... (not a 5-year PAS like gltf)