3D Data Management and Sharing and
Indigenous Cultural Heritage in Museums:
Guidelines for RiddoDuottarMuseat

These guidelines encourage a cautious approach to sharing three-dimensional (3D) data of Sámi and other Indigenous cultural heritage, especially when derived from museum collections. It promotes the use of 3D models according to the missions of Sámi institutions, to safeguard and promote community well-being and culture. Considering the nature of 3D data, these recommendations provide basic protections to avoid misuse and cultural appropriation of Indigenous knowledge.

What is a 3D Model?
3D models are digital representations of objects made using a number of techniques, ranging from laser scanning to photogrammetry (3D models derived from photographs). While their properties vary according to the methods used to produce them, 3D models allow a viewer to closely inspect, analyze, download, modify, and even 3D print objects housed in museum collections.

How can 3D Models be Used in Indigenous Museum Contexts?
Thoughtfully approached, 3D Models have great potential in domains ranging from museum exhibition to education and repatriation.

Presentation: 3D models allow the viewing of objects that are too delicate to display, or are held in other museum collections abroad. Using traditional screens, touch screens, or even holographic projectors, 3D models can be animated and dynamically engaged by museum visitors.

Education: Cultural heritage housed in museums is essential to contemporary Indigenous pedagogies. 3D models allow artisans and educators to access museum collections far away or that are too delicate to regularly remove from storage. 3D models allow for the close inspection of engravings, patterns (even down to individual stitches), and materials.

Repatriation: 3D modeling can be used as a tool to initiate conversations with non-Sámi institutions, primarily museums, on the process of repatriation. Through repatriation, Sámi traditional knowledge may be restored to individuals, families, or broader communities.

Sharing and Using 3D Models Online
Despite great potential, the creation and sharing of 3D data necessitates a cautious approach.
Viewing a 3D model means that a user has the ability to carefully observe 3D data-- rotating, zooming in and closely inspecting an object. **Downloading** a 3D model means granting access to an original file, which permits the alteration or manipulation of the 3D data and other features like 3D printing.

Particularly in Indigenous contexts, not all 3D models are appropriate to **view** publicly. As potential examples, patterns of particular families, objects related to Indigenous religion and spirituality, or contemporary pieces of duodji where a contemporary duojár maintains commercial interests and/or intellectual property rights may or may not be desirable to share. Granting access to **download** data should be made only under particular circumstances.

Before sharing a 3D Model for **viewing** in museums:
1) Museum professionals responsible for the digitization of museum collections must carefully evaluate whether or not a 3D model should be shared, either privately or publicly.
2) Regardless of whether or not a model is publicly viewable, **models should generally not be freely downloadable online**.

*Sharing a 3D Model for **Viewing** Privately vs. Publicly*
If a museum decides to share a 3D model privately, it is possible to provide a password-protected link to a user. This will allow them to carefully inspect a 3D model without downloading it.

If you decide to share a 3D model publicly, it may be discoverable on search engines and on the Museum's online profile (e.g., DigitaltMuseum, Sketchfab).

*When to Allow the **Download** of 3D Models or sharing of 3D Files*
3D models can be viewed online in high detail without the need to download.
However, more rarely, having direct access to 3D data will be useful for duojárat, educators, and other scholars. This means that the user will be able to use and manipulate the data.

In cases where a 3D file is distributed, a clear agreement detailing the fair use of the 3D models should be reached between museums and third**.** In these cases, files should be distributed securely and privately, alongside a written agreement which clearly expresses expectations for data storage, management and access.

Basic Safeguards to Consider when Dealing with 3D Data
3D models can be shared using viewers (e.g., Sketchfab) that allow users to see a model, but not download it.

3D models that are not publicly viewable can also be password protected.

When working with third-parties to process the data who will require the original 3D files, it is important to sign a data agreement limiting the reuse of data beyond the project at hand (see again *When to Allow the Download of 3D Models*).

In any cases where 3D models are distributed for download, a clear agreement should be reached on the nature of use of the model, and redistribution should be carefully agreed upon.