

## **Digital Cultural Heritage use case**

The Digital Cultural Heritage use case involved the creation of an online museum with virtual reality environments using 3D assets generated through photogrammetric processes. The first step in the testing process was the creation of 3D assets to be used in the virtual environment of the museum. This involved the application of a photogrammetric process that used manual and unsupervised computer vision techniques to produce 3D models of cultural heritage sites and artifacts. The process could be used for objects of various scales, from individual artifacts to entire buildings or archaeological sites.

The following services were used to generate and present the 3D assets:

- A custom-created document of instructions, including links to online resources, software, and tutorials, for the step-by-step application of photogrammetry.
- The NI4OS service [OMApp](#), which was used for the generation of 3D terrain surfaces from sequences of geotiffs collected by aerial photogrammetric processes, such as drone surveys.
- [OVRET](#), a tool created using the open-source Unity3D platform, was used to create virtual reality museum spaces. OVRET leveraged the VI-SEEM RIVEEL3D workflows to enable interaction with DCH assets in physical space through immersive experiences, offer virtual visits to inaccessible or demolished heritage monuments and historic sites, and create virtual museums and sites with interactive collections of cultural artifacts. The contents of the OVRET document of instructions for the creation of virtual reality museum spaces were available through the provided link.
- The generated datasets were organized according to the FAIR policies and were made available to the public via the [Clowder4DCH](#) service. A view of the OVRET tool through Clowder4DCH was also available.
- Finally, after the completion of the activity by the researchers engaged in the assessment procedure, they were asked to upload the generated data and metadata on the NI4OS-Europe [Simple Data Repository](#) and existing EOSC [B2SHARE](#) and [B2STAGE](#) services.

For further information about the use case please consult with the [NI4OS-Europe training platform](#) as well as the submitted [deliverable 6.4](#).