



## **ViBRANT e-Infrastructure**

### **Work Package 8: Ecological and conservation data mobilisation**

#### **Milestone 8.23: Integration of 3D morphological and anatomical data into Scratchpads**

By: Sarah Faulwetter

Virtual specimens – interactive, three-dimensional representations of their physical counterparts – can be of extreme value for taxonomic and systematic research and might even suffice as a surrogate for the investigation of the physical museum material. The creation of virtual collections will therefore become a high priority for museums and other biological collection managers in the future. Three-dimensional morphological and anatomical data created with techniques such as micro-computed tomography (micro-CT) or Magnetic Resonance Imaging (MRI) can easily be integrated into Scratchpads and organised through virtual galleries. These galleries feature a video preview of the data, allowing the user to quickly assess the information content of the virtual specimen (Figs 1, 2)



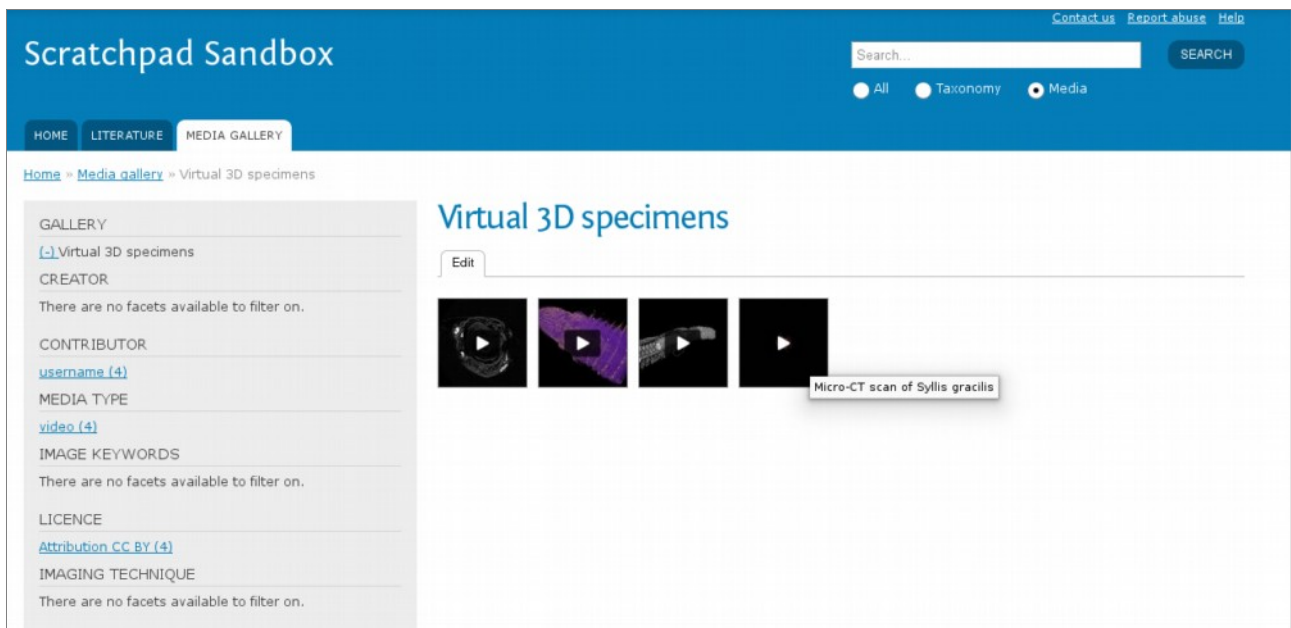


Figure 1: Gallery of three-dimensional virtual specimens.

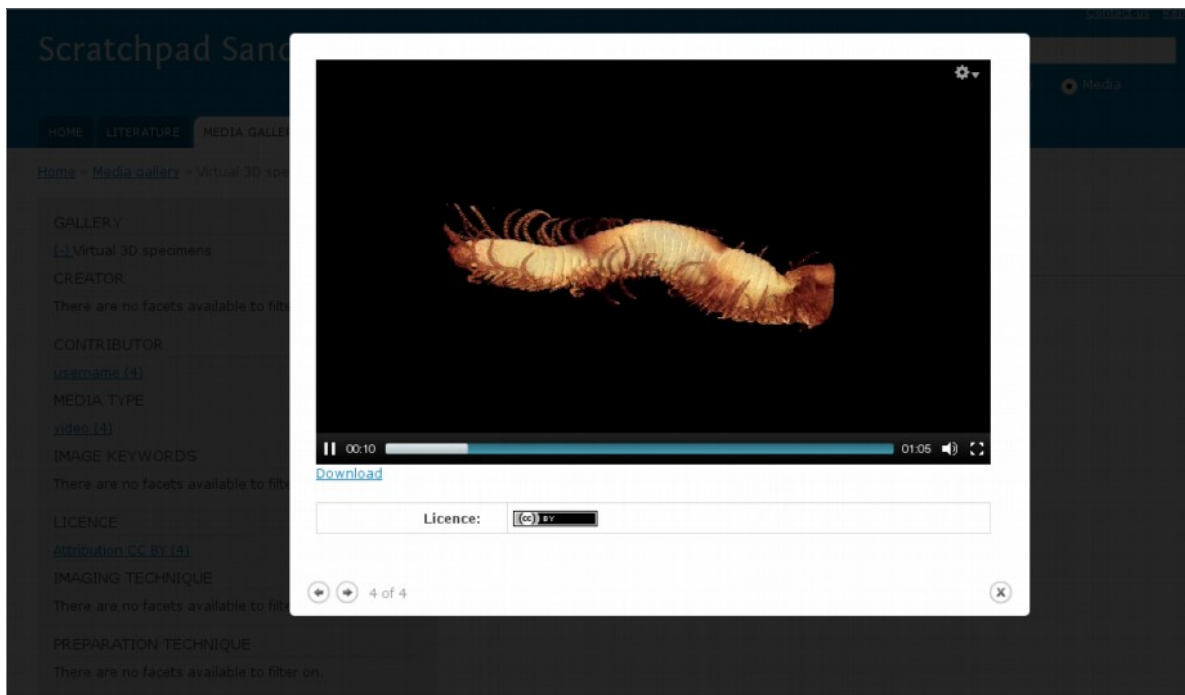
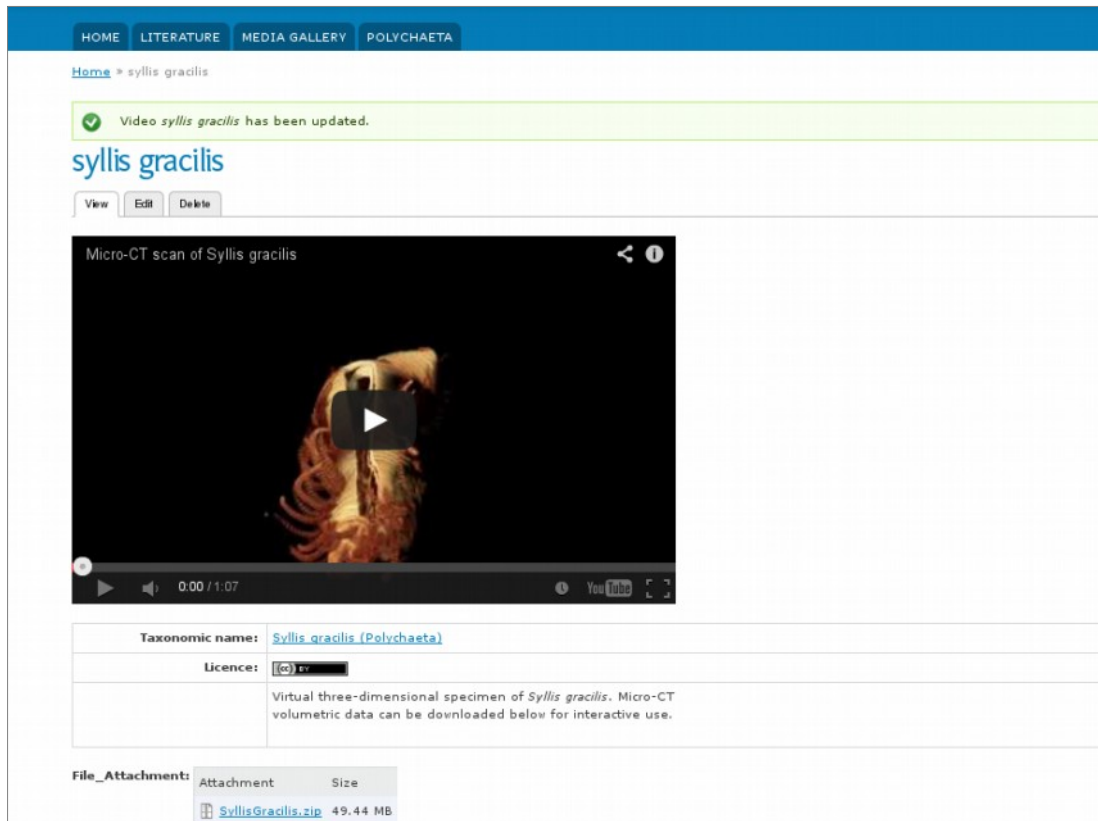



Figure 2: Video preview of a virtual specimen.

The actual virtual specimen is then made available via a download link (Fig. 3). The size of these data often are very large in size, and making the data available for download ensures that the data need not be compressed for viewing which would inevitable result in loss of detail. With the full dataset of the virtual specimen at hand, the researcher can perform any desired analysis and visualization of the specimen and is able to assess all morphological and anatomical characteristics required for the taxonomic work in question.



The screenshot shows a web page for *Syllis gracilis*. At the top, there is a navigation bar with links for HOME, LITERATURE, MEDIA GALLERY, and POLYCHAETA. Below the navigation bar, a breadcrumb trail reads "Home » *Syllis gracilis*". A green notification bar states "Video *Syllis gracilis* has been updated." The main heading is "*Syllis gracilis*" with "View", "Edit", and "Delete" buttons. A video player titled "Micro-CT scan of *Syllis gracilis*" is embedded, showing a 3D reconstruction of the specimen. Below the video player, there is a table with the following information:

Taxonomic name:	<a href="#">Syllis gracilis (Polychaeta)</a>
Licence:	
Virtual three-dimensional specimen of <i>Syllis gracilis</i> . Micro-CT volumetric data can be downloaded below for interactive use.	

Below the table, there is a "File\_Attachment:" section with a table listing the download link and its size:

Attachment	Size
<a href="#">SyllisGracilis.zip</a>	49.44 MB

Figure 3: Video preview including the download link to the high-resolution data of the virtual specimen.