# WebBD5Viewer user's manual

After the user selects the project and file that it wants to visualize the webBD5Viewer application starts downloading the required data from the servers. Based on the data received from the server, the application automatically adapts the interface menu available for the model. Let's take as an example a cell nucleus model that contains track information.

Below is the interface presented to the user:
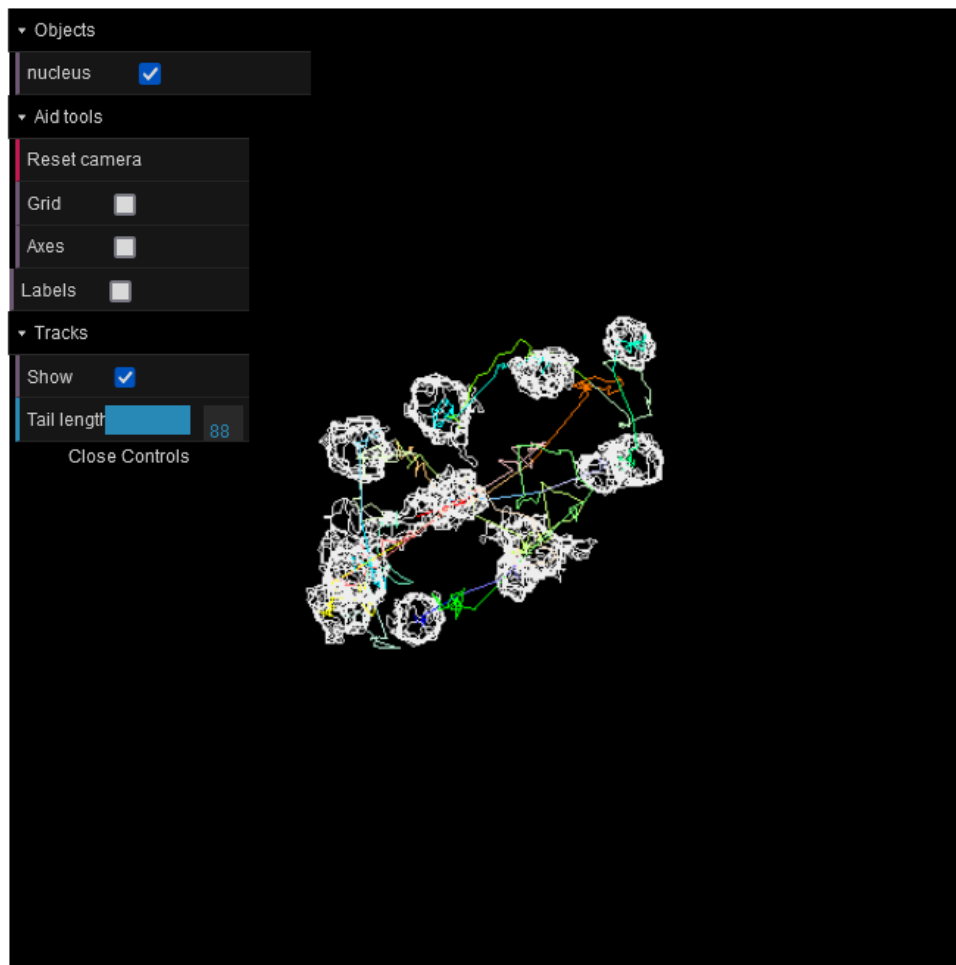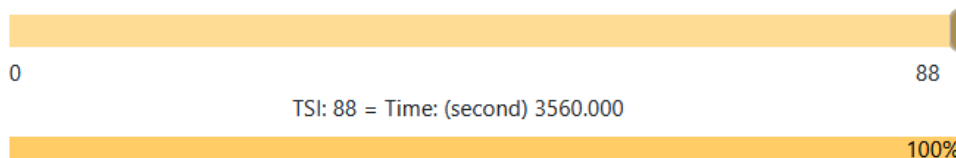
At the bottom we have a download bar that displays the percentage of the data being downloaded. Above this bar, we have a slider controller. This slider lets you select the Time

Series Index (TSI) that represents the time where the model was captured. With the mouse you can move the slider handler to make your TSI selection. Additionally, after selecting the slider with the mouse, you can use the direction keyboard arrows keys to move the slider handler. The left and down arrows will move the handler in the left direction, and the right and up arrows will move the handler in the right direction.

On the upper left corner, we have the visualization menu. This menu is organized into sections. The items with a small triangle on the left side are folders containing other controls. The folders can be opened and closed by clicking the left mouse button above them.

We have the next folders:

▼ Objects   This folder contains a list of objects contained in the model. A checkbox on the right controls if the object is displayed or not. In this example the model contains only one object called "nucleus".

▼ Aid tools   This folder contains functions that help the user's interaction with the model.

   Reset camera: after moving the camera to different positions and angles the user has the option to return to the original position with this button. This function can be applied with the key "r" of the keyboard.

   Grid: is like a net over the plane x-y of the model that helps to measure and notice the proportions of the objects. You can use the key "g" to turn on/off the grid.

   Axes: show the x-y-z coordinate system axis with center at the coordinates (0, 0, 0). Red color axis corresponds to x, green to y and blue to z axis. The key "a" turn on/off the axes.

▼ Tracks   This folder contains two options to manipulate the tracks.

   Show: turn on/off the display of tracks. The key "t" turns on/off the tracks display as well.

   Tail length: define the maximum length size of the tracks. Low values define short track paths very close to the current frame. The default value is defined as the total number of frames, that let display full tracks.

Outside the defined folders appears the "Labels" option. This turns on/off the display of the objects' name definitions. This option is only supported when the BD5 data objects define labels (not all the models define labels). The keyboard key "L" turns on/off the display of labels.

We present a second example showing an additional item in the interaction menu:

Time Series Index (TSI)

0   287

TSI: 287 = Time: (minute) 1435.000

100%

Download complete
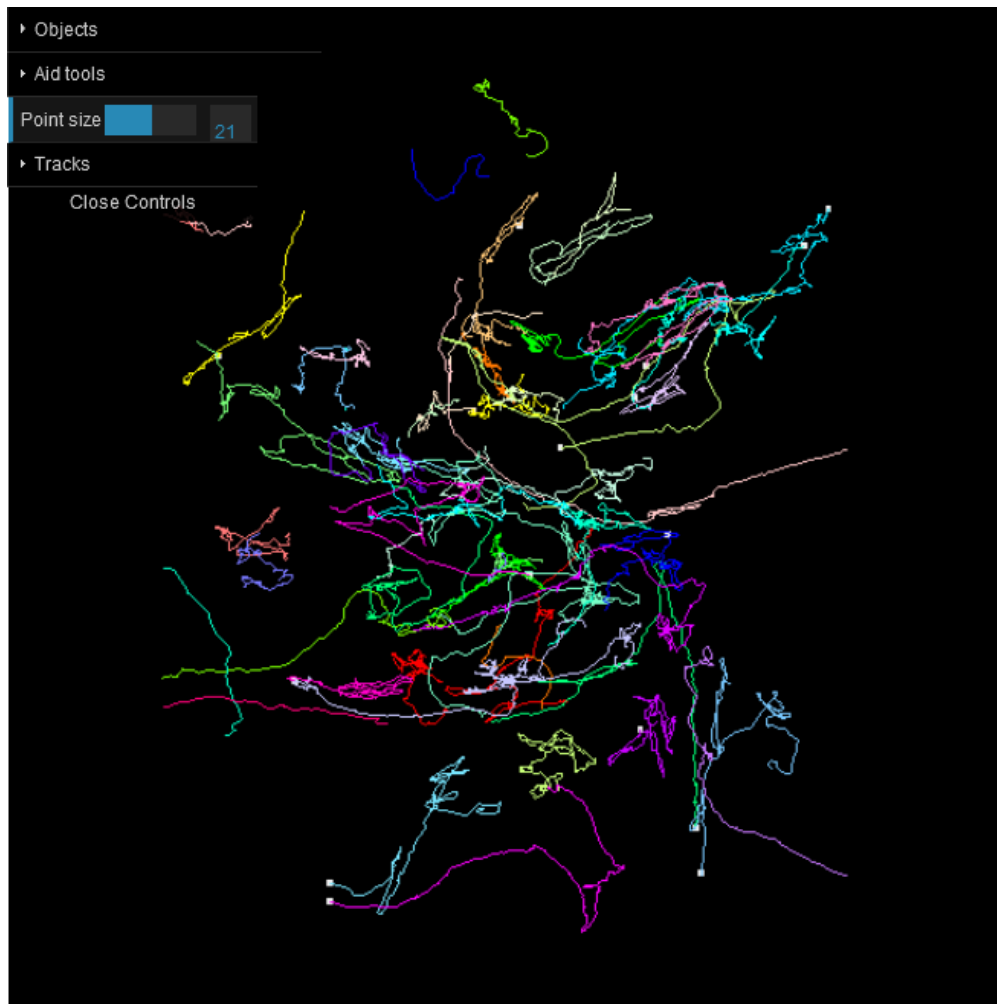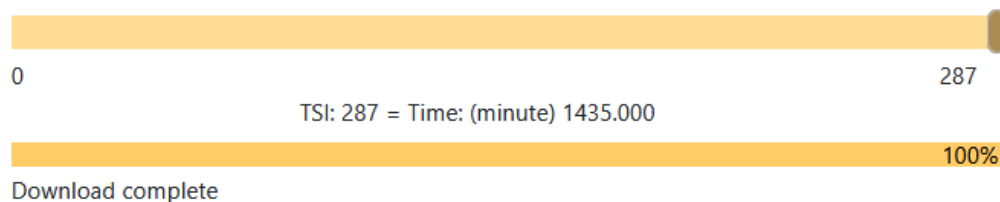
When the geometry of the object is defined as points the interaction menu offers the option of changing the point size.

You can manipulate the camera on the visualization window with the mouse. By pushing the left mouse button, the movement of the mouse will rotate the camera. By moving the mouse wheel, you can zoom in/out the camera to the model. The same functionality can be performed with the keyboard, but you need first to select the visualization widget (the black square that contains the model). By selecting this widget it will capture the keyboard interaction data. By pushing the keys Shift/Left-arrow Shit/Right-arrow will rotate the camera
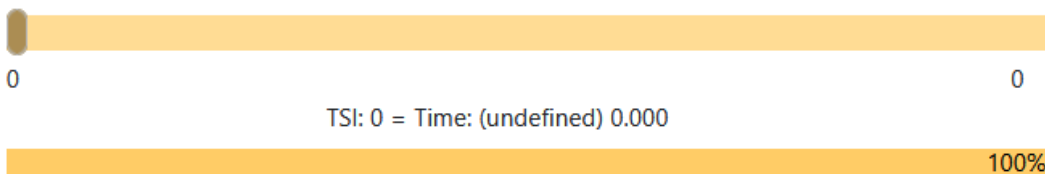
to the left and right. The keys Shift/up-arrow Shift/down-arrow you can rotate the camera to up and down directions. The key "f" (taken for the word far) will zoom out the camera, and the "n" (taken for the word near) will zoom in the camera.

Finally, you can hide the interaction menu with the "h" key from the keyboard.

A third example shows an interaction menu showing several objects in the "Objects" folder:
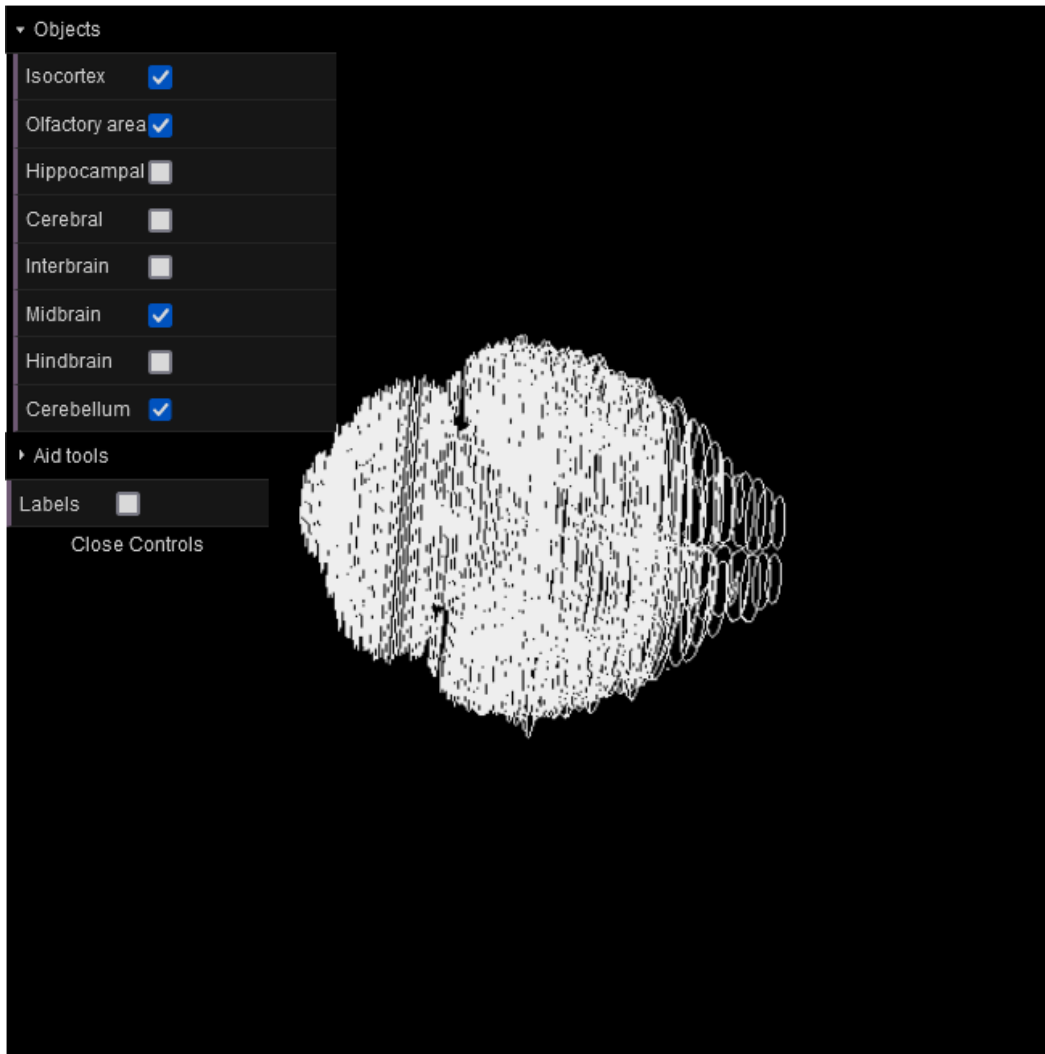
The next table summarizes the keyboard interaction functions:

Key or keys	Function
Shift/left-arrow Shift/right-arrow	Rotate the camera to the left and right (the user must click with the mouse inside the visualization widget to use this functionality)
Shift/up-arrow Shift/down-arrow	Rotate the camera to the up and down (the user must click with the mouse inside the visualization widget to use this functionality)
left-arrow down-arrow	Move the Time Series Index slider handler to the left, if previously you selected the slider with the mouse
right-arrow up-arrow	Move the Time Series Index slider handler to the right, if previously you selected the slider with the mouse
f	Zoom out the camera (f taken from the word far)
n	Zoom in the camera (n taken from the word near)
r	Reset camera to original position and rotation
g	Turn on/off the display of grid
a	Turn on/off the display of x-y-z axis (x: red, y: green, z: blue)
t	Turn on/off the display of tracks
L	Turn on/off the display of labels
h	Hides or shows the interaction menu