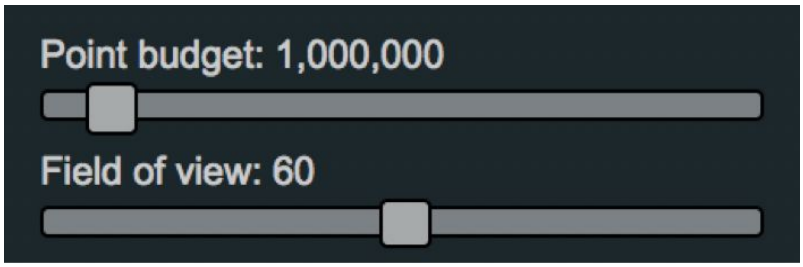
3D Visualization Tool Quick Reference Guide

Menu Items:

Appearance



- **Point Budget**: This slider will set the radius of the rendered points. (Range 100K - 10M)
    - Low point budget improved performance but leads to holes in images; High point budget reduces holes between points but also performance.
- **Field of view**: This slider will determine the viewing area of the camera. (Range 20 - 100)

Eye Dome Lighting (EDL) is a non photorealistic imaging technique that helps to improve the depth perception in visualized images.

- **Enable**: Turn EDL on or off (Note: If view fails to render, disable EDL)
- **EDL - Radius** : This slider determines the spread of the shading applied. (Range 1 - 4).
- **EDL- Strength**: This slider determines the level of shading applied.

(Range 0-5)

Background: Switch between the various backgrounds

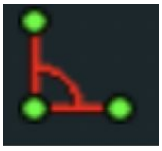
- Skybox: This options enables a sky photo as a background.
- Gradient (Default Background)
- Black
- White

Other:

- **Splat Quality** : Quality options set the shape of each point. (Standard = Square)
- **Box:** Show bounding boxes of visible nodes. (Denoted by yellow lines)
- **Lock View**: Stop all refreshing and loading of points, freeze current load to model.
- **Min Nod Size**: This slider specifies minimum node sizes (in points) to render in the viewer. (Range 0 - 1000)

Tools

Measurement



Angle Measurement
Left Mouse: Insert Measurement Point
Right Mouse: Finish insertion
Drag & Drop: Move Measurement Points
Degrees between measurement points will be displayed on the edge.

Point Measurement
Right Mouse: Insert Measurement Point
Drag: Move Measurement Point
Coordinates of the measurement point will be displayed.

Distance Measurement
Left Mouse: Insert Measurement Point
Right Mouse: Finish insertion
Drag & Drop: Move Measurement Points
Distance between measurement points will be displayed on the edge.

Height Measurement
Left Mouse: Insert Measurement Point
Right Mouse: Finish insertion
Distance between measurement points will be displayed on the edge.

Area Measurement
Left Mouse: Insert Measurement Point
Right Mouse: Finish insertion
Drag & Drop: Move Measurement Points

Distance between measurement points will be displayed on the edge and the total area on the centroid. The area is calculated on the ground plane. The height does not affect the result. Crossings should be avoided.

Volume Measurement
Left Mouse: Insert Volume or Select Inserted Volume
Volume will be displayed on the objects centroid.

Height Profile
Left Mouse: Insert Profile Marker
Right Mouse: Finish insertion
Drag & Drop: Move Profile Marker

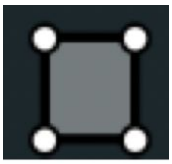
CTRL + Drag & Drop: Drag upwards to increase or downwards to decrease the profile width
Depending on the Clip Mode, points inside the profile will be highlighted or points outside the profile will be clipped.

Click to reset all measurements made with other tools.

Clipping:

Volume Clip
Left Mouse: Insert Volume or Select Inserted Volume
Depending on the Clip Mode, points inside the volume will be highlighted or points outside the volume will be clipped.

Polygon Clip
Left Mouse: Insert Measurement Point
Right Mouse: Finish insertion
Polygon will be displayed.



Draw a Selection Box (Requires you to be in Orthographic Mode)
Left Mouse: Insert Selection Box
Right Mouse: Finish insertion
Drag & Drop: Move the selection box across the map and drag upwards to increase or downwards to decrease the size of the selection box

Depending on the Clip Mode, points inside the profile will be highlighted or points outside the profile will be clipped.

Click to reset all measurements made with other tools.

Clip Task

- Highlight: This option highlights selected clipping.
- Inside: This option shows the inside of the image (e.g. inside of the cave).
- Outside: This option shows the outside of the image (e.g. roof of the cave).
- None: This option shows the whole image (e.g. entire cave)

Clip Method

- Inside Any: This option shows the whole image with clipped area highlighted.
- Inside All: This option shows the clipped area.

Navigation:

Earth Control
Left Mouse: Rotate camera around pivot.
Right Mouse: Pan camera & pivot

Fly Control
ASDW or Arrow Keys and R to change field of view: Move through scene
Left Mouse: Rotate camera

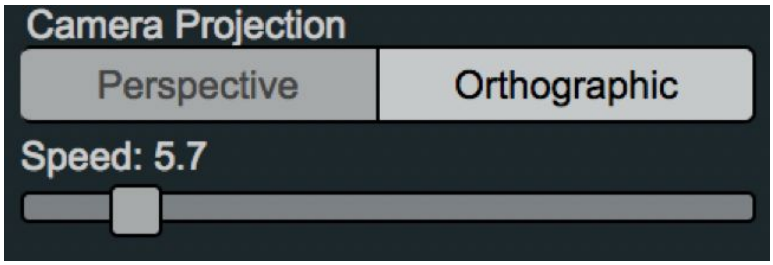
Helicopter Control
ASDW or Arrow Keys and R to change field of view: Move through scene
Left Mouse: Rotate camera

Orbit Control
Left Mouse: Rotate camera around pivot.
Right Mouse: Pan camera & pivot.

Full Extent
Moves camera so that the whole point cloud is within the view area.

Navigation Cube
Moves camera based on the side of the cube you want to view.

- Front
- Back
- Top
- Bottom
- Left
- Right



Camera Projection

- **Perspective**: shows real world view with depth
- **Orthographic**: shows image without perspective distortion (objects are flat, no depth)

Speed: This slider represents the speed of the navigation.

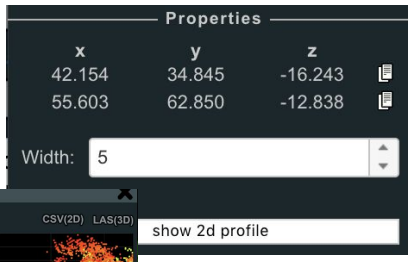
Scene

Export:
JSON - Exports map as a JavaScript Object Notation (JSON) file.
DXF - Exports map as a Drawing Interchange Format (DXF) file.

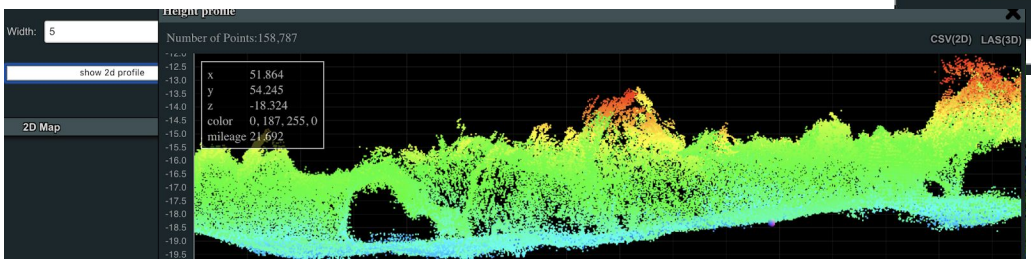
Objects: (uncheck the boxes to hide the objects)
Point Clouds - shows the map being visualized
Measurements - shows the measurements on the map
Annotations - shows the annotations on the map
Other - shows the camera folder

Properties: shows the **x**, **y**, **z** and **α**, **β**, **Y** values of measurements

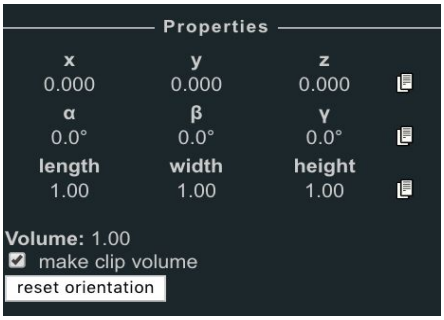
Height Profile: The images below show what is displayed when this option is chosen.



- Ability to change the width of the height profile
- Ability to see a 2D profile of the height



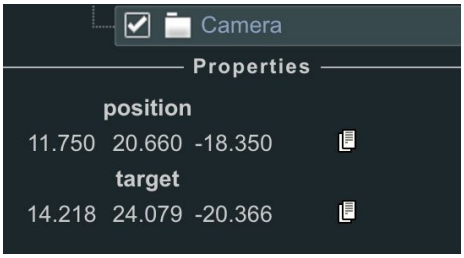
Volume Clipping:



- Ability to see the volume of the clipping
- Ability to view the map as a clipping or standard volume measurement
- Reset Orientation: This button resets the clipping orientation back to center

Camera:

Displays the coordinates of the annotation:



- Position: camera position
- Target: position of the actual annotation

Menu Toggle

This menu toggle will collapse and open the sidebar panel.