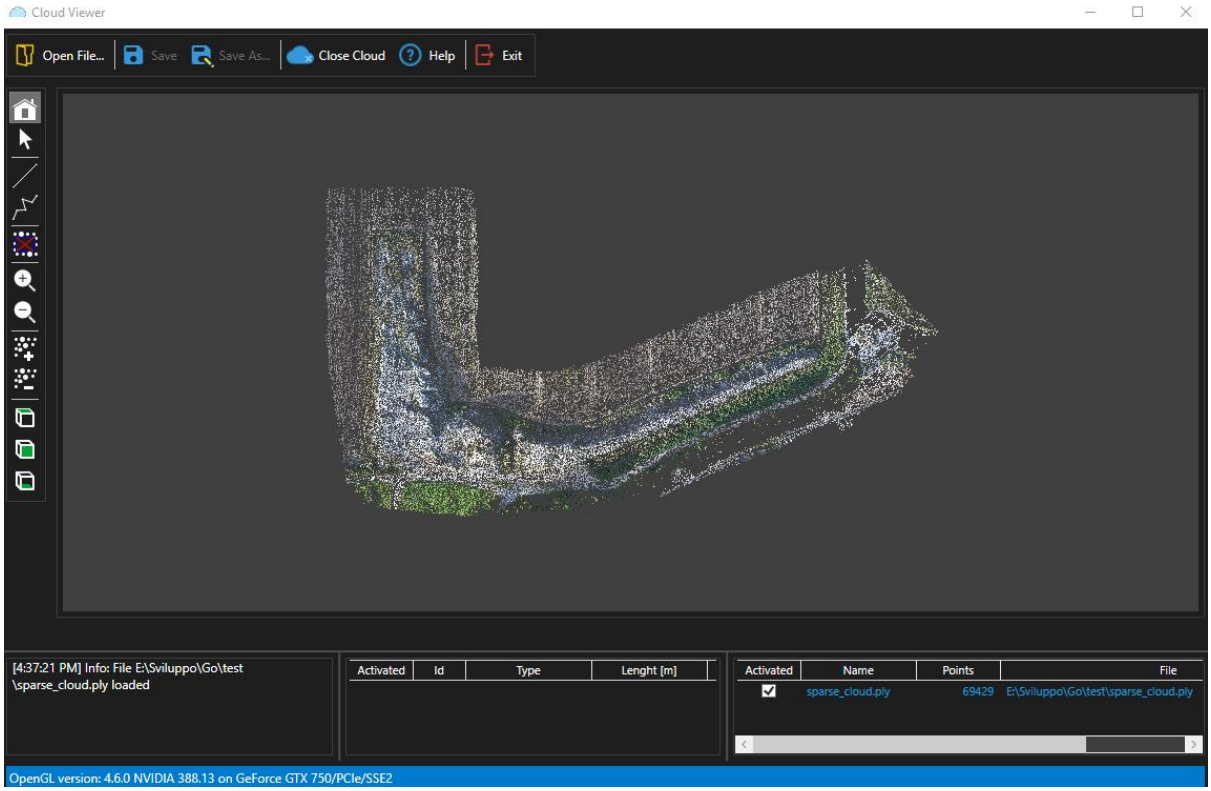
Cloud Viewer

Cloud Viewer is a program to view and manage 3D point clouds. The file format of the 3D point clouds shown in the viewer is ".ply" (Polygon File Format).



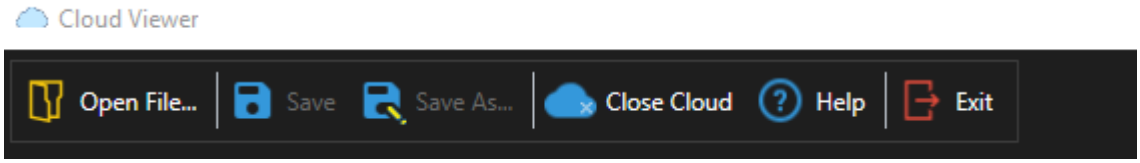
System Requirements

- Microsoft .Net Framework 4.5
- the program uses OpenGL libraries with version 4.5 or more recent and so the graphic card should support this OpenGL version.

Functionalities

The program is composed by a central viewer for point cloud, functional buttons in left and upper sides, and by log space where the program logs the executed operations.

General Functions



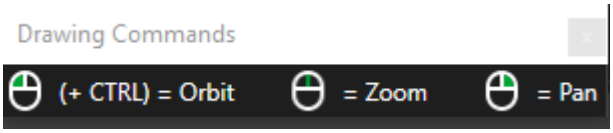
With the button Open File… you can load a 3D point cloud with the".ply" file format. The other commands are self explanatory.

Special Functions

These functions can manage point clouds.

Home: stato iniziale di visualizzazione della nuvola

Arrow: click on arrow button shows the following dialog:



Draw line: it creates a line using point cloud points under the mouse cursor.

Draw Polyline: it creates a polyline as a sequence of linear segments

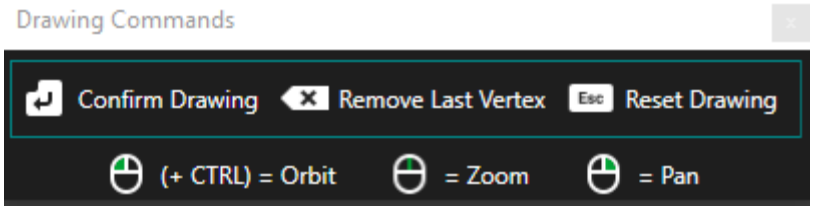
Delete point cloud Area: it allows to delete an area selected from the point cloud

Zoom +/-: it changes the size of the shown point cloud

Size of the shown points: you can zoom in/zoom out the point representation

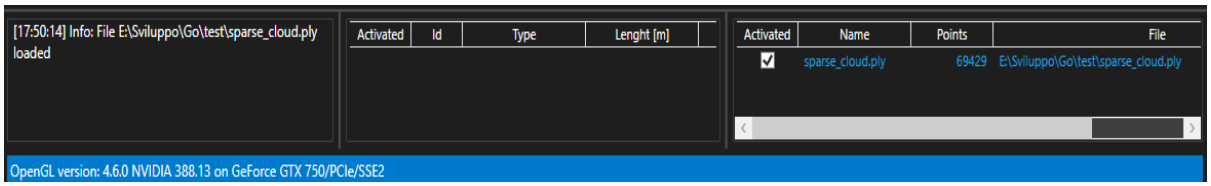
Points of view: you can select different point of view, i.e. a top view, a bottom view and a front view.

Operations: line or polyline creation



By clicking on the buttons Draw line or Draw Polyline the program creates a context menu where you can find some commands used to draw as Confirm Drawing, Remove Last Vertex, Reset Drawing. You can note that an entity can be deleted by selecting it in the list of created entities, in log space.

Log Data

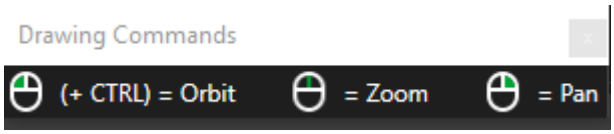


It's the space where the program logs the executed operations. The space is divided in three sections:

- At left you can find the created entity with the detail of vertices
- At center you have the entity list. By selecting an entity, click on right mouse button you see the possibility to delete the selected entity.
- At right you can see the loaded point cloud with its number of points.

Mouse commands

By clicking on the button arrow the program shows the following bar where you find the map of the mouse buttons with commands.



Left button: rotate the point cloud

Right button: pan operation

Central button: by rotating the roller button you can modify the zoom level. By clicking on the roller button and dragging the mouse you can select an area.

Work Flows

In the following some possible workflows:

1. In order to focus the point cloud management only on the relevant points, you can delete all points of no interest. So you can select areas on the point cloud and with the command Delete Points you delete them obtaining a lighter point cloud.
2. Another exemple of Cloud Viewer usage is the possibility to create entities on the point cloud as well as on the dwg with the current design. In detail when you create a polyline on the point cloud you have drawn 2 polylines in the current dwg, a 2D and a 3D polylines overlapped. The 2D polyline can be used to create an alignment of CIVIL Design with the command *trselpoly*. With this alignment you can define planimetric sections with the command *cdplsez*. The planimetric section will be drawn in the dwg and in the cloud viewer. Now with the command *calcsez* you can extract sections with planimetric sections and from the point cloud.