



Technical Note (MDTPointCloud_en_v1_ext01_Pix4D)

Exploitation of Results from Pix4D with MDT Point Cloud

Update

11/11/2015

Requirements

MDT Versions: 7.0 onwards

MDT Point Cloud Versions: 1.4 onwards

CAD Versions: All supported

Operating System: Windows XP / 7 / 8 / 10

It also requires having installed version 7.0.36 or higher of Grid, you can check in *MDT7 > About TcpMDT*, and an update of the grid format conversions.

Objective

This document describes how to exploit the results generated by the Pix4D Mapper Pro version 2.0 application using MDT Point Cloud.

In all cases we assume that you have successfully entered the data of control points and conducted local processing of images with no errors in its three phases: initial, densification and generation of DSM and orthomosaic.



Details

Point Cloud

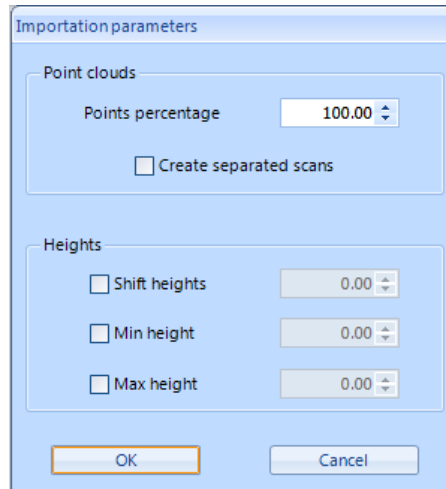
In MDT Point Cloud, create a new project, enable the ribbon of options *Point Cloud* and run the *Import > Import option*. Select the file type as LiDAR file (*.las) and select the following file:

```
<project>
  2_densification
    point_cloud
      <project>_densified_point_cloud.las
```

where <project> is the project name. For instance:

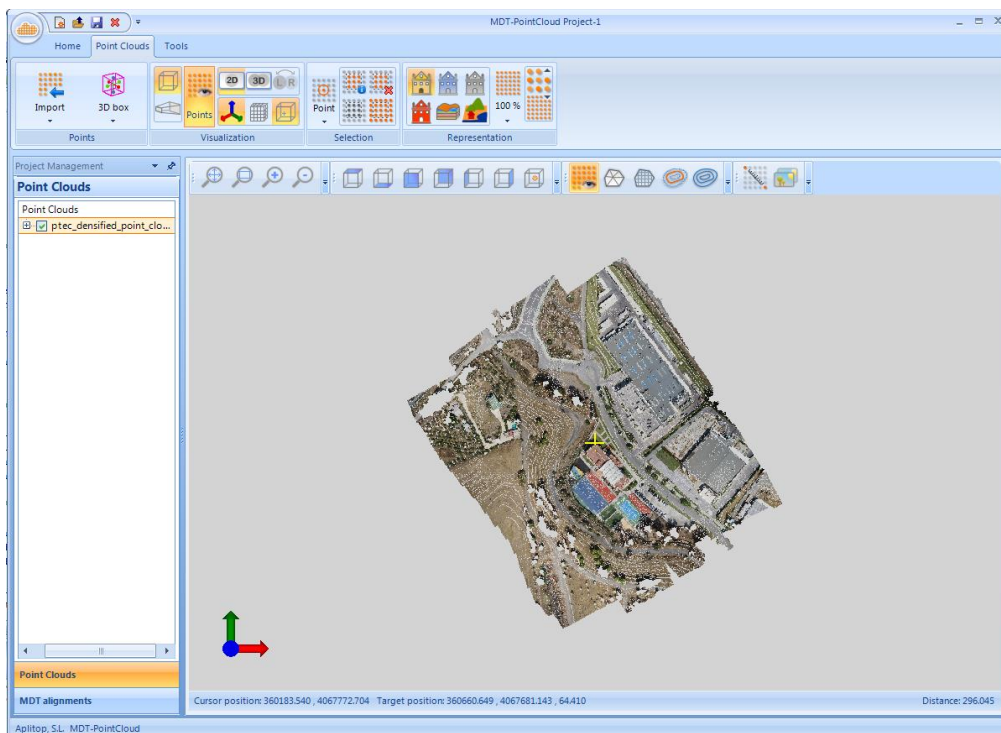
demo\2_densification\point_cloud\demo_densified_point_cloud.las

Accept the default import settings and click **OK** to run the import.



MDT Point Cloud import settings

Change the point of view to the desired, and increase the points size if necessary.



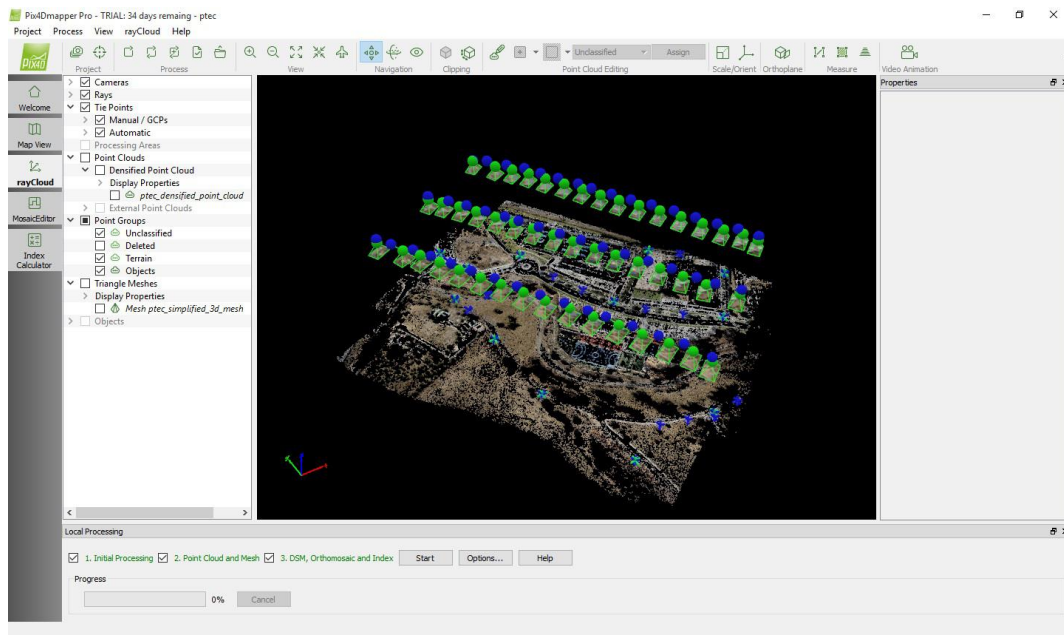
Representation of imported points with natural color

Classification of points

In Pix4D is necessary to have previously generated the following procedure:

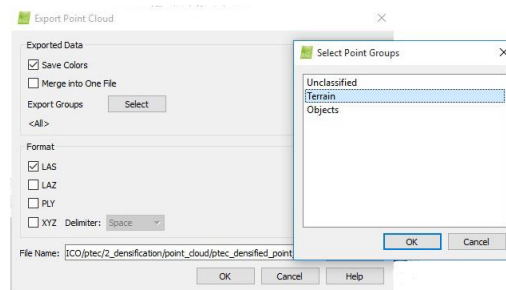
1. Run *Process > RunTerrain/Object Point Cloud (beta)*

2. In the tab *rayCloud*, open the element *Point Clouds*> *Densified Point Cloud* and choose the Cloud. Press the right button and run *Export Point Cloud*



Export point cloud densified

3. Press the *Select* button, and choose only the group *Terrain*.



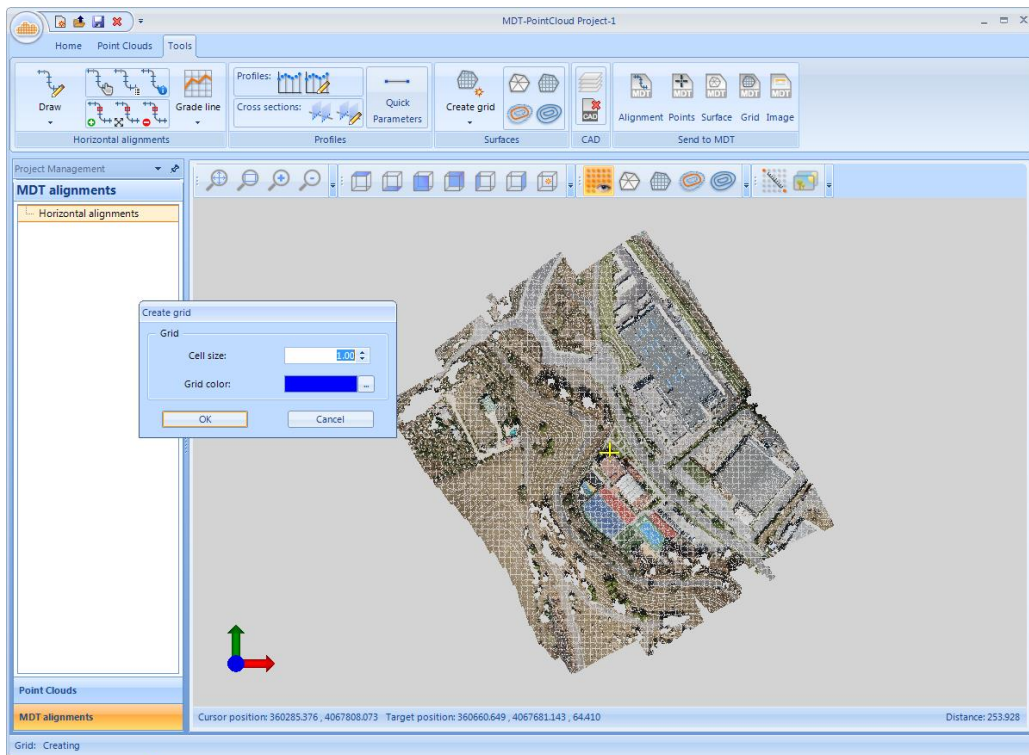
Export Options

4. Press *Browse* button, and set the file name to create, for example `terrain.las`

Grid generation and quick profile

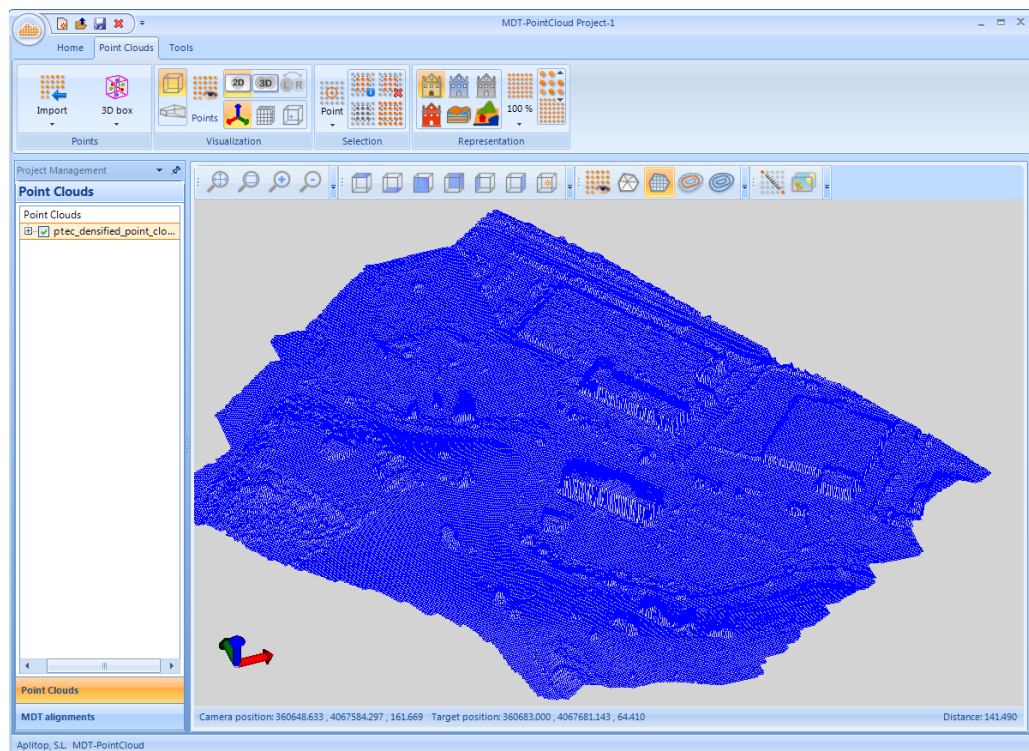
In MDT Point Cloud follow this procedure:

1. In MDT Point Cloud, click on the ribbon *Point Clouds* and run the *Import*> *Import* option. Select the file type LiDAR file (*.las) and select the file created, proceed as explained in the previous section.



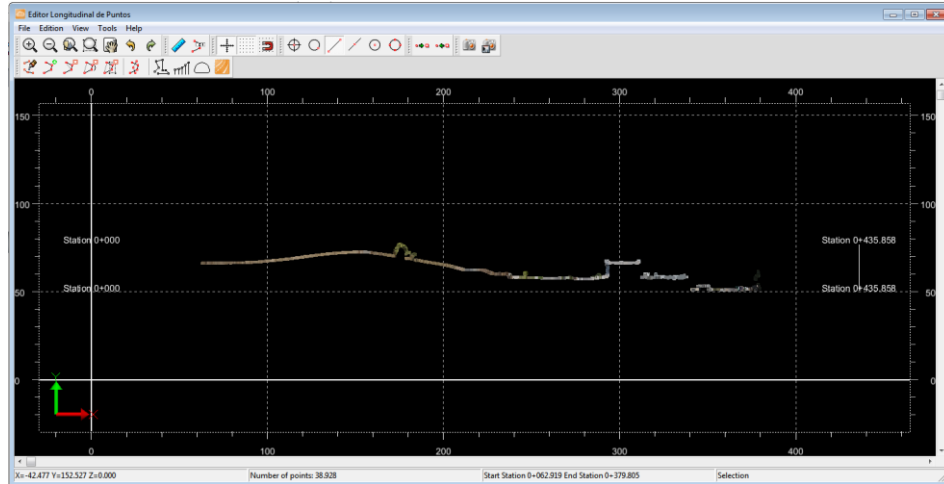
Create grid from terrain points

2. Click on the ribbon **Tools** and run the **Create grid** option within **Surfaces** group. Set the cell size and color of the grid and press OK.



Grid Visualization

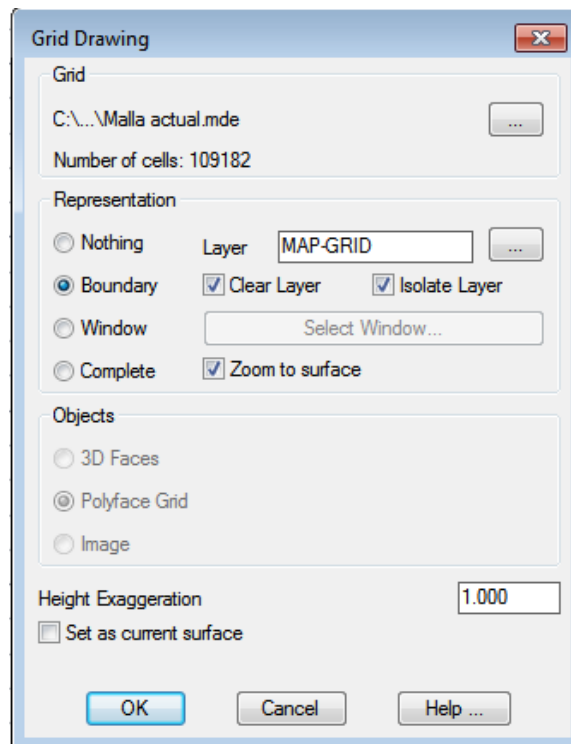
- To check the model definition, establish the plan view and click the **Quick** button in the **Profiles** group. Draw the start and end points of the line profile. In the profile editor, press button **Create Longitudinal**.



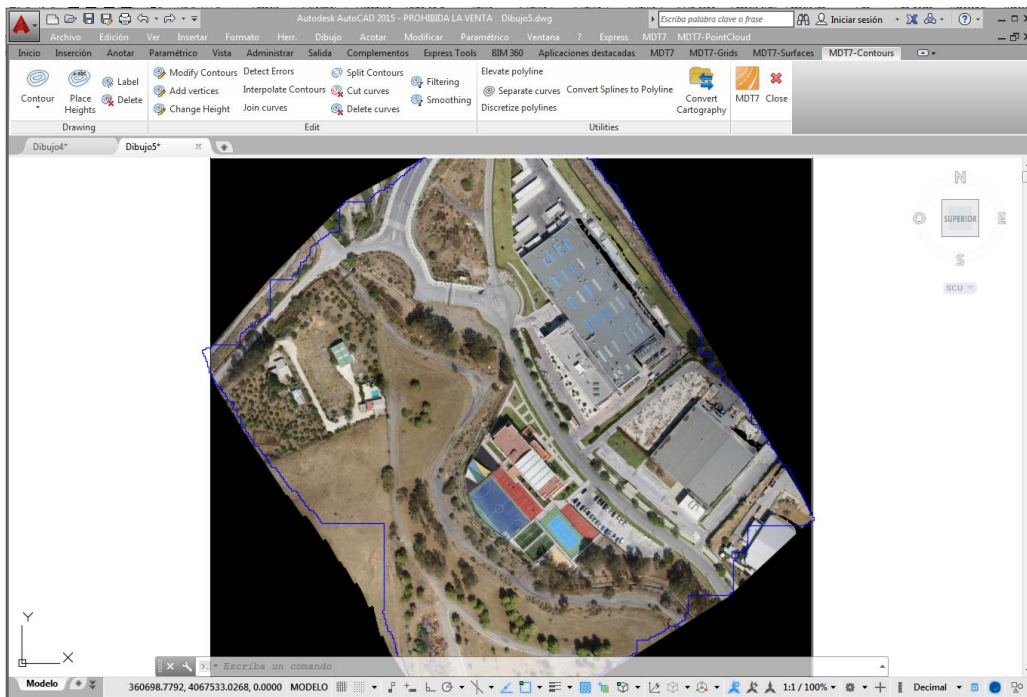
Quick Profile in MDT Point Cloud

MDT data exploitation

- Finally send the grid to MDT. To do this press button **Grid** in **Send to MDT** group.



Draw Grid in MDT



Boundary line of the grid drawn on the orthophoto

From this moment you can use this grid as a surface for a large number of MDT commands: obtaining profiles, volume calculation, etc.

Other data

In addition to the cloud of points and digital terrain model, other products generated by Pix4D can be processed by APLITOP applications.

Ortophotos and contour lines

They can be imported directly by MDT. See corresponding technical note.

Oriented photos

The distortion-free images with the coordinates and orientation of the cameras can also be managed by TcpStereo, so you can view stereoscopic models and make restitution on CAD.

References

[Video](#)

[MDT: technical note about the exploitation of results from Pix4D](#)

[TcpStereo: product page](#)