HT2 - Create a Digital Terrain Model from a T-Lidar point cloud

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This tutorial uses the following script in the **Computree HowTo** subfolder: *HT2_Create_DTM.xsct2*

Objectives

This tutorial shows how to :

1. *Open a point cloud*
2. Add the DTM creation step
3. Configure the tool parameters
4. *Export the model in a raster format*

Open a ploint cloud

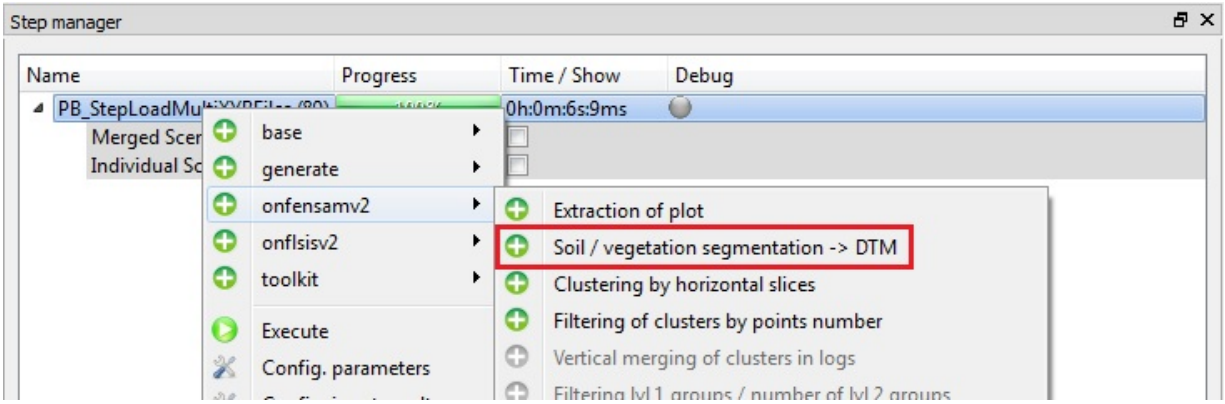
Please refer to tutorial HT1 - Load, visualize, crop and export a T-Lidar point cloud.

Add the DTM creation step

The *OE_StepExtractSoil03* step is found in the **onfensamv2** plugin. This step distinguishes ground points from vegetation points and generates:

- a Digital Terrain Model (DTM)
- a Digital Surface Model (DSM)
- a Digital Height Model (DHM)

To add a step, right click on the previous one and then select the tool. Select the **onfensamv2** plugin, and then the **Soil / vegetation segmentation → DTM** step.



Tool parameters configuration

Tool steps and parameters:

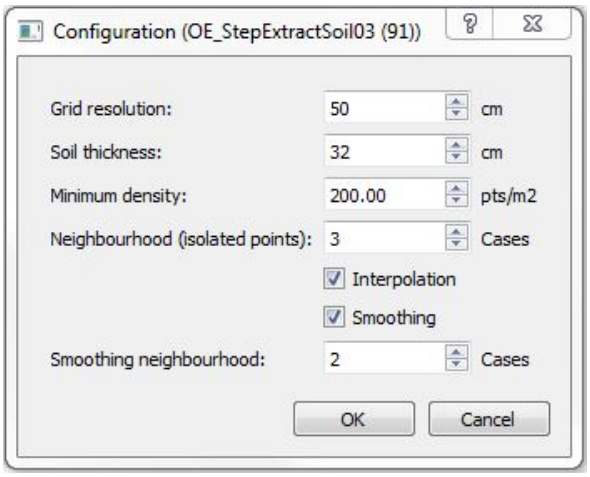
- A Zmin grid is created at the specified **Grid resolution**. The resolution must be in centimeters. The same resolution will be used for the output models.

A 50 cm resolution is suitable for a moderate slope plot. For a steeper slope, a finer resolution is recommended.

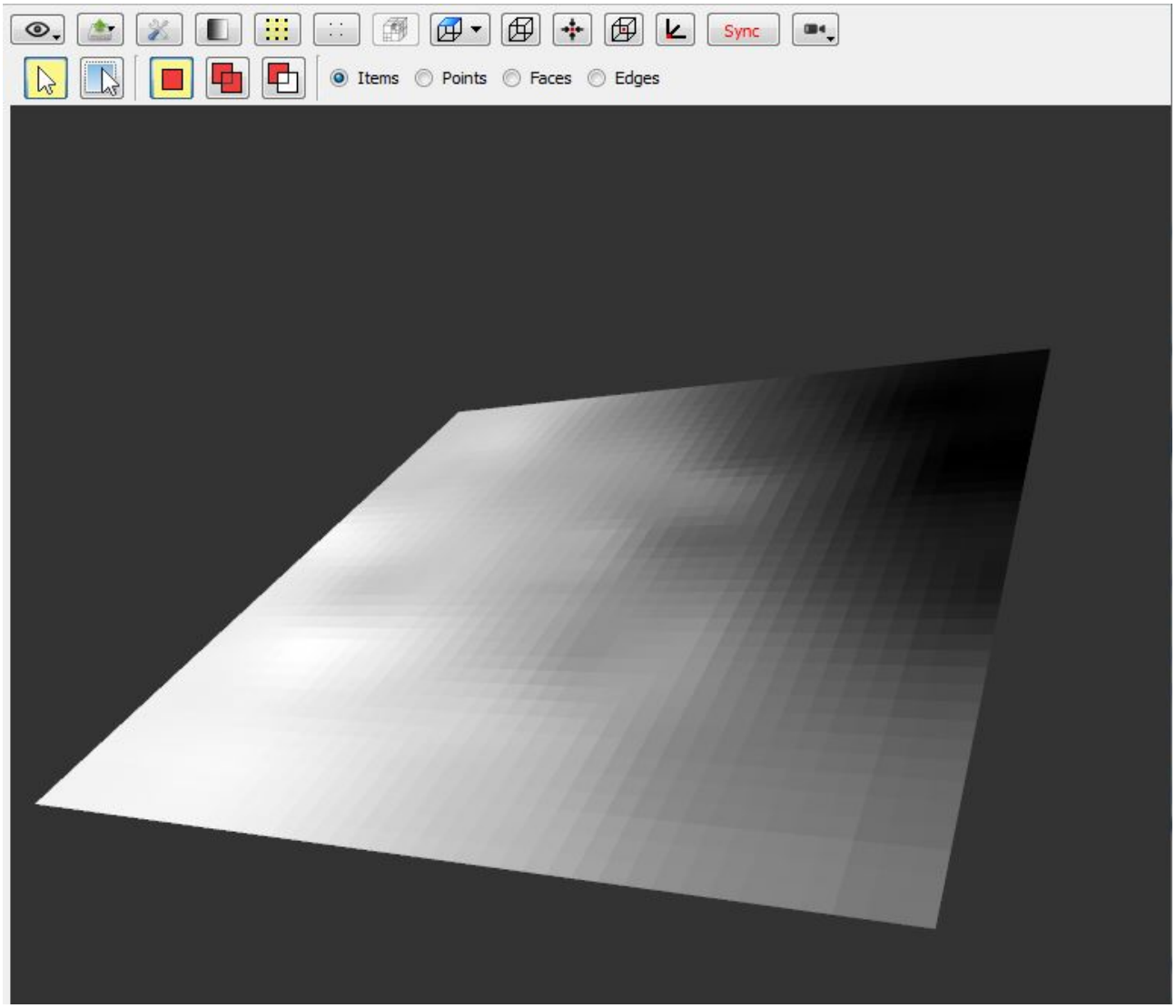
- Point density is calculated for points located between Zmin and “Zmin + **Soil thickness**”.

The Soil thickness parameter depends on the grid resolution. The larger the pixels are, the greater the parameter value must be, so that all ground points are included.

- NULL value is given to the grid's pixels that have a point density smaller than the **Minimum density**.
- If the **Interpolation** box is checked, NULL values ares replaced by the average of natural neighbors.
- If the **Smoothing** box is checked, each cell is transformed according to the K-Nearest Neighbor (k-NN) method. K (**Neighborhood** in number of pixels) must be specified.



Here is an exemple of a Digital terrain Model (DTM):



Export the model in a raster format

Please refer to tutorial HT1 - Load, visualize, crop and export a T-Lidar point cloud.

The **Grilles 2D, ASCII ESRI Grid** format is recommended.

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Files

OE_StepExtractSoil03_EN.jpg	54.9 KB	12/01/2014	Delugre Audrey
config_OE_StepExtractSoil03_EN.JPG	25.8 KB	12/01/2014	Delugre Audrey
step_model_manager_EN.JPG	50.8 KB	12/01/2014	Delugre Audrey
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export.JPG	7.98 KB	12/01/2014	Delugre Audrey
MNT.JPG	39.5 KB	12/01/2014	Delugre Audrey
format_export_FR.jpg	49.4 KB	12/01/2014	Delugre Audrey