PointCab TUTORIALS

PANORAMA VIEWS

The Panorama tool can be used to open the planar views created by terrestrial laser scanners during scanning. It can also be used to create virtual panoramas from a point cloud created during scanning with a mobile mapping system.

1. Opening planar views in a terrestrial laser scanning project



Select the Panorama tool and click on a scan position in one of the standard views.

Options - the main menu

When you open a panorama view in PointCab for the first time, you will see a menu on the lefthand side that helps you to view the image in different modes:



With the eye symbol you can hide the other scan positions (or simply press "P" on your keyboard).

By pressing the second icon in the menu, you can display the panoramic view as a 360-degree image in which you can navigate.

By default, the planar views are displayed directly in the reflectivity view, but you have other viewing options to choose from:



You only need to open the sheets icon and select the mode in which you want to visualise the planar view:

Reflectivity



Colour



Distance

From the position of the scanner to all points in the planar view. Displayed in a coloured scale



Validity

All white areas are valid points. The black areas are areas where the scanner has not detected any points for various reasons (e.g. distance to objects is too large for the scanner, hidden objects etc.).



Normals

You can view a map of the normals to check how many layers there areand how they are distributed.



Enhanced Reflectivity

Pointcab sets a filter with a histogram equaliser to show enhanced contrast



Super Colour

The under- and overexposed areas in colour panoramas are restored with the help of reflectivity. PointCab does this with the help of inpainting.



Super Pixel

The plane representation of the point cloud. This means that all points that belong to the same plane get the same colour.



2. Virtual panoramas

In diesem Video-Tutorial zeigen wir Ihnen, wie Sie aus einer ungeordneten Punktwolke eine In this video tutorial we show you how to create a panorama view from an unstructured point cloud in which you can measure. If the point density is high, the results may have a very good quality, comparable to terrestrial laser scanning projects.



3. Examples, tricks and tips for your mobile mapping projects

Get images captured with a Zeb Pano into your GeoSLAM project

Zeb Pano is an accessory for the GeoSLAM laser scanners and uses the SLAM algorithm to position panoramic images on a floor plan for an interactive viewing experience. To achieve the best results, the manufacturer recommends that you stop whenever you have captured an image (this takes no more than a few seconds).

Instructions for processing Zeb Pano images can be found on the GeoSLAM website: https://geoslam.com/academy/hardware/zeb-pano/

Importing Zeb Pano images into GeoSLAM Draw is automated through GeoSLAM Hub, but in Point-Cab this process is slightly different. We will describe this workflow in the following tutorial.

After the GeoSLAM point cloud has been successfully imported into PointCab, go to File -> Import Elements.

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A new dialogue window opens in which you can select the tab "Import GeoSLAM". Here you can navigate to the location of your XML file, select it and press "Import".

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The panorama views appear as small circles in your project and as jobs in the job list that need to be calculated. After PointCab has processed the images, you can open them as usual by selecting the Panorama tool and clicking on the scan point in the standard views. Here is an example:



A new dialogue window opens in which you can select the tab "Import GeoSLAM". Here you can navigate to the location of your XML file, select it and press "Import".

TIMMS datasets with Ladybug images

The Trimble Indoor Mobile Mapping System is equipped with a Ladybug camera that takes panoramic photos while the user scans the environment.

These images can be imported into PointCab at the correct position where they were taken. Below you will find the workflow.

After the TIMMS point cloud has been successfully imported into PointCab, go to File -> Import Elements.

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A new dialogue window opens in which you can select the tab "Import TIMMS". Select the trajectory file of the Ladybug camera and the folder where all panorama views are saved. Make sure that the option "Copy images to project" is activated.

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Now press "Import".

The panorama views appear as small circles in your project and as jobs in the job list that need to be calculated. After PointCab has processed the images, you can open them as usual by selecting the Panorama tool and clicking on the scan point in the standard views. Here is an example:



As there is always the point cloud in the background of the Ladybug images, you can use these images to extract specific points with 3D information. You can also use them in combination with one of the PointCab plugins in your scan-to-BIM workflow. Learn more <u>here</u>

Virtual panoramas from NavVis point clouds

The high density of point clouds captured with NavVis laser scanners (both M6 and VLX) enables the creation of high quality virtual panoramas in PointCab.

After importing the NavVis point cloud into PointCab, select the Panorama tool and then click on the plan view at the position where you want to create the virtual panorama. Adjust the position of the



image in the standard vertical views by moving the circle up:

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The job for calculating the panorama view can be seen in the job list. You can adjust the rendering parameters in the job editor. You can choose how many pixels per row or column or what point size the virtual panorama should have and select any background.

Below is an example of the result after calculating the virtual panoramas. You can use these images to extract specific points with 3D information or in combination with one of the Point-Cab plugins in your scan-to-BIM workflow. Learn more <u>here</u>

