

GeoSLAM Hub 5.3

User Manual

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1. Software Installation and Licensing

This section of the guide describes how to install and use GeoSLAM Hub & GeoSLAM Draw, the desktop application for processing scan data captured from GeoSLAM Horizon, Revo and Revo Realtime (RT) hand held mobile laser scanners.

The software kit comprises of:

- 1 x Kingston USB memory stick, containing;
 - GeoSLAM Hub Installation file - GeoSLAM-Hub-bundle-5.3.exe
 - Test data
 - User guide
 - Quick start guide
 - Operation video demonstration
 - Warranty, including activation certificate

1.1 System Requirements

Minimum

- Windows 10
- i7 6th Generation
- AMD Ryzen 7 (1700X)
- Integrated Graphics
- 16GB RAM
- 30GB free space
- SSD

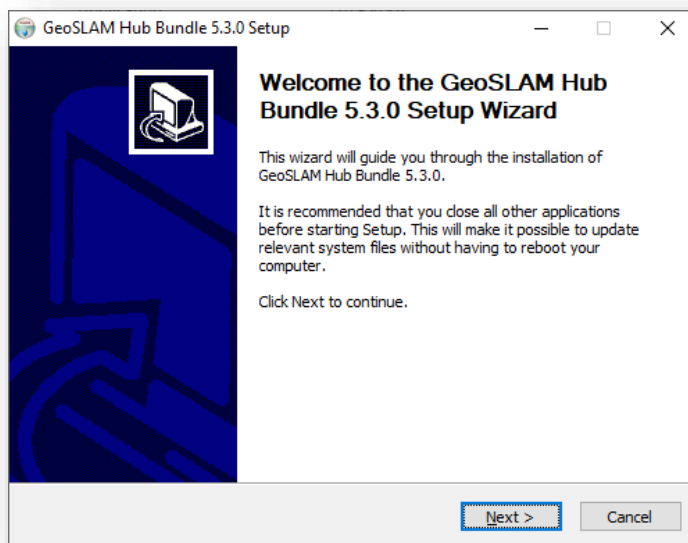
Recommended

- Windows 10
- i7, i9 8th Generation or greater (higher clock speed)
- AMD Ryzen 7 (2700X)
- NVIDIA GTX 1060
- 32GB RAM
- 30GB free space
- SSD

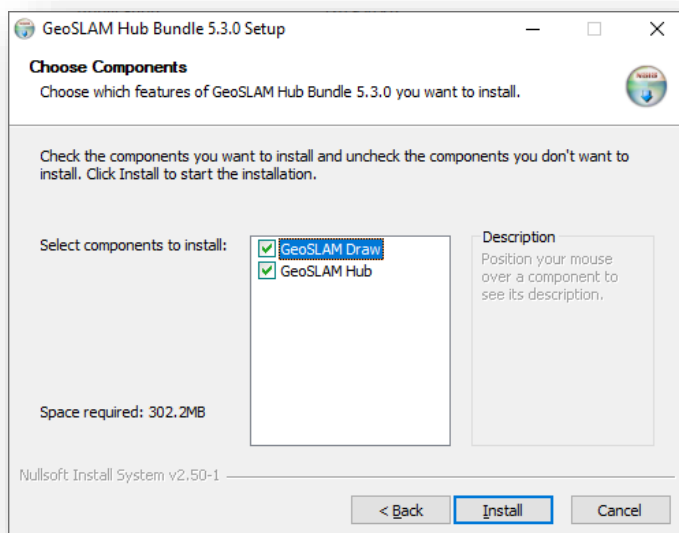
1.2 Installation

This chapter describes the installation for new users performing a “fresh” install. Existing users updating from an older version of GeoSLAM Hub should follow the instruction guide provided with the update.

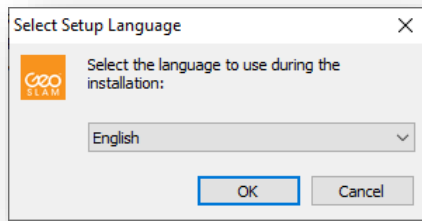
1. Run the install file located on your Kingston USB received with the scanner. Alternatively download the latest GeoSLAM Hub installer from <https://geoslam.com/support/>
2. Click Yes on the User Account Controls popup.
3. Click Next



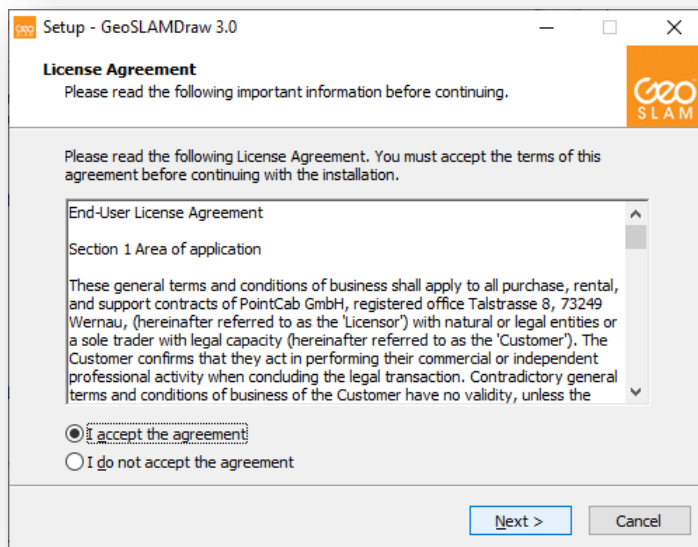
4. Make sure both GeoSLAM Draw and GeoSLAM Hub are checked. Click Install



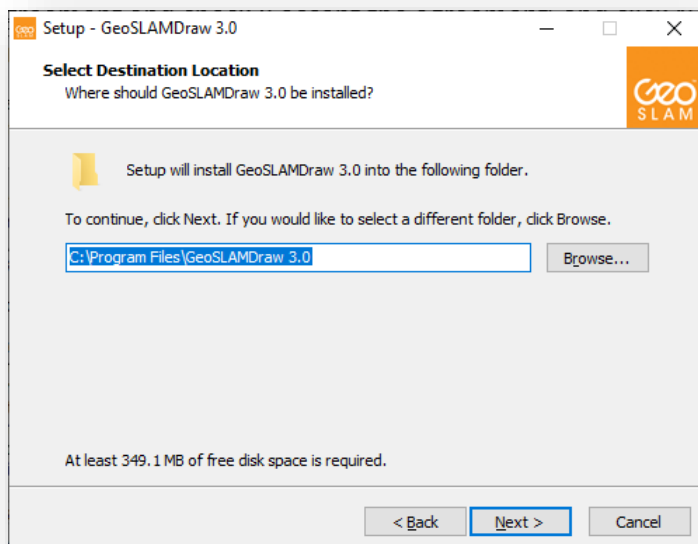
Click OK at Setup language



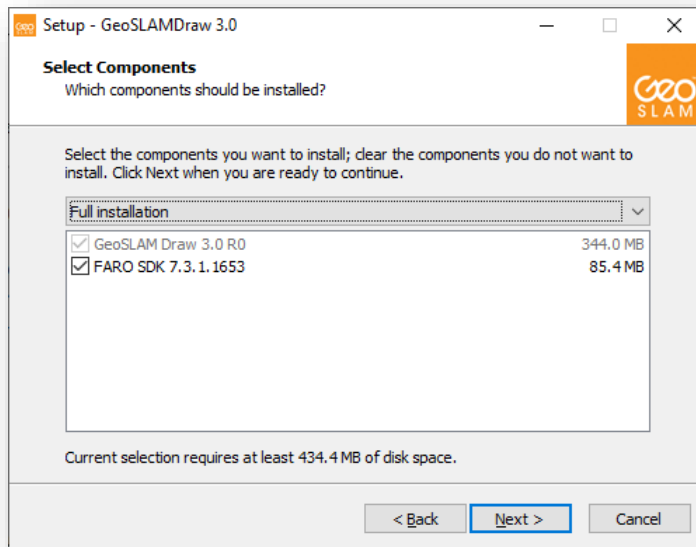
5. Read License Agreement and check 'I accept the agreement' and click Next



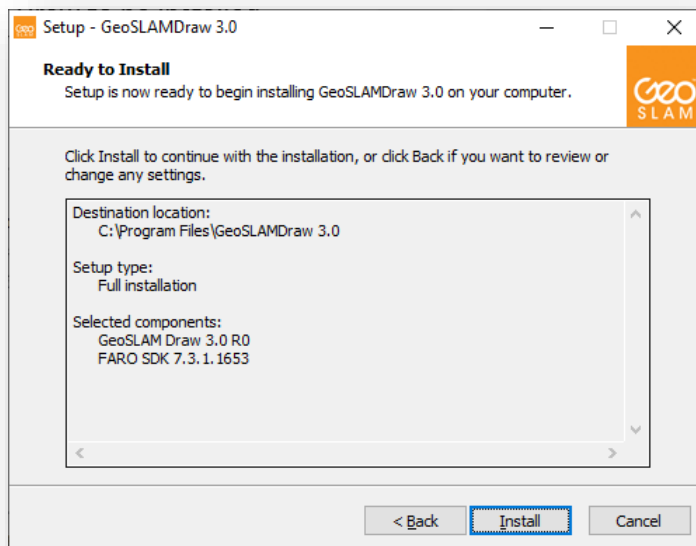
6. Click Next on folder location



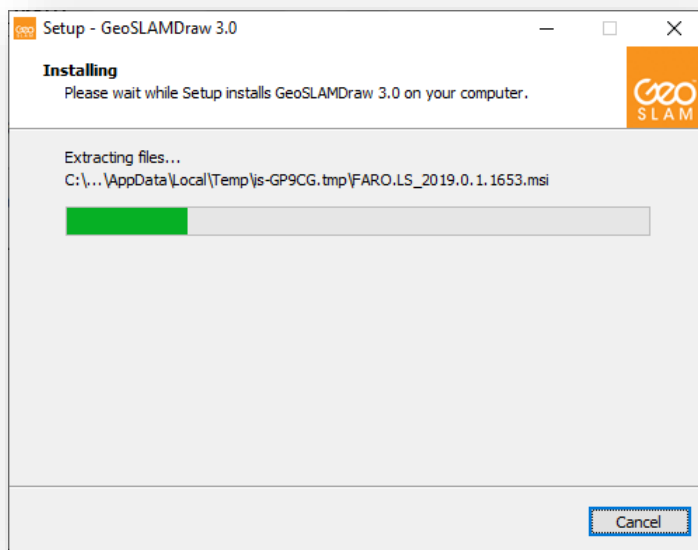
7. Click Next for all components of Draw to be installed



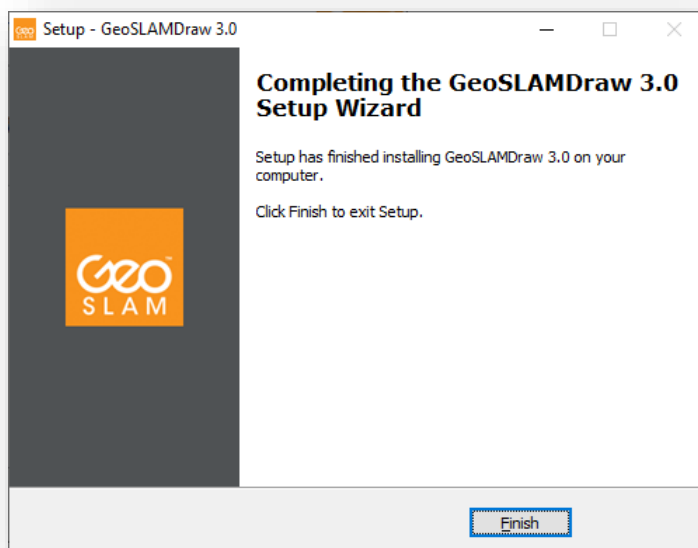
8. Click Install to install GeoSLAM Draw



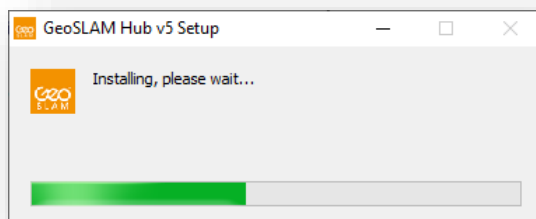
9. GeoSLAM Draw will be installed



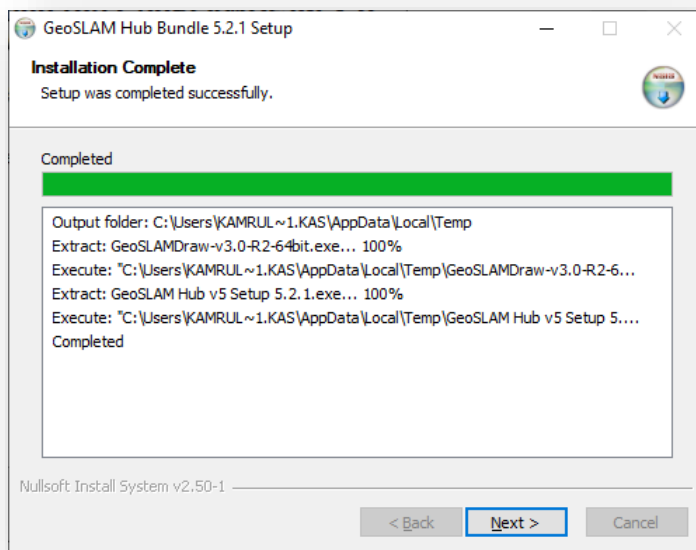
10. Click Finish



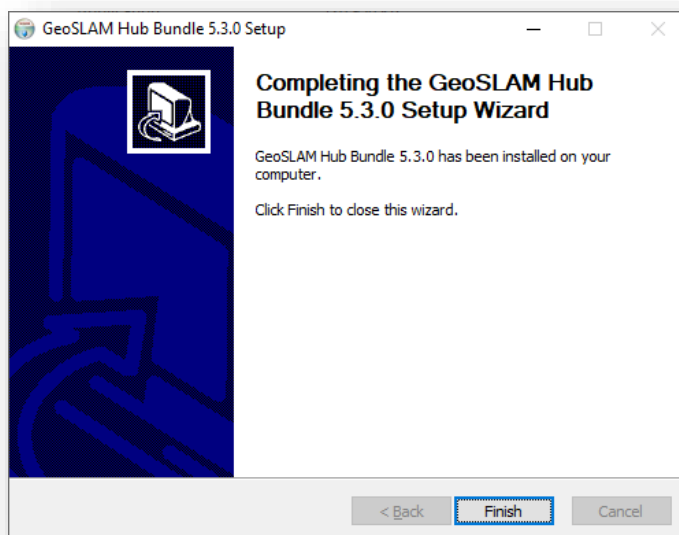
11. GeoSLAM Hub will then begin installing



12. Click Next

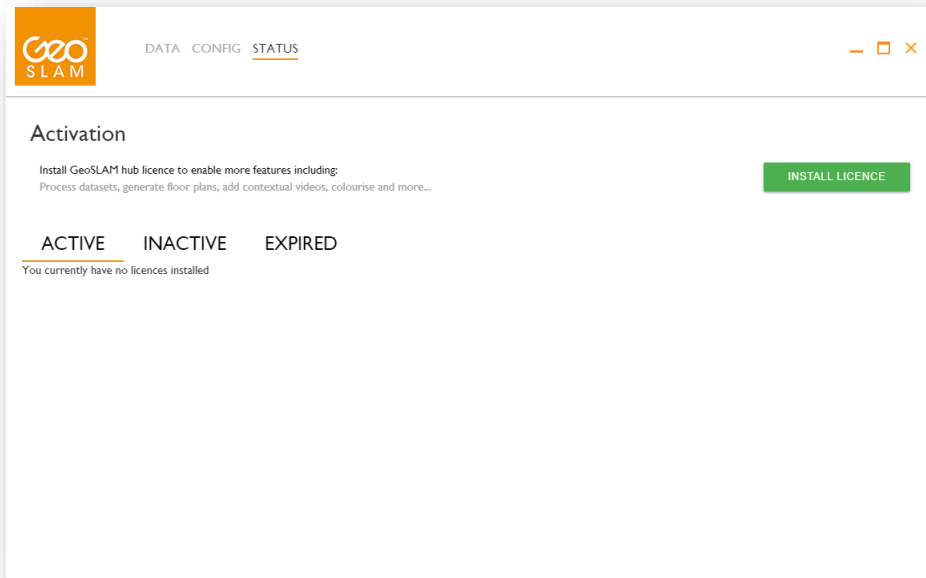


13. Click Finish



1.3 Activating Licence Code

You must install the licence to have access to all the functionality within GeoSLAM Hub. Open GeoSLAM Hub and go to the **STATUS** tab. Please make sure you are connected to the internet when attempting to activate your licence.



Click **Install Licence**

A screenshot of the "Activation Form" dialog box. The form contains the following fields: "Activation Code:" and "Company:" (text input); "First Name:" and "Last Name:" (text input); "Email:" (text input); "Country:" (text input); "Choose your country" (dropdown menu); "Primary Usage:" (dropdown menu with "Survey" selected); a checkbox for "Contact me about marketing, product and company updates"; and two buttons at the bottom: "CANCEL" and "PROCEED".

Fill out the information on the form. You can find your activation code on the software certificate found on the Kingston USB device sent with the product.

Guarantee Certificate



Date of Issue:

Company name and address	GeoSLAM Innovation House, Mere Way, Ruddington Fields Business Park, Nottingham NG11 6JS
Contact person	GeoSLAM Support
E-mail	support@geoslam.com
Telephone	01949 831814

Software Activation Key

__***_***_***_***_***_***_***_***

DO NOT ACTIVATE THIS KEY UNLESS YOU ARE THE MAIN USER

Support packages will be valid from the date of activation and will last a 12-month period unless extended at point of purchase or renewed at a later date.

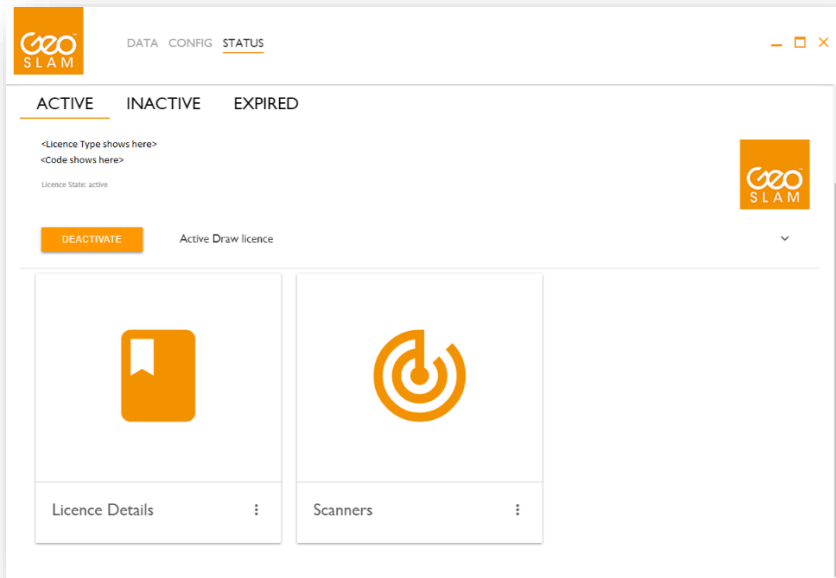
Please note that orders for support package renewals must be placed a minimum of one month before expiry. Renewals after this date may be subject to a reinstatement fee.

Product	Part No.	Serial No.	Warranty Expiration
ZEB HORIZON	K_GS_HORIZON_SILVER	HRZN: 10**** DL: 11****	**_**_****

Click **Proceed**

Activating

Once activated you should see the licence available in the ACTIVE tab.

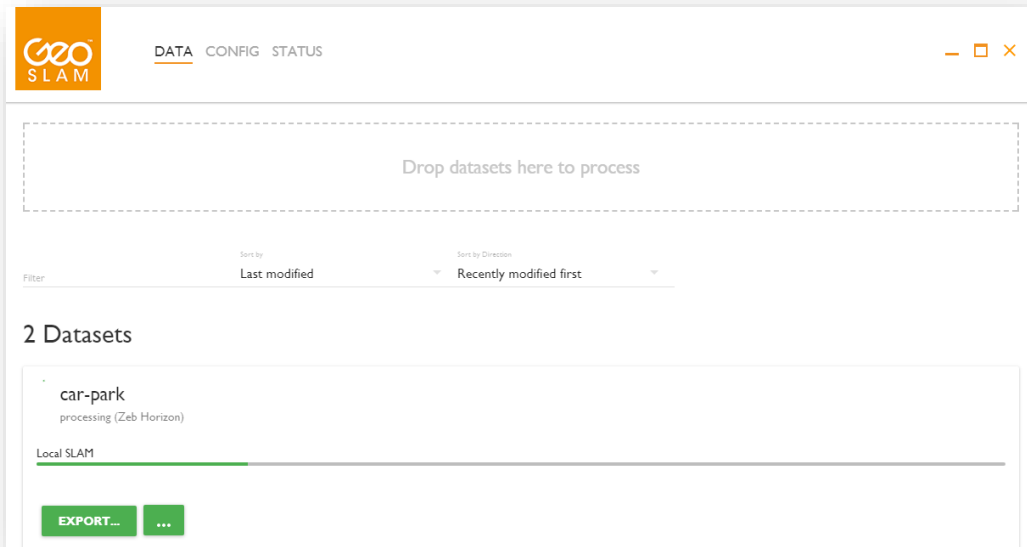


2. Importing data into GeoSLAM Hub

The ZEB HORIZON system generates an output file (*.geoslam file). The .geoslam file must be loaded into GeoSLAM HUB to provide full access to the available data. GeoSLAM HUB has a range of tools for post processing and reprocessing ZEB data sets. This section describes how to read a .geoslam file into GeoSLAM HUB.

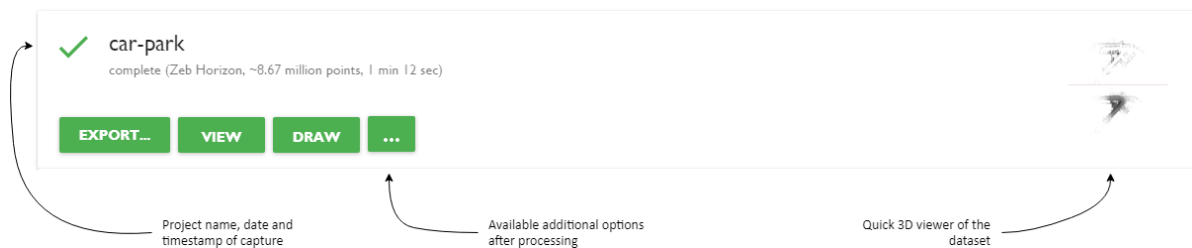
To combine ZEB data with ZEB-CAM data it is necessary firstly to import the ZEB data into GeoSLAM HUB and then Add Video as described in Section 3. For ZEB REVO you must reprocess the data for the Add Video function to appear.

To load a .geoslam file into GeoSLAM HUB on the main application page, drag and drop the file in the “Drop datasets here to process” field at the top of the page. The file will be imported into GeoSLAM HUB and data processing will start automatically.



* For best results, copy your data to your local C:\ drive and drag it onto GeoSLAM Hub from there.







Once the data has been processed the following tools become available



Here, basic information about the point cloud is displayed. User can see how long the project was scanned for and how many points are within the point cloud. On the right side, preview of the point cloud is created and by clicking that view, new 3D Viewer can be opened.

Following options are available:

		Export Data in different format. See section 4.
		Open dataset in GeoSLAM Viewer. See Section 7.
		Open dataset in GeoSLAM Draw.
	Rename	Rename the dataset.
	Delete	Delete the dataset.

	 Reprocess	Reprocess the dataset. See section 5.
	 Add Video	Add Video to the project and colour the dataset. See section 3.
	 Add PANO Images	Add Panoramic images, available only for ZEB Pano users. Workflow explained in ZEB PANO guide.

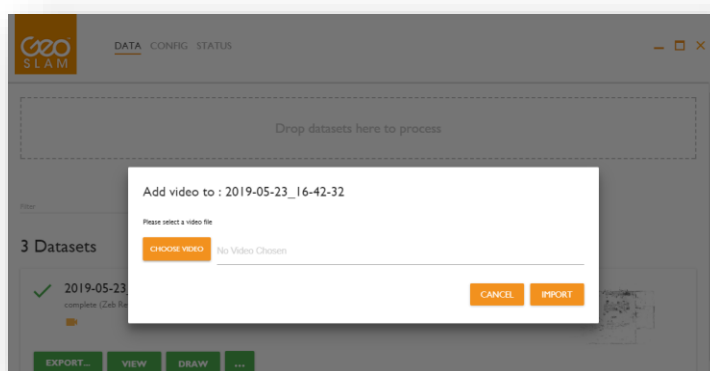
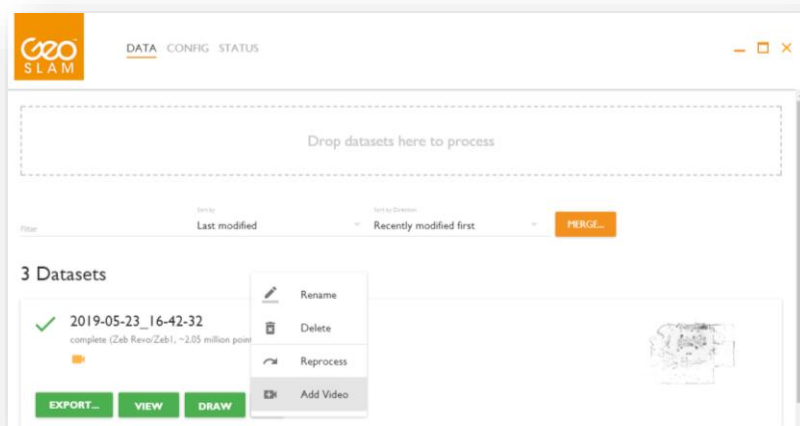
3. Add Video


ZEB Horizon

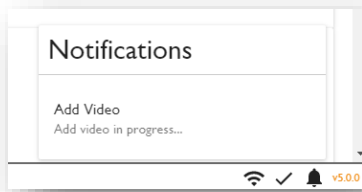
If the ZEB-CAM has been used in the time of capture, the video will be recorded to the SD card located in the camera (for more information please see ZEB-CAM User Manual). This data can be used along with the scan data for two main reasons:

- 1) Synchronising video with Scan for visual data inspection in HUB Viewer (see section 7)
- 2) Colorizing the Point cloud.

In order to add video into the software, press “add video button”. It will bring up the pop-up dialog box with “Choose files” button. Navigate to the directory where you have saved the video and press import.



Once the import button is pressed, the video starts synchronising with the point cloud in the background. Once this is completed, the data can be viewed in the HUB viewer (see section 7) and exported to different formats (see section 4). To see the status of the Add Video operation click on the Notification Bell  in the right, bottom corner.

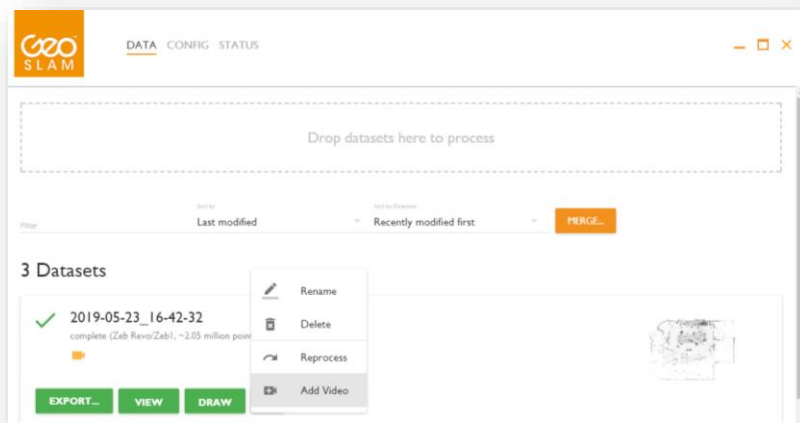


To view results of colourisation and synchronisation please follow information in Section 7, where GeoSLAM 3D Viewer is described.

ZEB Revo

This process is similar to the ZEB Horizon. Once the data has been dragged into Hub for the first time and processed, the 'Add Video' button will appear.

If your data is suffering from drift or slip it is advised to reprocess the data and check the option 'Prioritise Laser Constraints' for better results. Once the data has been reprocessed, you can proceed with adding video.










ZEB Revo-RT

After scanning, you must download the processed data from the datalogger via the Hub interface that was connected with the ZEB Revo-RT. Once downloaded, you have to take the processed data and drag it into GeoSLAM Hub 5.3 on your workstation and **reprocess the data**. After reprocessing the Add Video option will appear in the options.

4. Export Data

After processing a dataset in GeoSLAM HUB, the EXPORT button becomes active which enables the user to save point cloud results and other files created during post-processing in multiple formats and with different options available.

	Pointclouds	See section 4.1
	Trajectories	See section 4.2
	Video	This option is only available if ZEB-CAM was used and Add Video option processed. See Section 3.
	Video Stills	This option is only available if ZEB-CAM was used and Add Video option processed. See Section 3.
	Annotations	See Section 7.
	Reference Points	Available if system recorded a Reference Point during data capture. See section 4.6.
	GeoSLAM File	Export out the .geoslam file associated with this scan.

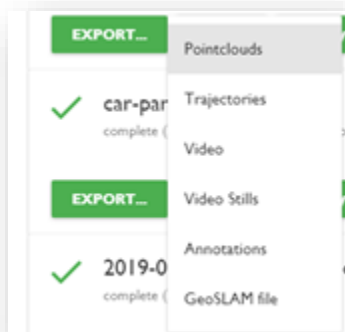
4.1 EXPORT Point clouds

Users can select from the following options:

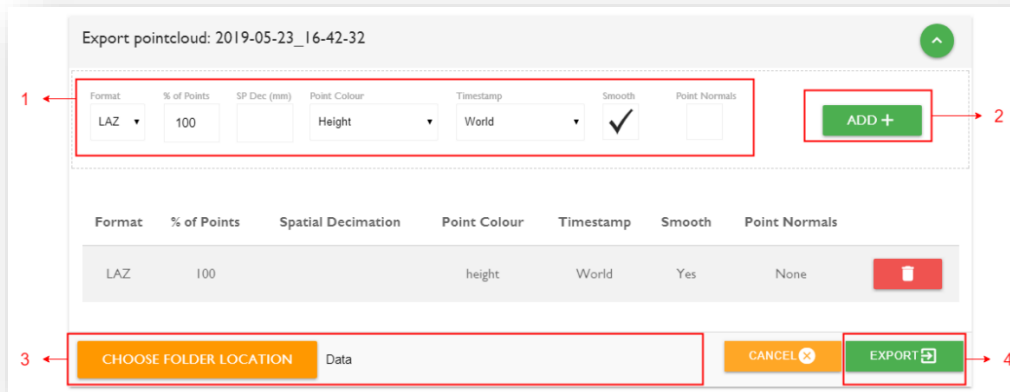
Option	Description	
<i>File Format</i>	Available formats:	
		E57
		LAS
		LAZ
		PLY
		TXT (ASCII)
<i>% of points</i>	Enter percentage of points to be output. Enter 100% to output all points.	
<i>Spatial decimation</i>	Enter a value in millimetres to spatially decimate the output. Groups of points within this distance are averaged into a single point resulting in a more consistent and smoother point cloud. Leave blank for no spatial decimation.	
<i>Point Colour</i>	Writes a colour value (RGB 0-255) for each point	
	Time	Colour by time, scale from red (start) to blue (end).

	Height	Single colour gradient.
	Shaded	Coloured by intensity values displayed as ambient occlusion grey scale.
	SLAM Condition	Colour scale of SLAM condition. Blue= good, red= poor.
	Shape	Flat surfaces are coloured pink, non-flat surfaces coloured blue to green.
	ZEB CAM	Requires optional ZEB-CAM accessory. Points that are observed by the ZEB-CAM are coloured from ZEB-CAM data. Unobserved points are not included in the output file.
	ZEB CAM Shaded	Requires optional ZEB-CAM accessory. Points that are observed by the ZEB-CAM are coloured from ZEB-CAM data. Unobserved points are coloured by ambient occlusion grey scale (shaded).
	None	No colour value is written.
<i>Timestamp</i>	Select from:	
	World	Unix timestamp when the data captured.
	Scan time	Time since start of the scan.
	None	No time stamp
<i>Smooth</i>	Once checked, the algorithm reduces planar noise by analysing the shape of the object and the neighbouring points together with their normals. It doesn't discard any points during this process. It is run with multiple iterations.	
<i>Include normals</i>	Check the checkbox to include point normal in the output file (this option is not supported in LAS and LAZ formats).	

Click EXPORT and select Pointclouds



1. Select configuration of options which will be used to output the file
2. Click Add button to add configuration to the list. (User can add multiple configurations to the list to export them all).
3. Choose export destination.
4. Click Export



File naming

Each exported point cloud file name is created by descriptors defining the configuration of the file as defined in the following table:

Option	Descriptor	Description
% of points	_Xpct	Where X is the percentage of points selected.
Spatial Decimation	_XXmm	Where XX is the spatial decimation selected. Omitted if no spatial decimation selected.
Point colour		
	_time	Coloured by time.
	_height	Coloured by height.
	_shaded	Coloured by shade (ambient occlusion).
	_slamcondition	Coloured by SLAM condition.
	_shape	Coloured by shape.
	_zebcam	Coloured by ZEB-CAM (RGB).
	_zebcamshaded	Coloured by ZEB-CAM +shade.
		Omitted is set to None
Timestamp		
	_world	Time in World timestamp, in UNIX time, seconds from 1 st January 1970.

	_scan	Time in local Scan timestamp.
		Omitted if None selected.
<i>Smooth</i>		
	_smoothing	If smoothing algorithm used
		Omitted if Smooth option not in use.
<i>Point Normals</i>		
	_normals	If Point Normals selected in e57, PLY and TXT formats
		Omitted if Point Normals not selected.

4.2 EXPORT Trajectories

Few different options for exporting Trajectories are available.

- TXT with quaternions
- PLY coloured by condition
- PLY coloured by time

To export trajectories:

1. Check a checkbox next to the format of trajectory that you wish to export.
2. Choose export destination
3. Click EXPORT button.



The ASCII txt file containing the scanner trajectory contains the following data:

Column:	Descriptor:	Decription:
1	Time	Time in UNIX time
2	X	Scanner X coordinate in meters relative to the scan origin
3	Y	Scanner Y coordinate in meters relative to the scan origin
4	Z	Scanner Z coordinate in meters relative to the scan origin
5	q0	Orientation quaternion
6	q1	Orientation quaternion
7	q2	Orientation quaternion
8	q3	Orientation quaternion

4.3 Export Video

This option exports MP4 video that was added previously to the dataset. User can select the export destination.

4.4 Export Video Stills

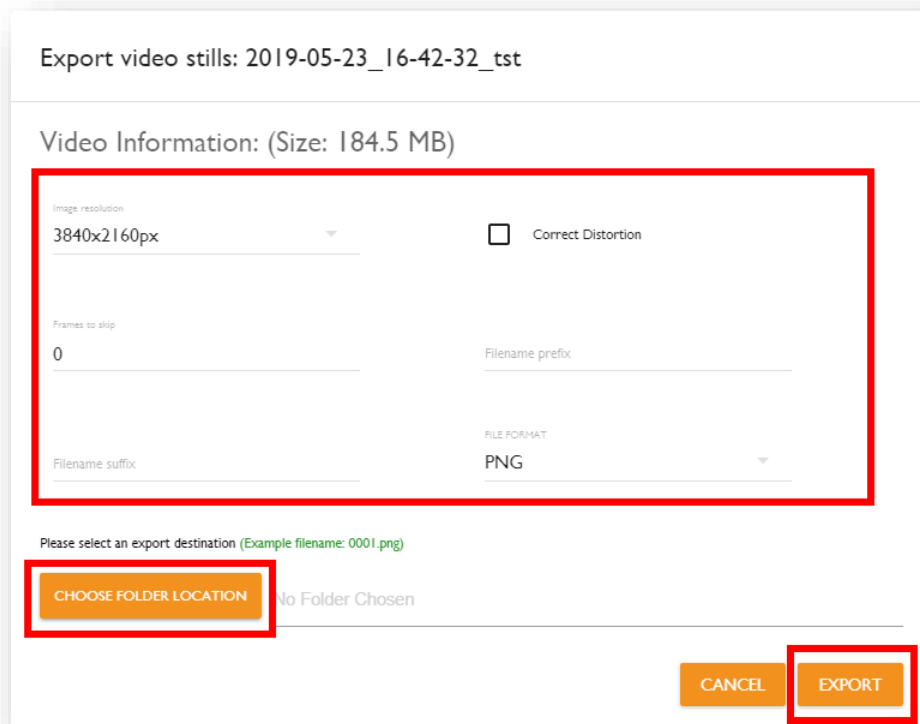
After Adding Video to the dataset it is possible to export separate video stills for further analysis. The following options are available:

<i>Option</i>	Description
<i>Image resolution</i>	Select what resolution should be used to output image.
<i>Correct Distortion</i>	Check if you wish to correct for distortion
<i>Frames to skip</i>	Select how many frames to skip.
<i>Filename prefix</i>	Choose text that will be added at the start of the file name. If left empty, nothing will be added.
<i>Filename suffix</i>	Choose text that will be added at the end of the file name. If left empty, nothing will be added.
<i>File formats</i>	Choose from: PNG, JPG, BMP

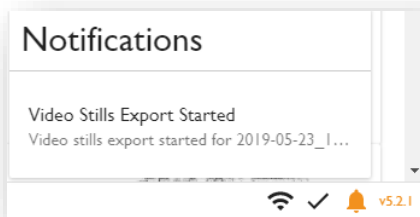
To export Video Stills:

1. Select options that you wish to use when exporting Video Stills.
2. Select export destination.

3. Click Export



4. Monitor status of the operation in Notification window.



4.5 EXPORT Annotations

GeoSLAM Viewer lets the user add annotations to the scan. The user can then export those annotation into a TXT file with coordinates of each annotation. See section 7 for more information on annotations.

4.6 EXPORT Reference Points

If the system has recorded a Reference Point during the data capture it will be then available to export into a TXT file with exact coordinates of each point, time stamp and time spent stationary on the Reference point.

Reference Points file format:

Column:	Descriptor:	Description:
1	X	Scanner X coordinate in meters relative to the scan origin

2	Y	Scanner Y coordinate in meters relative to the scan origin
3	Z	Scanner Z coordinate in meters relative to the scan origin
4	Time	Time in UNIX time
5	Duration	Time in Seconds spent stationary on each Reference Point

4.7 Export GEOSLAM file

This option allows you to export the processed .geoslam file to be shared with colleagues and clients. This allows them to view the pointcloud in a GeoSLAM Hub 5.3 without having a licence. GeoSLAM Hub 5.3 can act as a free viewer for GeoSLAM data in this way.

The user can simply drag and drop the processed .geoslam file into Hub.

5. Processing & Reprocessing your data in GeoSLAM Hub

GeoSLAM Hub allows you to process .geoslam files by a simple drag and drop process. This will start processing your data for your ZEB REVO and HORIZON using the default processing options for each system. For your ZEB REVO RT system, your data is already processed, drag and dropping will unpack the data for each scan.

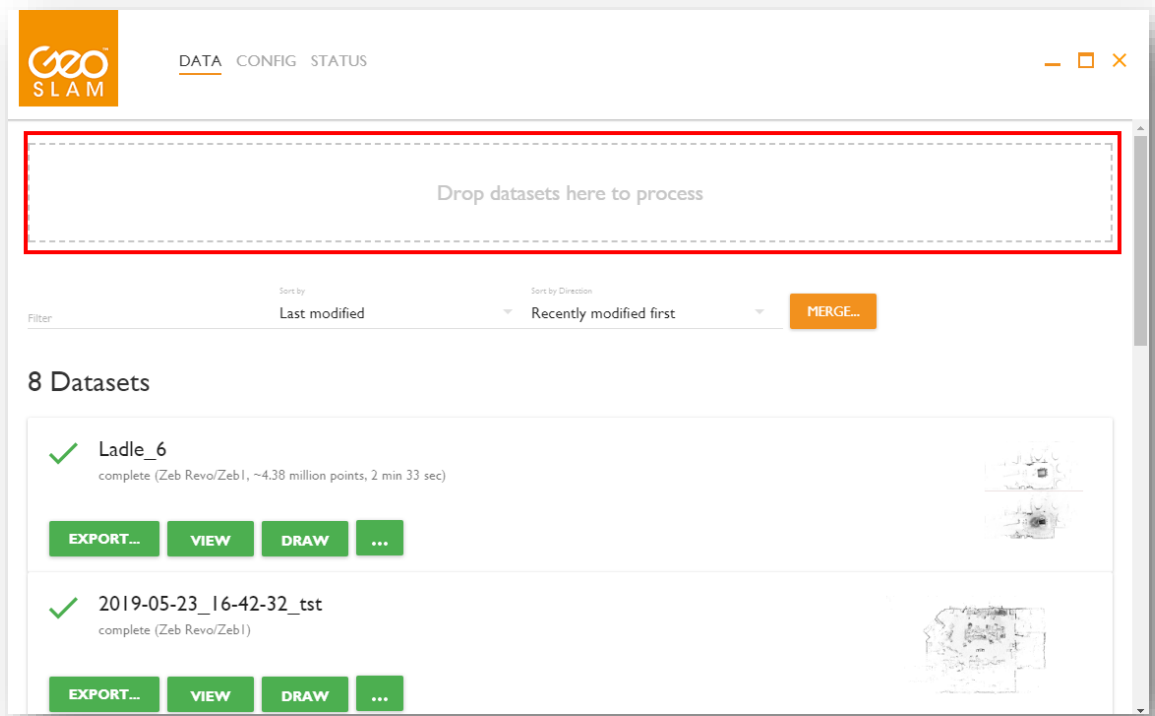
During processing there are seven processing stages:

- Importing
- Preparing
- Local SLAM
- Global SLAM
- Saving data
- Generating viewer
- Finding floors

5.1 Processing your data

1. To process your data in GeoSLAM Hub drag and drop your .geoslam file into Hub. It is advised that the .geoslam file should initially be dragged into a local drive such as

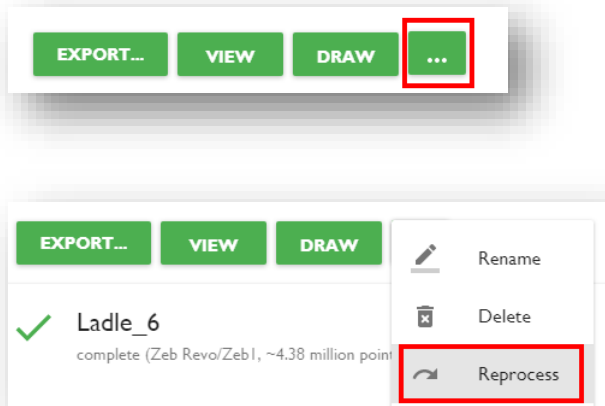
the C:\ drive and dragged into Hub from there.



2. Hub should now begin to process the dataset. Once complete you will see a green tick against it and more options will appear on the dataset. You are now able to view the data, export it or analyse it in GeoSLAM Draw.

5.2 Reprocessing your data

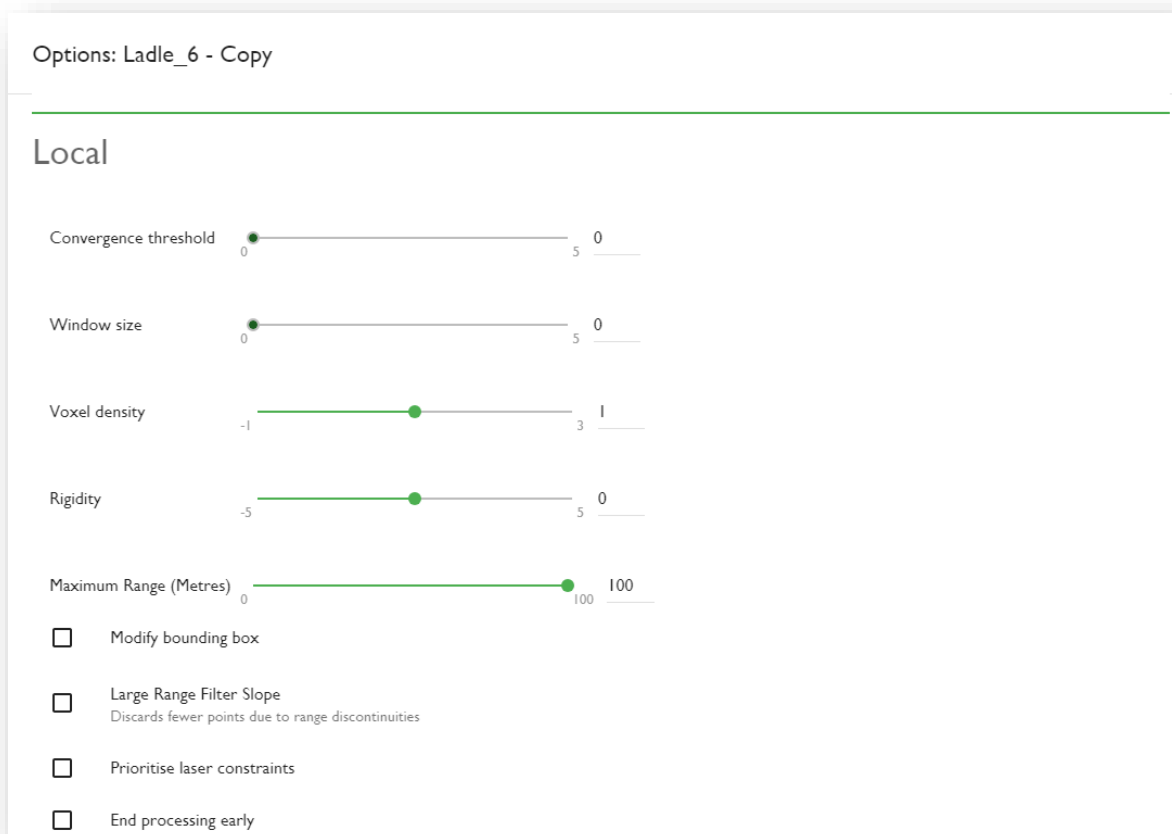
To reprocess your data in GeoSLAM HUB, select three dots and click “reprocess” button.



The reprocessing options are useful for data that contains drift or slip. Drift and slip can be caused due to an inconsistent scanning method, or if the scanned area does not contain any features, for example smooth tunnels or a large plain field. Using reprocessing helps to solve data inconsistency in most cases.

There are a several different options to use when reprocessing the data, separated into Local and Global. Local parameters define the local SLAM processing options, and when increased solves 80% of drift cases, global – are used for global SLAM reprocessing and usually solves issues when the data capture method was inconsistent and when start and finish of the scan was in different places.

5.2.1 Local reprocessing options



Local Registration Options

Convergence Threshold	Increasing this parameter increases the maximum number of iterations for each processing step and reduces the convergence threshold during the global registration phase. Increasing this parameter may improve the global registration (at the expense of processing time). Changing this parameter will not fix errors that occur during the local registration phase. Range 0 to 5 (default 0)
Window Size	Increasing this parameter causes the algorithm to take larger samples of data for each processing step. This may help bridge slips that occur during the local registration phase. Increasing this parameter will increase the amount of memory required and the overall processing time. Range 0 to 5 (default 0)
Voxel Density	Increasing this parameter causes the algorithm to use smaller voxels. This should enable more detail to be detected at close range and used during the SLAM processing. Increasing this parameter will increase the amount of memory required and the overall processing time. Range -1 to +3 (default 0)
Rigidity	Increasing this parameter will cause the algorithm to be more "rigid" during local registration phase. The algorithm will be more influenced by the raw IMU data and less influenced by laser point data when estimating the trajectory.

		Reducing this parameter has the opposite effect. The algorithm will be more influenced by the laser point data (SLAM registration) than the raw inertial data from the IMU Range -5 to +5 (default 0)
<i>Maximum (Metres)</i>	<i>Range</i>	The user can limit the range of the points included in the final point cloud. Range is calculated as a distance from the trajectory. Points beyond the maximum range set during the Processing will be ignored from the final output. This is only for ZEB Horizon data.
<i>Modify Bounding Box</i>		The user can change the default bound box used to eliminate the operator (or a platform the scanner is mounted on) from the scan. By default, the bounding box is set to eliminate human operator from the scan. All points inside the bounding box are ignored Increase the bound box size to eliminate more points around the scanner, in a case of UAV, cradle or other system, on which the scanner is mounted. If narrow spaces are scanned, reducing the bounding box will include the points at the closer range (points close to the scanner).
<i>Large Slope</i>	<i>Range Filter</i>	By default, the processing algorithm filters and discards outlier points, i.e. those points that do not appear to be part of a continuous surface. This enables so called “edge effect” points to be removed creating a cleaner data set. In sparse environments (e.g. outdoors/forestry) this can result in significant removal of points.
<i>Prioritize constraints</i>	<i>laser</i>	This parameter is disabled by default. When enabled it will process REVO and RT data by focusing more the laser information. For REVO and RT data which has significant drift or duplications enabling this parameter should improve the result. This will have best impact on a longer, more complex captures.
<i>End processing early</i>		This option can be used in case of the slip or drift at the end of the scan. User can insert time after which the processing will finish and everything that was captured after that certain time will be ignored. Start/Finished closed loop has to be unticked when using this option.

5.2.2 Global reprocessing options

Global

- Prioritise planar surface
Are most surfaces flat?
- Start/Finish - closed loop
Was the scan a closed loop

Convergence threshold
0
5
●

Rigidity
-5
5
●

Global Registration Options		
<i>Prioritise Surfaces</i>	<i>Planar</i>	Selecting this option will cause the algorithm to only match very planar surfaces during the global registration phase. This can help improve the global registration of very large data sets assuming there are sufficient planar surfaces at the points where there is loop closure.
<i>Start/Finish Loop</i>	<i>Closed</i>	The default for this setting is enabled. Disable this setting if the end of the scan is not in the same location as the start. This checkbox, when checked by default will force the start and end points to be pulled together before the start of the Global registration.
<i>Convergence Threshold</i>		Increasing this parameter increases the maximum number of iterations for each processing step and reduces the convergence threshold during the local registration phase. Increasing this parameter may fix some processing errors (at the expense of processing time). Range 0 to 5 (default 0)
<i>Rigidity</i>		Increasing this parameter will cause the algorithm to be more “rigid” during the global registration phase. The algorithm will be more influenced by the raw IMU data and less influenced by laser point data when estimating the trajectory. Reducing this parameter has the opposite effect. The algorithm will be more influenced by the laser point data than the raw inertial data from the IMU Range -5 to +5 (default 0)

5.2.3 Draft Options

Draft mode

Generates a quick preview output to confirm enough of the environment was scanned. It will reduce the time taken to process the data but will also produce a less accurate result with no 3D viewer.

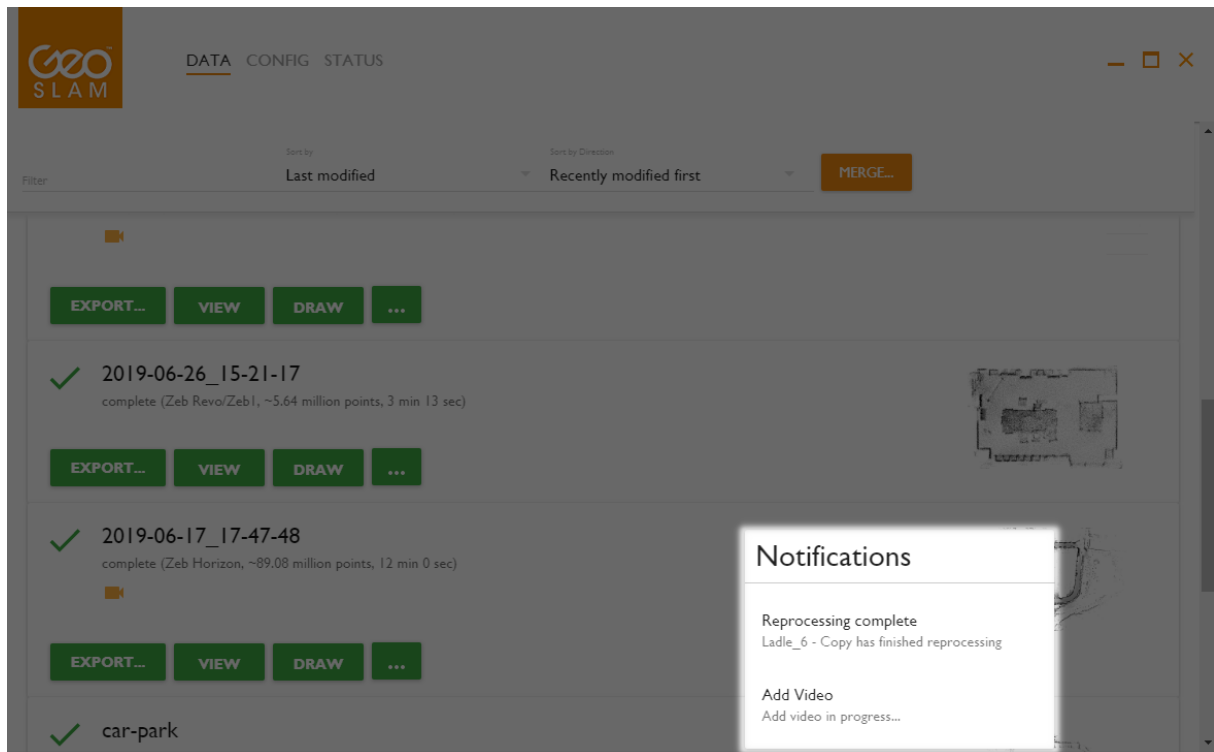
Changing these parameters will solve most issues the dataset might have after reprocessing. If the data still contains drift or other inconsistencies, please contact support@geoslam.com. If the dataset has been captured by not following our data capture recommendations, rescanning might be required. Once reprocessing is complete, the data can be viewed in the HUB viewer ([see section 7](#)) and exported to different formats ([see section 4](#)).

There is a notifications button in bottom right corner, where any processing progress is logged ([see section 6](#)).

6. Notifications

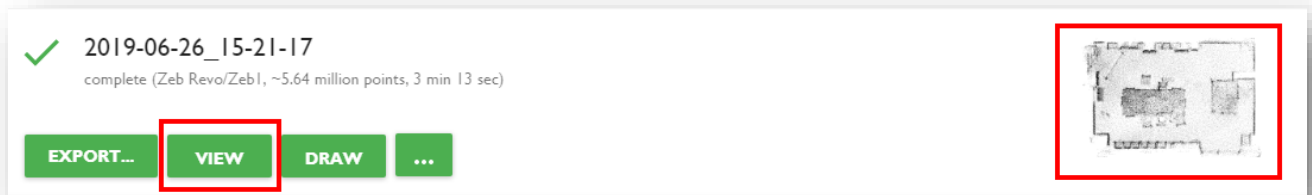


In the bottom right corner of GeoSLAM Hub you will find the notifications button (bell icon). Once pressed, it brings up the log of what actions Hub has carried out during or after processing the data.

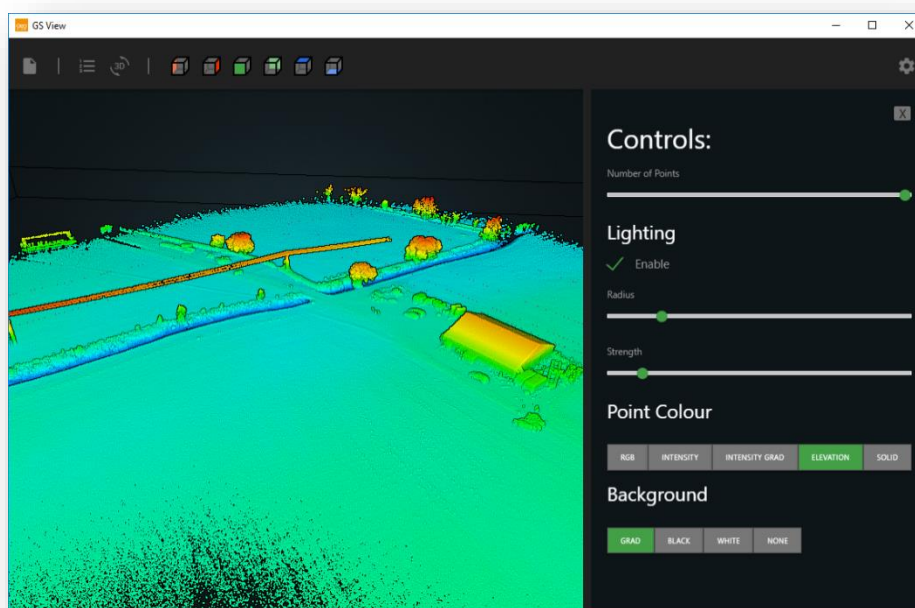


7. GeoSLAM Viewer

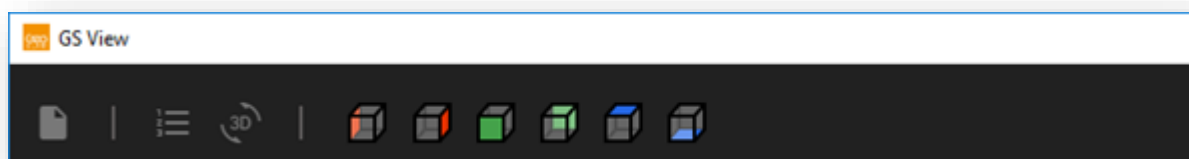
The GeoSLAM Viewer feature in HUB allows you to view, interrogate and note the data straight after processing. The Viewer can be opened either on pressing on View button in HUB or on the overview image.



The GeoSLAM View window will open the processed data. By default the points are coloured by elevation.




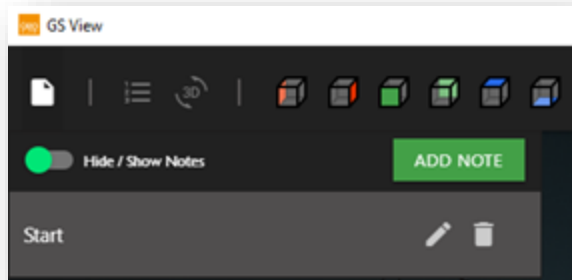
The top panel on the viewer provides several options for the data display and saving notes in the pointcloud.



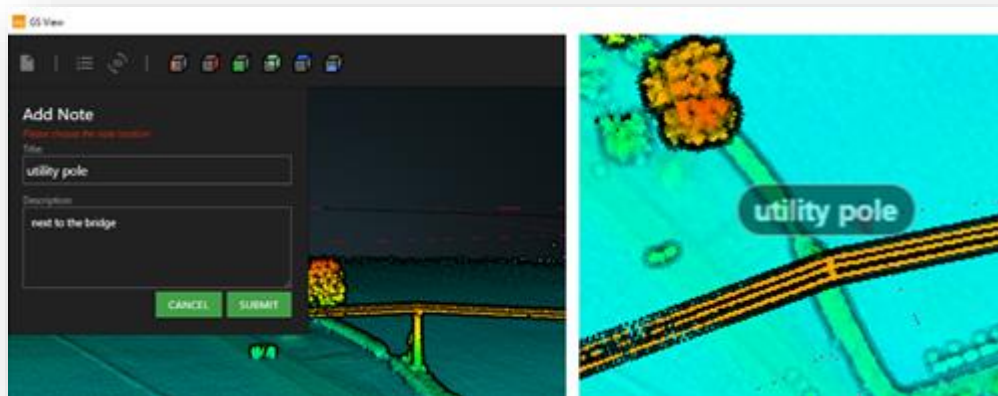
From left to right: Add note, floor display, 3D view, Left view, Right view, Front view, Back view, Top view, Bottom view

7.1 Add note


1. Click on the point cloud to where you'd like your comment to appear.
2. Hover the mouse over the notes icon 

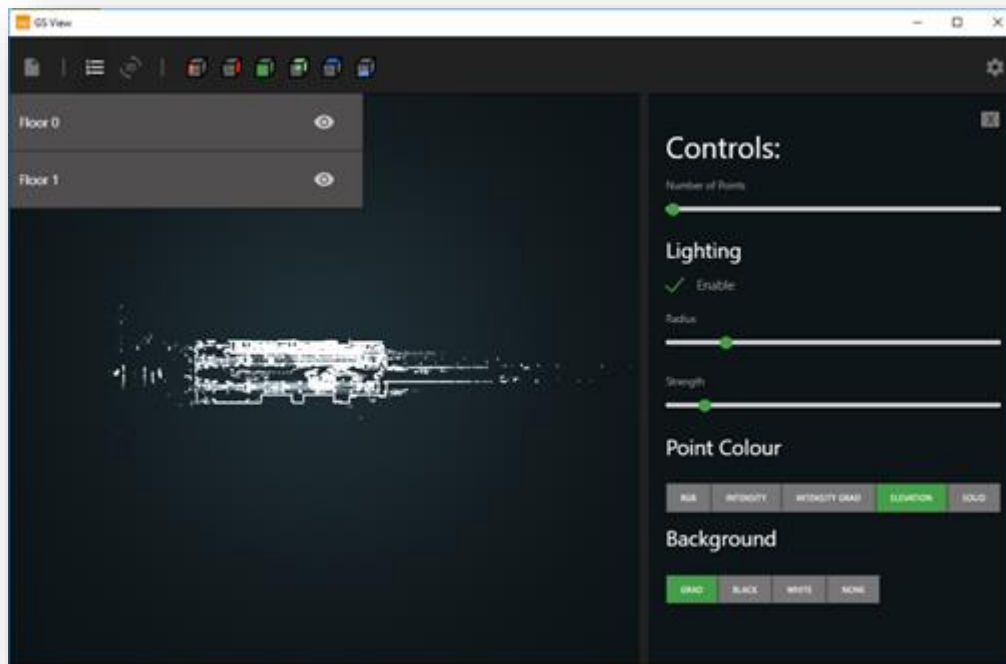


3. Click Add Note and enter a title and description before hitting submit. The note will now appear on your point cloud and also appear in the log of notes when hovering over the notes icon. Notes may be edited, deleted, or shown/hidden in the pointcloud.



7.2 Floor display

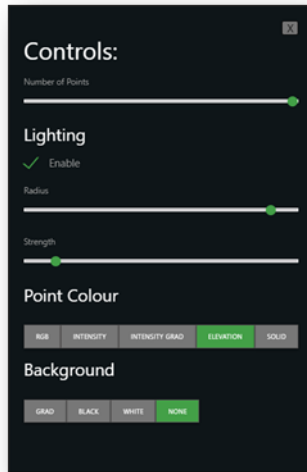
The user can view the data floor by floor by selecting the appropriate floor in the floor selector tool. 



The floors in this case are represented in 2D as an alternative to floorplans. Using the visible eye tool you're able to hide floors from the view.

7.3 Controls

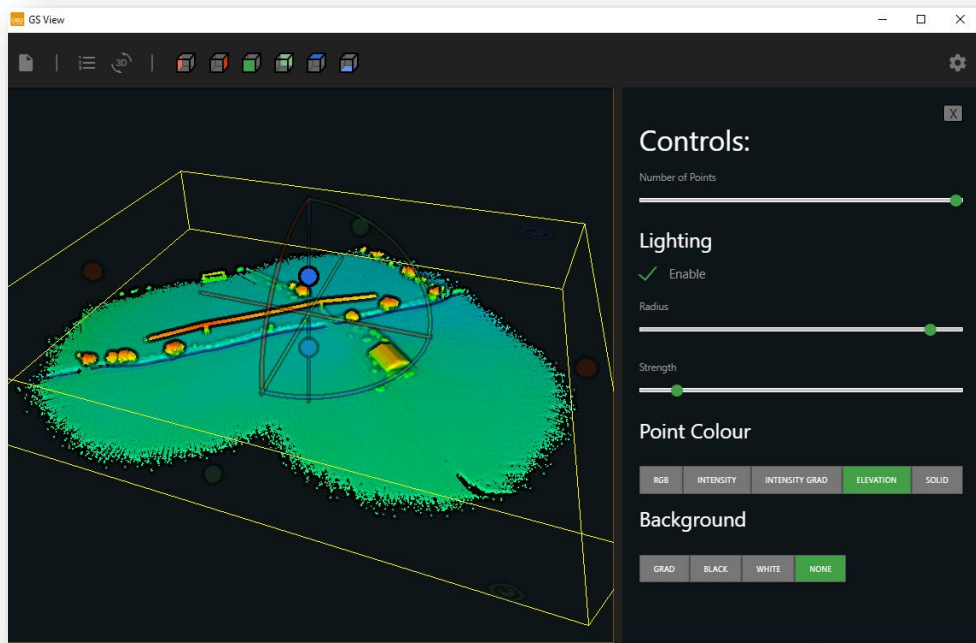
The user can control the pointcloud display with various controls on the right side of viewer. If you cannot see the options, click on the cog in the top right corner.



Controls	
<i>Number of points</i>	This controls density of point cloud displayed in the Viewer. Points increase as you move the slider to the right.
<i>Lighting / Radius</i>	Increases thickness of an outline of each point. Can be applied to any of the point colour options chosen by the user.
<i>Lighting / Strength</i>	Increases the contrast of displayed point cloud. Can be applied to any of the point colour options chosen by the user.
<i>Point Colour</i>	Display point cloud in different colour. <ul style="list-style-type: none">• RGB- If ZEB CAM video has been added to the data.• Intensity – for ZEB HORIZON datasets, intensity displayed in greyscale• Intensity Grad- for ZEB HORIZON datasets, intensity displayed in gradient colour scheme (helps to identify features such as powerlines).• Elevation – data displayed based on elevation (helps to identify objects such as houses, lamp posts or bridges)• Solid – one colour assigned to all points
<i>Background</i>	Changes background of the Viewer between <ul style="list-style-type: none">• GRAD• BLACK• WHITE• NONE

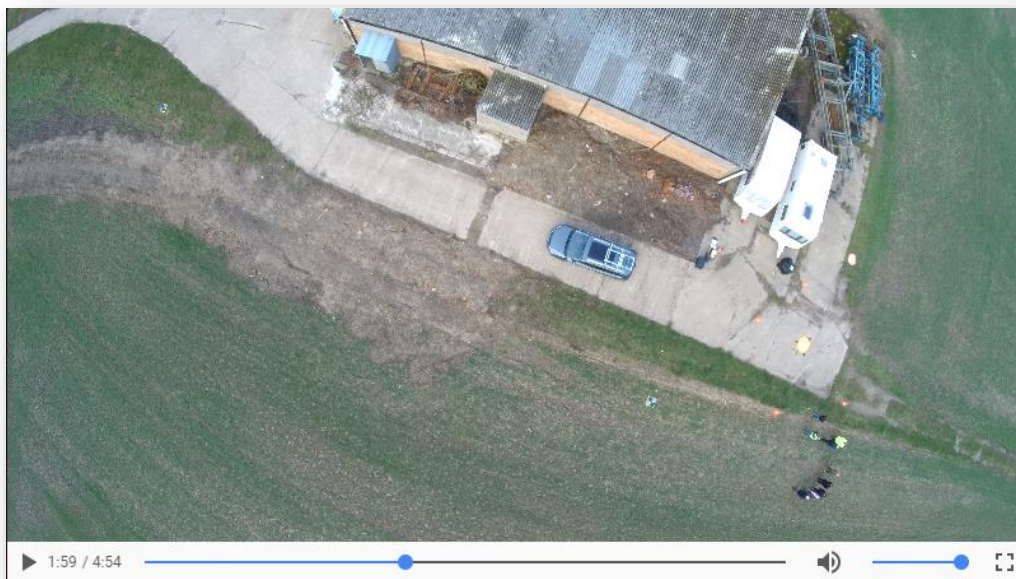
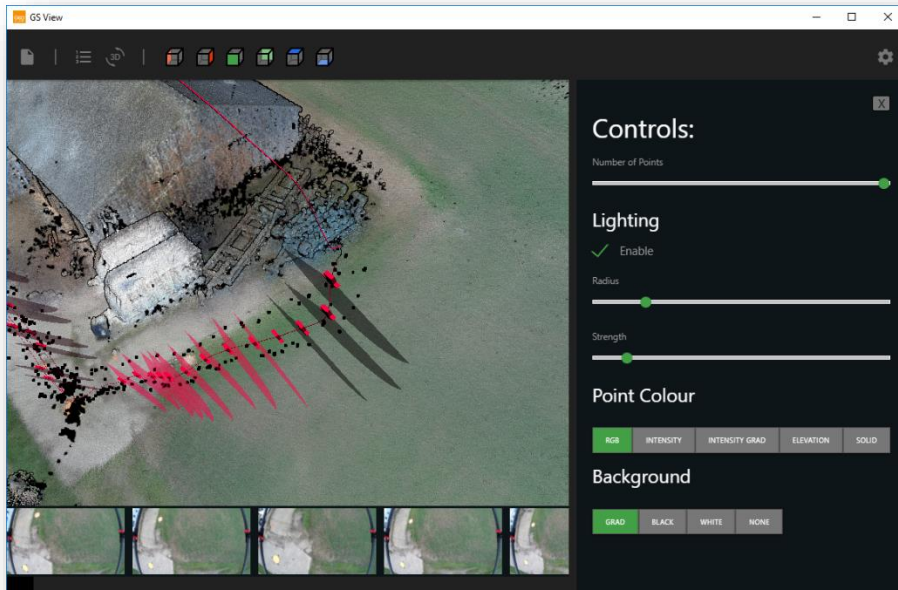
7.4 Bounding box

The bounding box is activated by a double clicking on the black bounding box around the pointcloud. When active, the box is yellow,



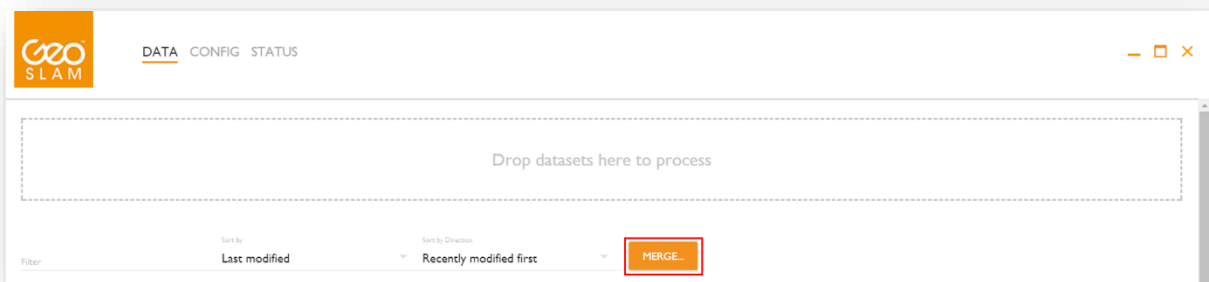
7.5 Video display

When the video has been added to the data, it can be shown by double-clicking on the trajectory. The trajectory will show the arrows showing the recorded video frames. The user can then choose the video from the bottom of the viewer to play the recorded video around the area of interest.

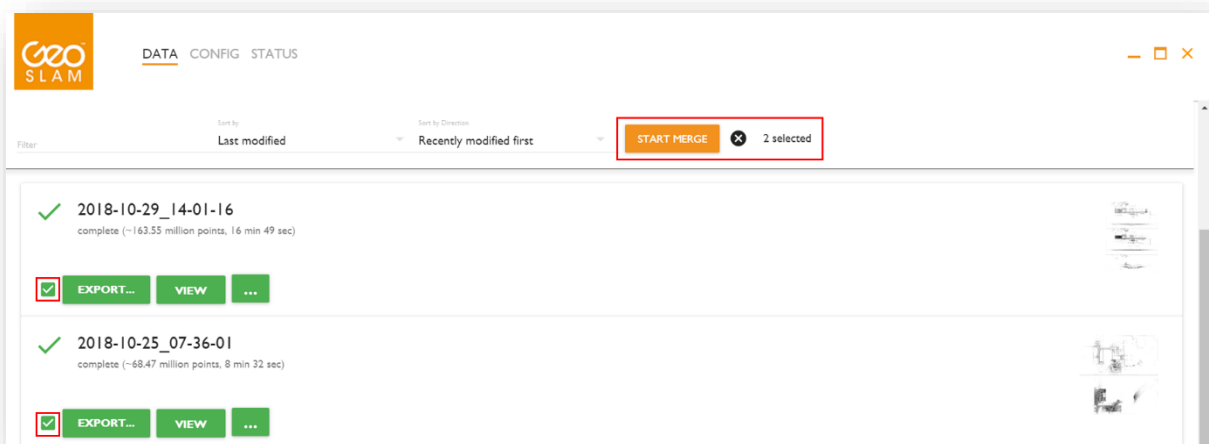


8. Merging Scans with HUB

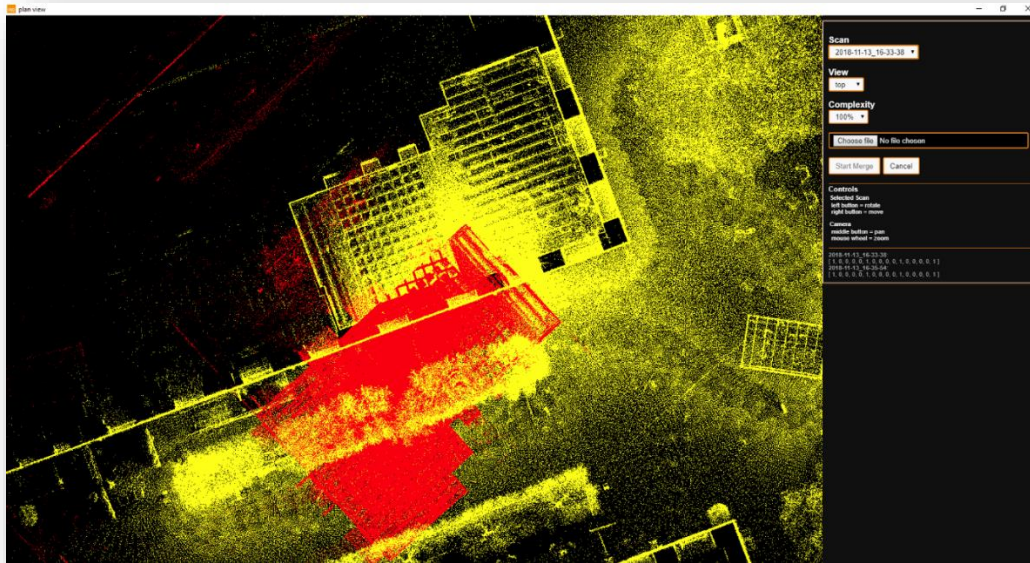
When Scanning with any GeoSLAM scanner, we recommend limiting each scan to maximum 30 minutes. If large areas are to be scanned it is recommended to do a number of shorter scans and use the Merge function in GeoSLAM Hub.



Once you click MERGE, selection is enabled. You can now select multiple scans to be merged. Click at least two to be merged.



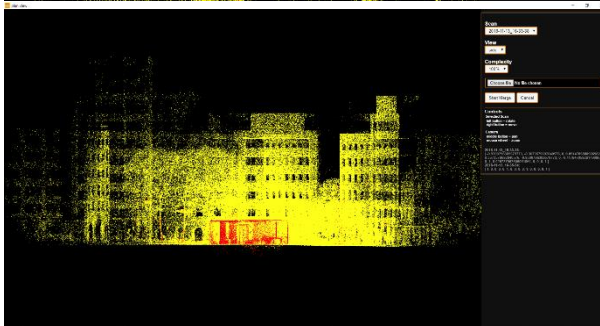
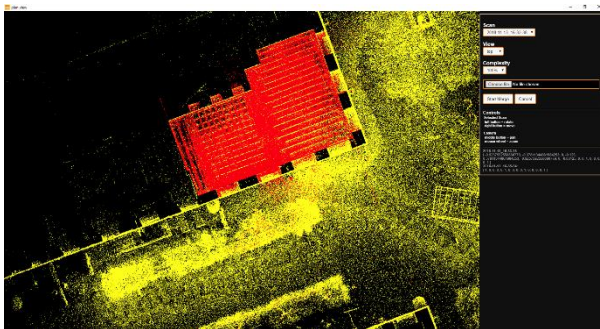
Once the at least two scans are selected, press “Start Merge” button. This will bring up a window for scan alignment.



Here, the alignment is done in two stages described below.

1) Rigid Manual alignment of the scans:

Once this window is opened, firstly, use your mouse to rotate and move the scan to be aligned. The yellow scan will be the reference point cloud, and the red one – aligned one. The reference scan can be changed in the first drop-down. Use the View drop-down to change from the top to side view to make sure the scans are approximately in the correct place.

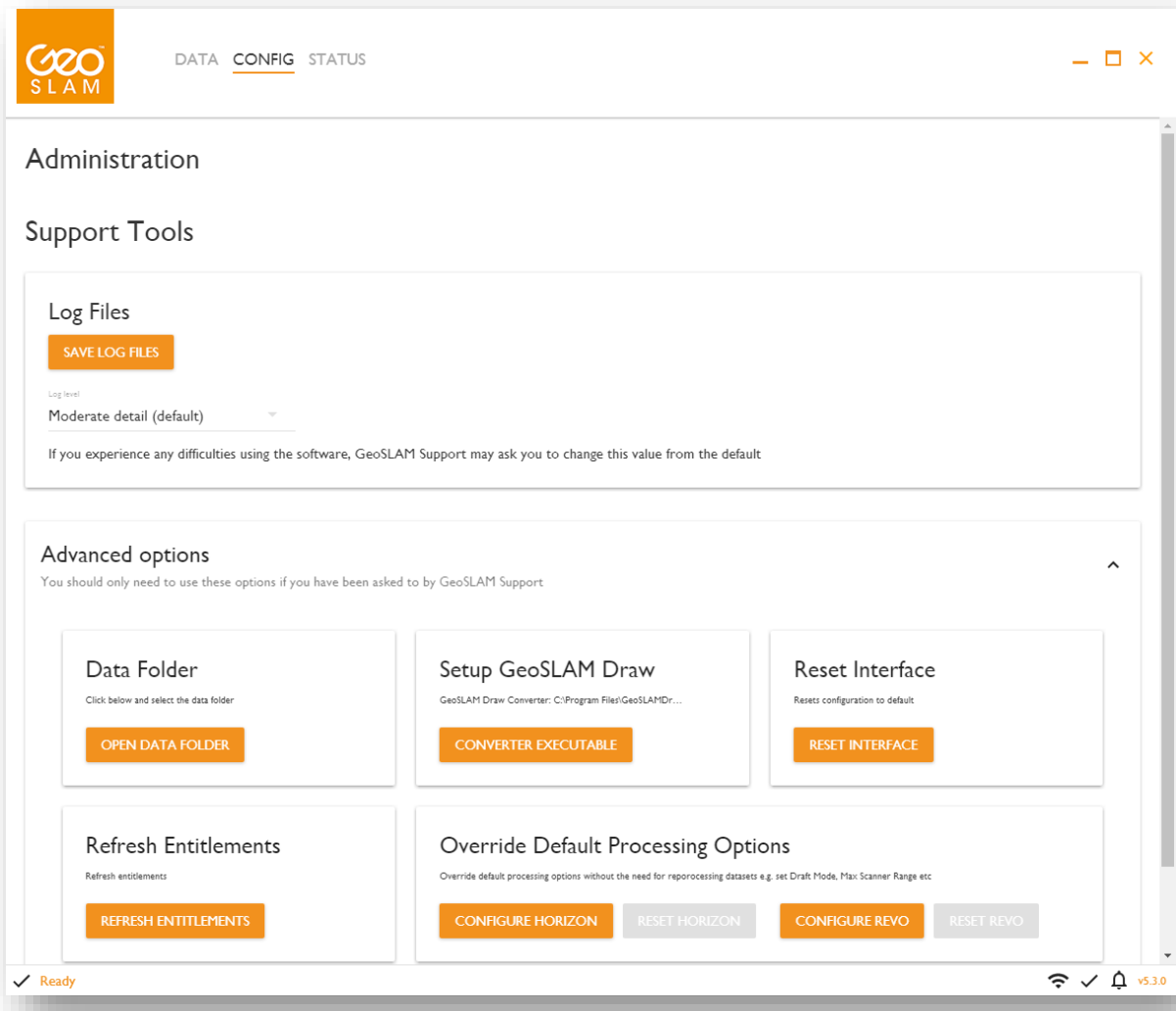


2) Automatic fine adjustment based on SLAM.

Once the two (or more) scans are roughly in the correct position, click "Choose File" button and define the directory where you would like to save the aligned scans. Then press on "Start Merge" button, which will finely register the datasets together.

9. CONFIG tab

The config tab contains the interface for specific support tools and useful features. Below is a short summary of each tool and its function.



9.1 Saving Log Files

GeoSLAM Hub automatically collects data in different log files, clicking the 'Save log files' button allows you to choose which folder location you save these to. This will create a .zip file which is named 'geoslam-desktop-logs' followed by the date and time that they are saved in format YYYY-MM-DD and HH-MM-SS.

If you encounter an issue whilst using Hub, our Support team may ask you to send them the log files to diagnose the problem. The level of detail that the log files contain can be determined from here,

where moderate detail is the default. You can change this to include Errors Only, Errors and Warnings, Moderate Detail, Lots of Detail, and Everything, depending on the level of detail needed.

9.2 Advanced options

The advanced options should only be used when instructed by a member of our Support team.

9.2.1 Open Data Folder

This is the data processing folder, you will have your raw data files and your results folder. You will also have a config folder which is used during processing. This information enables the processing to work correctly and contains the licence file information. Please do not alter unless instructed to do so by GeoSLAM staff.

9.2.2 Setup GeoSLAM Draw

Setup GeoSLAM Draw update

9.2.3 Reset Interface

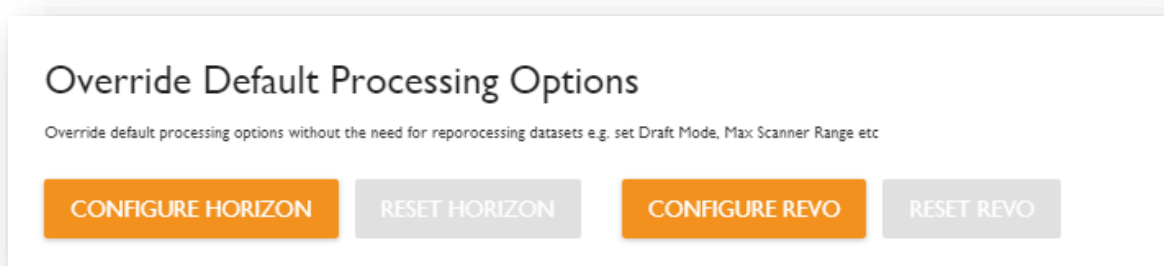
This button resets the interface. Only click this option if requested by the GeoSLAM support team. This resets all settings to the factory install.

9.2.4 Refresh Entitlements

This tool is used to download the latest version of the licence from our licence server (after any updates have been applied by the Support team). This will also refresh the GeoSLAM Draw licence. Please make sure you are connected to the internet when clicking this.

9.2.5 Override Default Processing Options

You can override your default processing options in this section.



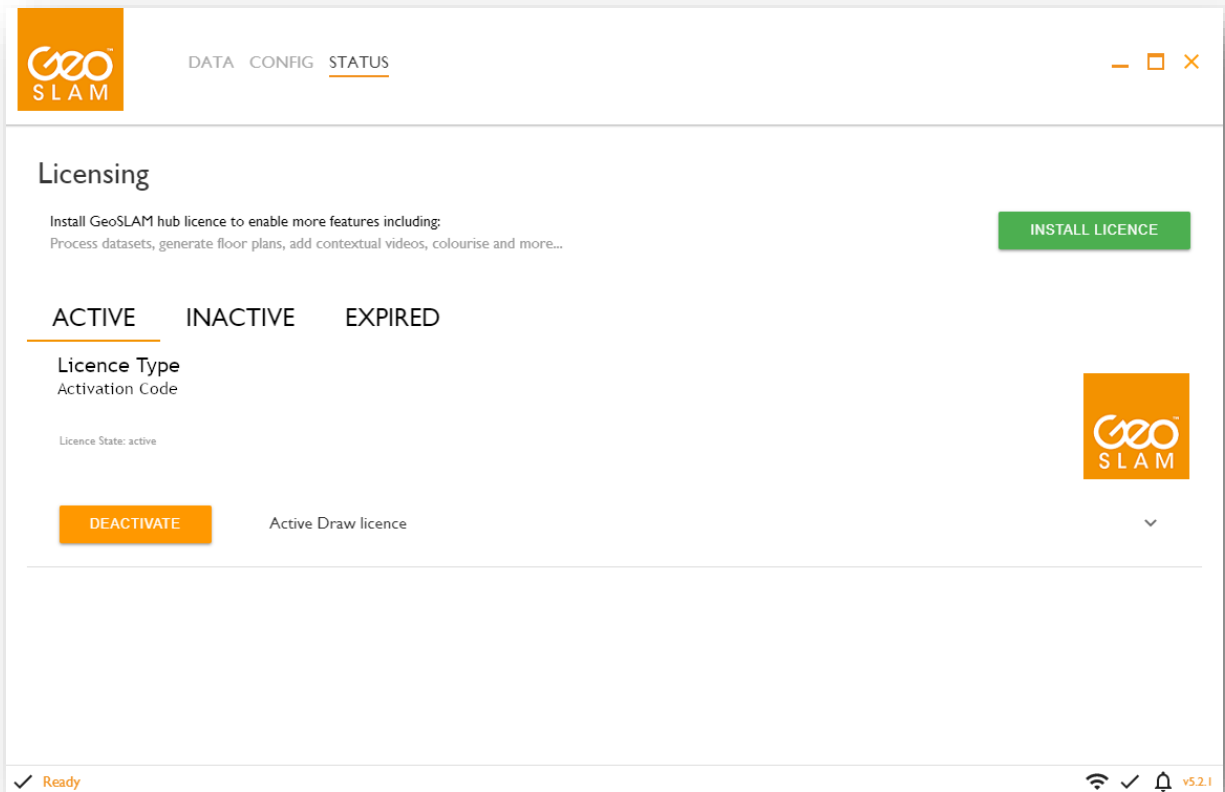
CONFIGURE HORIZON – Opens the processing options for Horizon datasets. Once values are changed within this, the **RESET HORIZON** button will appear orange. This will allow you to reset back to default settings.

CONFIGURE REVO - Opens the processing options for both REVO and REVO-RT datasets. Once values are changed within this, the RESET REVO button will appear orange. This will allow you to reset back to default settings.

However, when reprocessing from a dataset, the reprocessing options will override any settings applied. [See reprocessing section.](#)

10. STATUS tab

The Status tab shows all the information about the current state of your licence for GeoSLAM Hub. From here you can install a licence, check which licence is active, see details about the licence and deactivate the licence.



GeoSLAM Hub 5.3 now requires an activation code to licence the product, giving you more flexibility in the way you use your software.

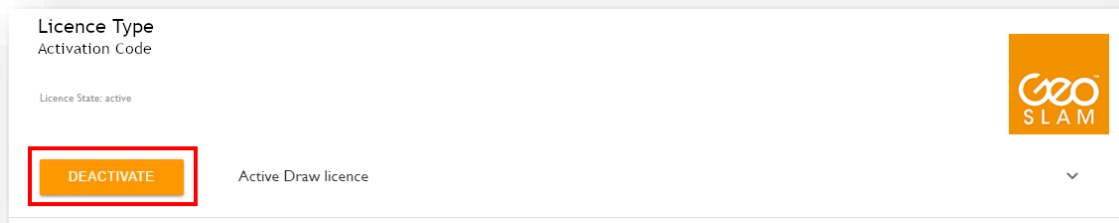
This will be a 32-character code, which is located on the software certificate from the Kingston USB stick shipped with your unit.

[See section 1.3](#) for more detailed information on installing the licence.

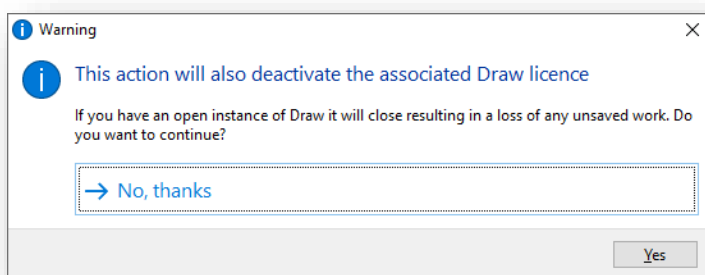
10.1 Using the check in/out feature

You can now use your GeoSLAM Hub licence across multiple machines, making it more flexible. There is no limit to the number of machines the licence is installed on, however it can only be used on one machine at a time.

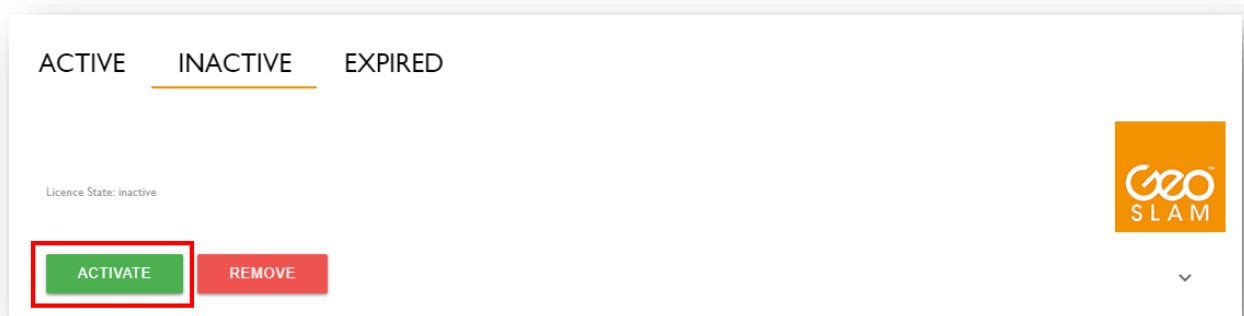
Once the licence has been installed, it will appear under the 'Active' tab. To deactivate this for use on another machine, click on the 'Deactivate' button.



This will bring up a pop-up message which highlights that you will also be deactivating your GeoSLAM Draw licence. When you re-activate the licence, you will be able to use the Draw licence again. Click 'Yes' to this message.



The licence will now be transferred to the 'Inactive' tab. You do not have to go through the process of installing this licence again on this machine. When the licence has been deactivated from another machine and is free to use, just click 'Activate' to use the licence again.

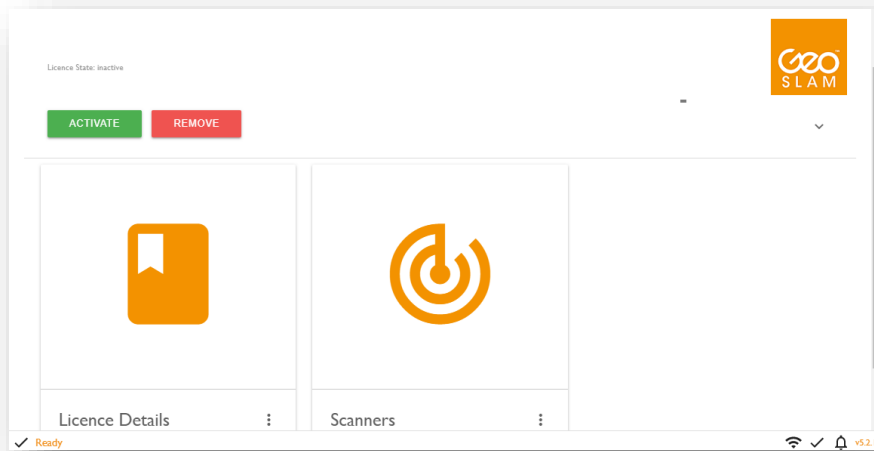


Please make sure a licence is deactivated (checked out) **before** another user tries to install it for the first time on another machine. If this is not done, the activation will fail.

The 'Expired' tab will show licences which have lapsed, for example a rental bundle licence.

10.2 Licence information

By clicking on the arrow on the right-hand side of the page, you can see more information about the licence that is currently installed and activated:



10.2.1 Licence details

Includes the following information:

- Activation code
- User type
- Last date eligible for software updates
- Draw licence type

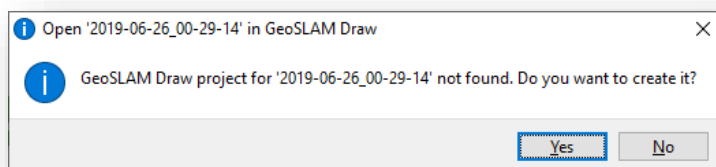
10.2.2 Scanners

Includes the following information:

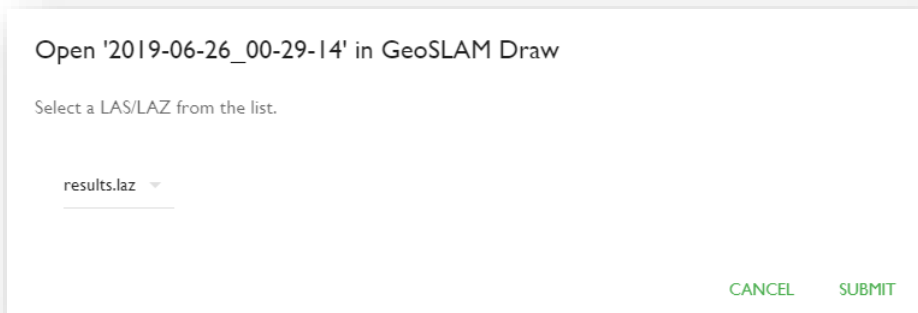
- Scanners – This shows the scanners which are linked to this licence
- Support – This shows the date your support will expire and how many days of support you have remaining

11. GeoSLAM Draw

The Draw button in GeoSLAM Hub generates a Draw project file and opens GeoSLAM Draw. If the Draw project does not exist, a prompt will appear asking you whether you'd like to create it.



Once you click Yes to create the project it will prompt to ask which LAZ file it should create the project for. Leave the default of results.laz selected and hit Submit.

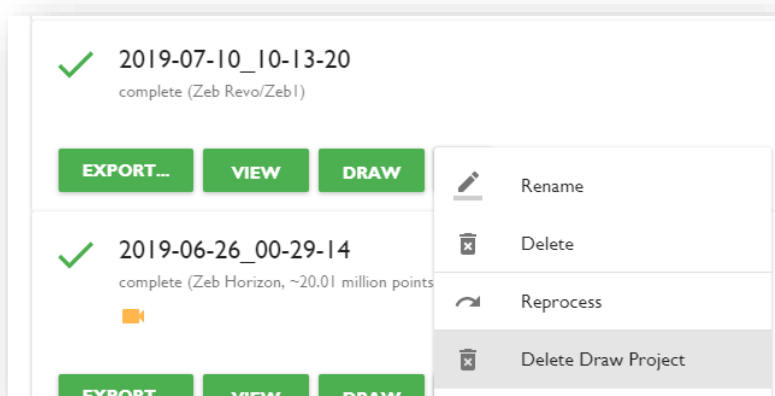


Once Draw has opened, the views are processed. This may take up to 30 seconds before the display is updated with the views, depending on the size of the scan.

For more information on how to use GeoSLAM Draw, please visit the GeoSLAM Academy online.

11.1 Deleting an existing Draw project

You can delete an existing Draw project by click the options button against the data (...)

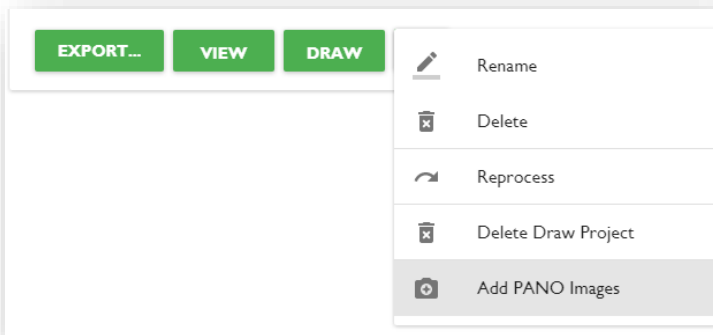


Now select 'Delete Draw Project'. You may create a new Draw project by clicking the Draw button after this.

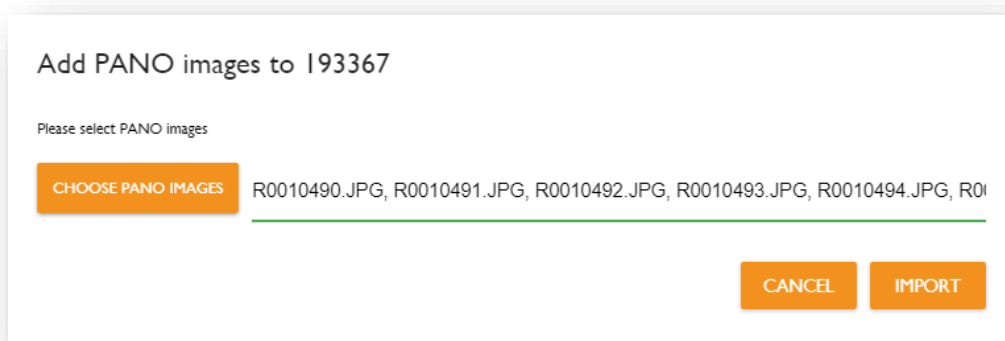
12. ZEB Pano

GeoSLAM Hub 5.3 supports processing ZEB PANO imagery against REVO data. For more information about our ZEB-PANO product please see <https://geoslam.com/zeb-pano/>

Click the options button on the dataset that has been used in conjunction with the ZEB-PANO and click 'Add PANO Images'.



Choose the panoramic images related to this particular scan.



Click IMPORT and wait for the PANO images to import. You can now go into GeoSLAM Draw and view your ZEB-PANO data.

13. Offline Licence Activation

GeoSLAM Hub 5.3 supports offline licence activation. This does not include access to GeoSLAM Draw offline, only Hub. Please contact GeoSLAM Support (support@geoslam.com) for offline licence activation.

However, if you are able to connect to the internet on your workstation initially while installing the licence, you are able to use GeoSLAM Hub in offline mode. The new offline licence activation method is suitable for users who cannot connect to the internet or are behind very strict firewalls.

14. Flag for Support

If you encounter a problem during data processing using GeoSLAM HUB and you have an up to date support and maintenance subscription you can upload the problem data set to the GeoSLAM Cloud processing server using the ZEB Uploader application.

After uploading to the Cloud server, a Flag Data icon can be activated to alert GeoSLAM support team that there is a problem with the data set. Problem data sets are investigated during regular UK office hours. A member of the GeoSLAM support team will contact you by email and advise why the error occurred and whether it has been possible to fix the data set.

To use the Uploader application, you must first have a user account on the GeoSLAM processing server. If you need help with installing this application or setting up a user account contact **support@geoslam.com**