

# Leica Geosystems Release Notes

**Product** Leica Cyclone REGISTER 360 2020  
**Date** 18 March 2020  
**From** HDS Software Product Management

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## What's New

This is a major release including support for the unstructured data of the new BLK2GO handheld imaging scanner. CCP dates have been updated accordingly. Please ensure that your CCP is up to date before updating to Cyclone REGISTER 360 2020.

### Support for the BLK2GO handheld imaging scanner

This release includes support for the new BLK2GO handheld imaging scanner.

The BLK2GO is a new scanning from Leica Geosystems which captures images and dimensionally accurate point clouds in real-time, using SLAM technology to record the user's trajectory through space.

The BLK2GO includes a new in-field mobile application, BLK Live, which tracks the user's position in real-time and provides 2D and 3D visualization while scanning, high-resolution image visualization (GeoTags) as well as device status such as battery or storage. Unlike Cyclone FIELD 360, BLK Live does not store project data.

The BLK2GO can be connected to Cyclone REGISTER 360 via Wi-Fi or USB cable. Once connected, Cyclone will show the Walks (unique capture events) listed in the import area.

The scanner has three panoramic cameras that are used to capture images every second which can be turned into panoramic setup locations along the trajectory (or walking path) of the scan. These images are also used to colorize the point cloud data. At import, the user will set an interval for how often these panoramic setups are created. The setups are known as WayPoints and are located along the scan path to show panoramic imagery for a more traditional setup location experience.

Upon import, Cyclone REGISTER 360 will import the point cloud data and pano images per user setting. The user can set the WayPoint creation every meter or more, along the trajectory. It is not necessary to create WayPoints to import BLK2GO data into Cyclone REGISTER 360.

The BLK2GO scanner also has one high-resolution detail camera. When the button is pressed, a 12-megapixel image will be captured from the front of the scanner. Upon import, the image is turned into a GeoTag which is accessible downstream in JetStream Viewer, TruView Enterprise and Cloud, the CloudWorx Family, Cyclone 3DR and Map360 via LGS files and JetStream Enterprise projects.

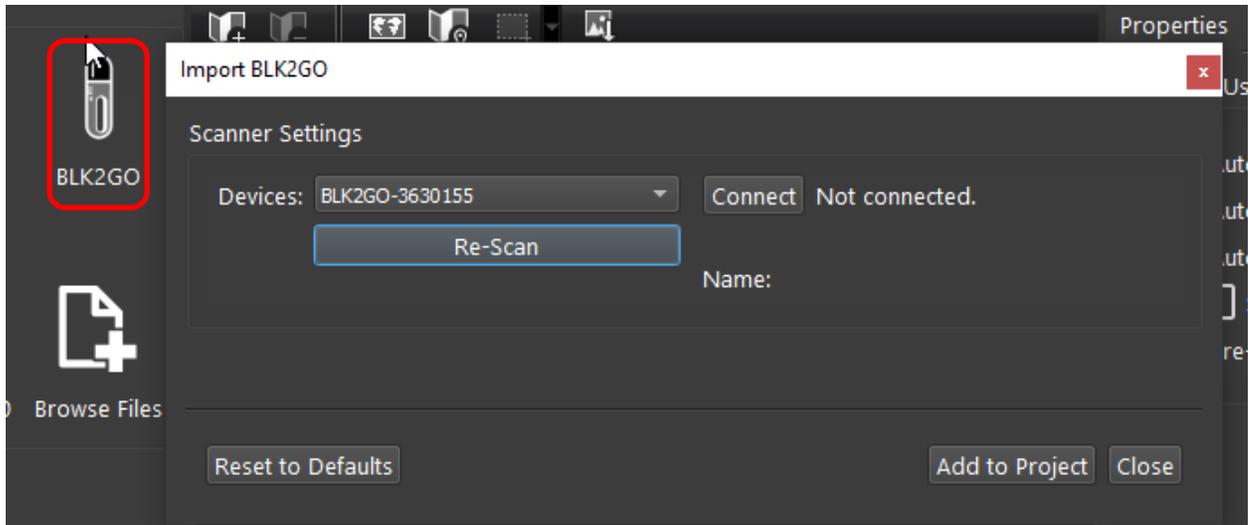
For more information about scanner operation please refer to the manual included with your scanner.

The BLK2GO scanner can also be connected to the BLK Live App for use on an Apple iPhone.

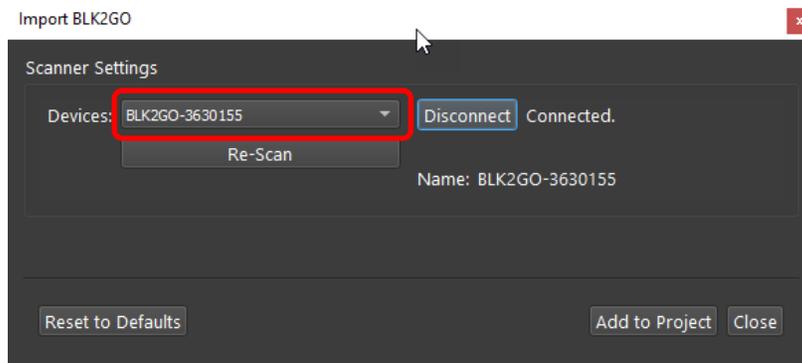
The below details the workflow for importing BLK2GO data into the Cyclone REGISTER 360 family of products:

#### WiFi import workflow:

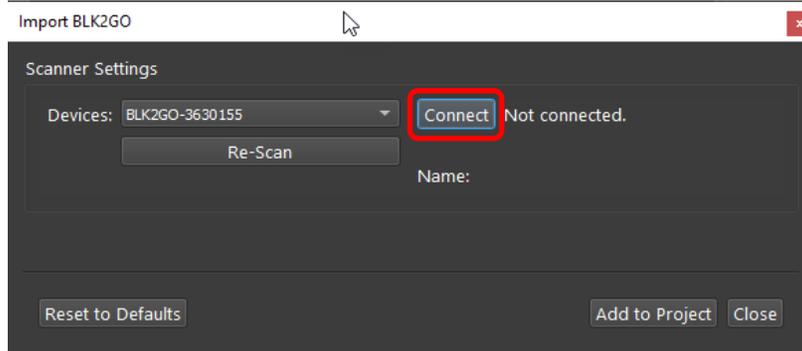
1. Connect to the wireless network of the BLK2GO scanner. SSID and password are listed in the battery compartment of the scanner.
2. Once connected, open Cyclone REGISTER 360 Standard or BLK Edition and create a project.
3. Click on the BLK2GO button to open the connection dialog:



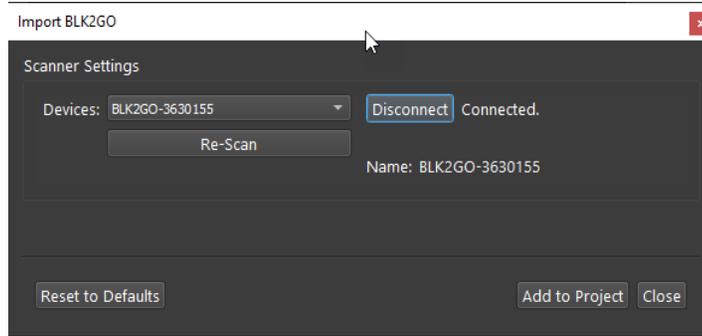
4. The available scanners will be listed by serial number.
  - o If the dialog is open before a WiFi connection is made, use the **Re-Scan** button to detect scanners.



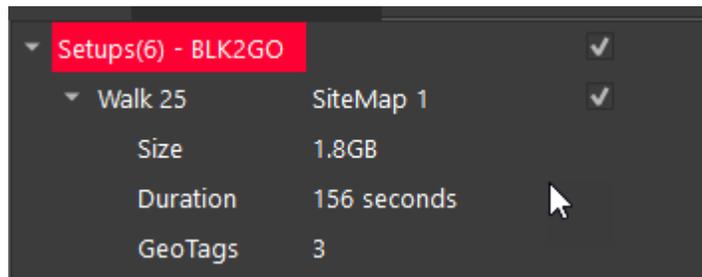
5. Click the **Connect** button to establish a connection to the scanner.



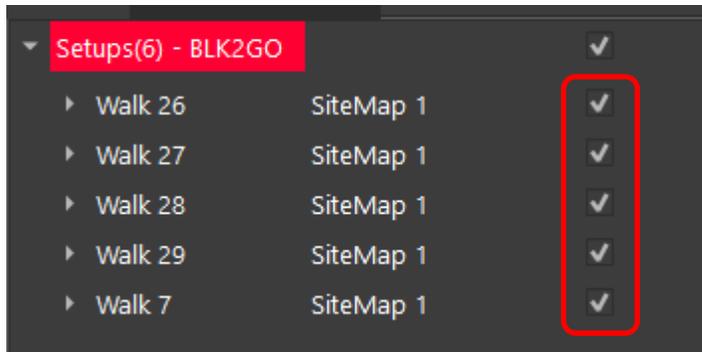
6. Then click the **Add to Project** button. This will display all available Walks to the import panel.



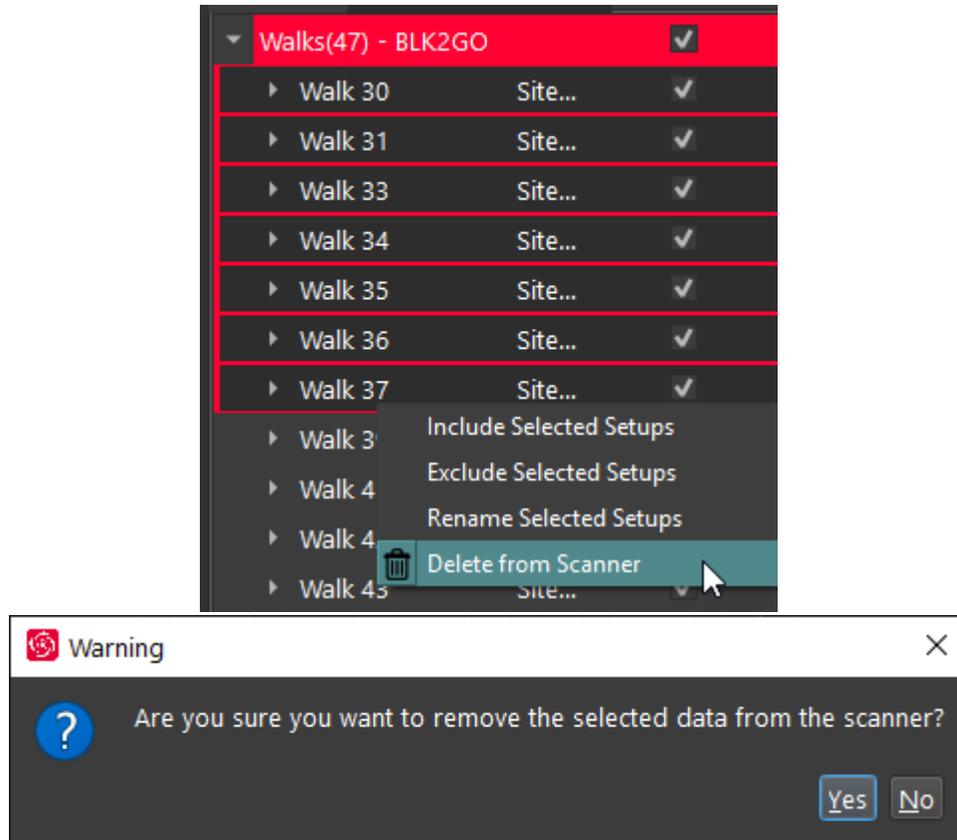
- Listed under each Walk is its data size, duration and the number of GeoTags it contains:



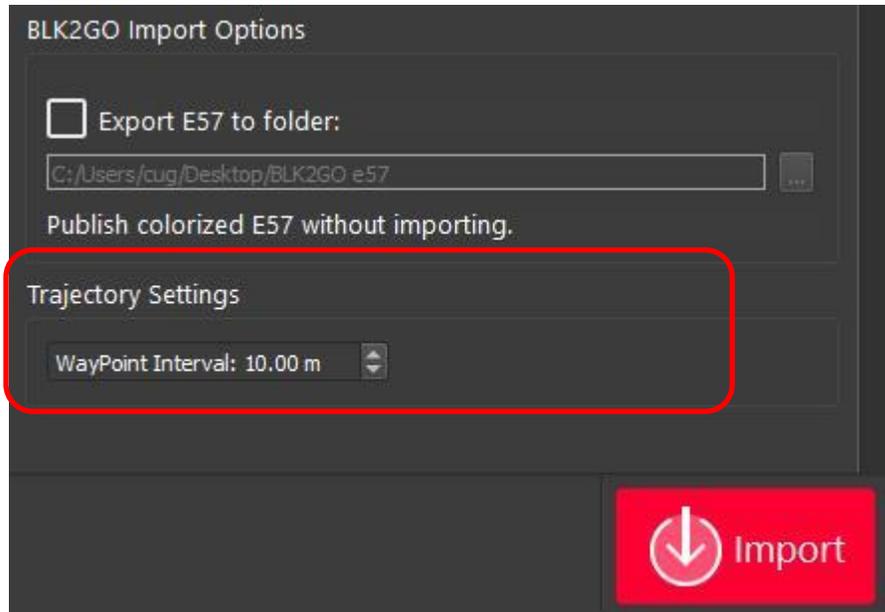
7. Select the Walks to import by using the check boxes to the right of each Walk.



8. Walks can be deleted from the scanner by right clicking selected Walks.



9. Then, on the lower right side of the import area, select the interval for WayPoint creation
  - The default is one WayPoint every 10 meters.
  - WayPoints are inserted Setup positions that only contain pano image data.
  - The shorter the interval, the more WayPoints will be created.
  - Each WayPoint will increase import time.
  - When finished there will be one-point cloud with several WayPoints that contain panoramic image data from a position along the trajectory.



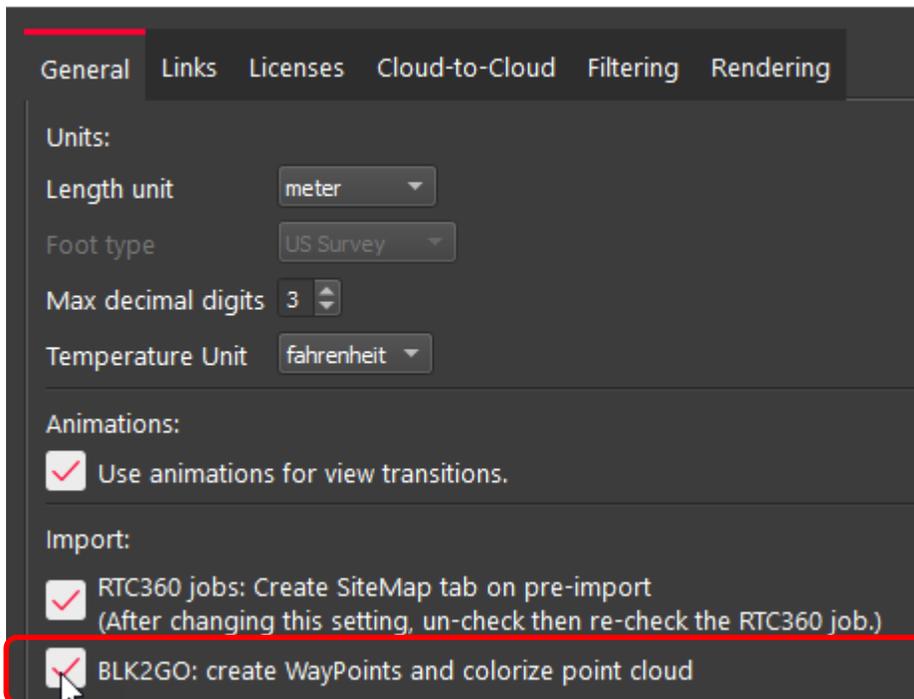
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**Note: increasing the number of WayPoints during import will result in longer import times.**

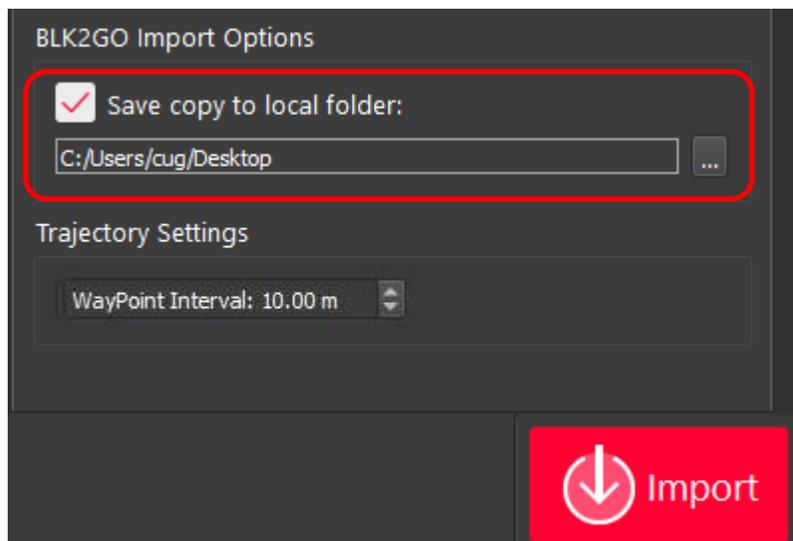
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- To save time importing BLK2GO data there is an option to import the data without colorizing the data or creating Waypoints that contain panos. To use this setting:
  - Go to the **Settings** and under the General tab un-check: **BLK2GO: create WayPoints and colorize point cloud.**

 Settings



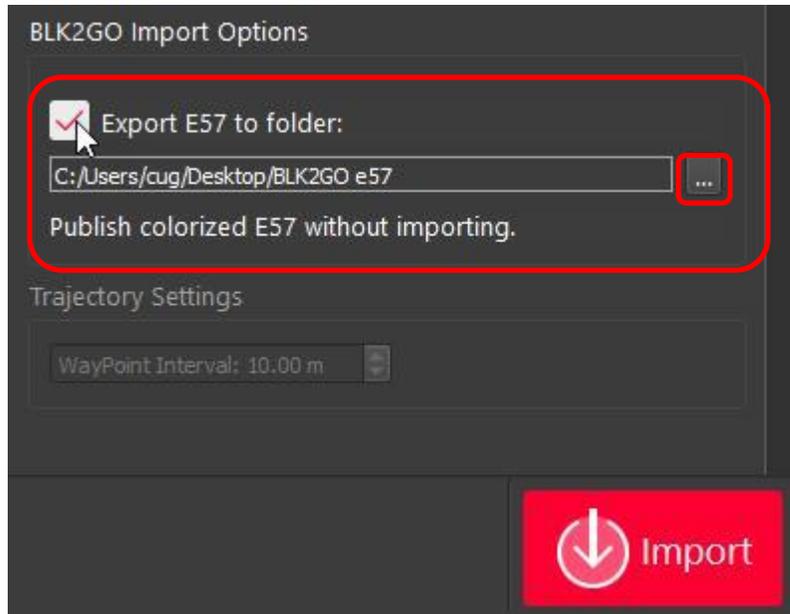
10. Click the **Save copy to local folder** check box and then select a download location using the browse button to save a local copy of the scanner data to disk. The file extension is \*.b2g.
  - o Note: This step is not necessary but recommended as best practice. Please always store a backup of your raw data.



11. Click **Import** to begin the import process
12. Another import option is to create an E57 file directly from BLK2GO data in the import area. Using this option creates a colorized E57 from BLK2GO data BUT **DOES NOT IMPORT THE DATA** into Cyclone REGISTER 360.

To use:

  1. Connect to scanner or load a \*.B2G file into the import panel.
  2. Click the **Export E57 to folder** check box located in the lower right panel of the import area.
  3. Select a location on disk to write the E57 file.



4. Click the Import button to begin the process
5. An E57 file will be created.
6. The BLK2GO data will not be imported into Cyclone REGISTER 360
  - To import simply follow the regular import process

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***The E57 file created CANNOT be imported into REGISTER 360 2020 or earlier as the data is unstructured. Currently only unstructured data from a BLK2GO scanner is supported.***

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#### **Cable connection import workflow:**

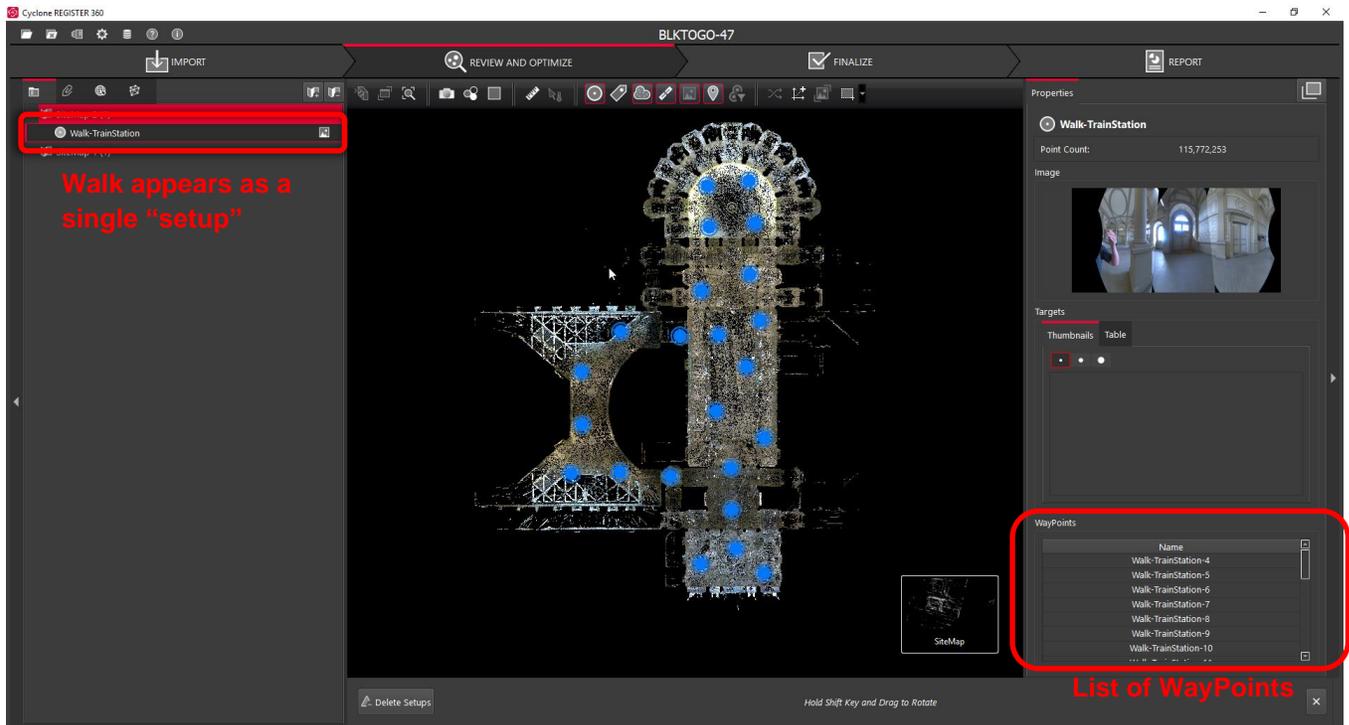
1. Connect the included cable (USB A to USB C) to the scanner. The connection is in the battery compartment of the scanner:



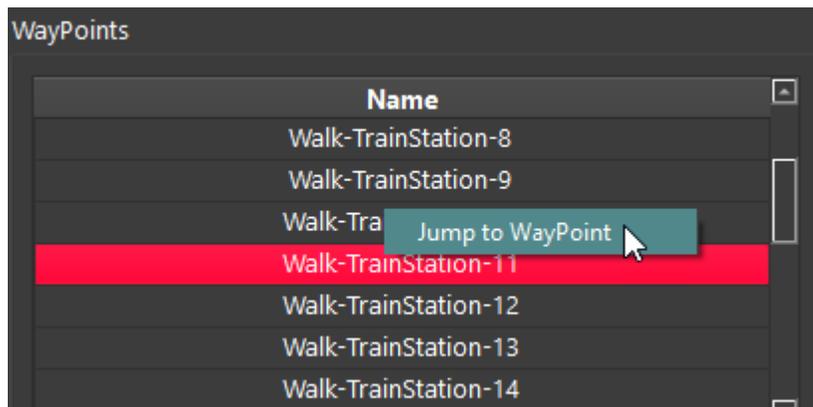
2. Connect your scanner to your computer.
3. Continue with data download and import beginning with Step 2 in the WiFi workflow above.

### Review and Optimize BLK2GO workflow

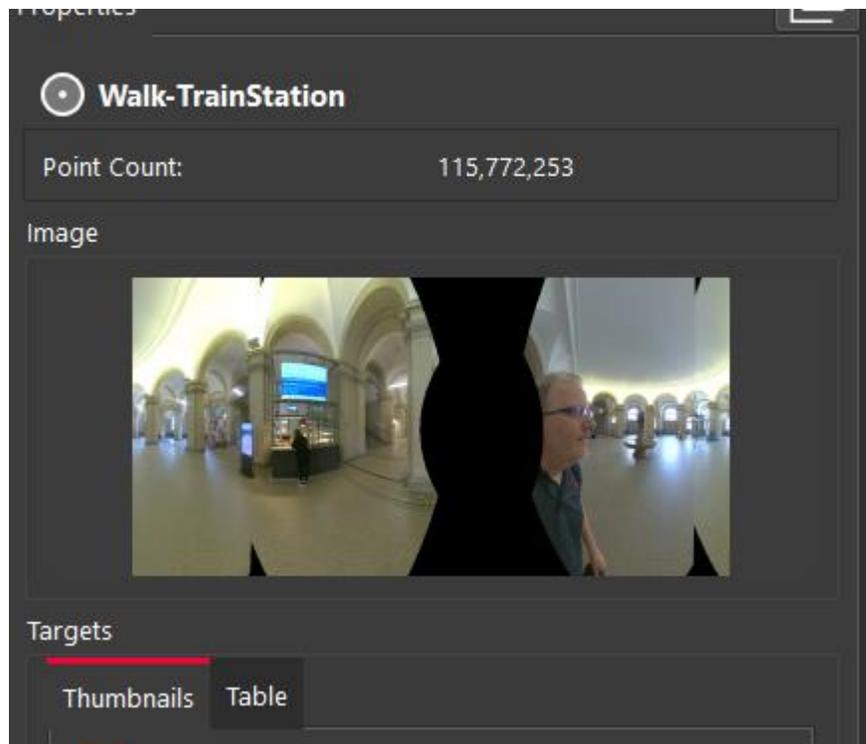
The BLK2GO Walk (a unique BLK2GO capture event with images and GeoTags) will appear in the SiteMap area as a single setup with the number of WayPoints determined by the user-defined settings during import.



- Each WayPoint contains a panoramic image to support traditional visualization options. The WayPoint locations are listed in the right panel under WayPoints.
  - Fly into a selected WayPoint from the right-side menu by right clicking WayPoints and selecting **Jump to WayPoint:**



- Scroll through all WayPoints using the up and down arrow keys on the keyboard.
  - The Image will change in the right-side panel showing the different WayPoint preview images:



Each WayPoint has the following abilities:

- Fly into the point cloud to view panoramic images and the point cloud.
- Selection in the SiteMap to Pan and Rotate scan
- Selection in the SiteMap area with another Setup to perform registration by:
  - Visual Alignment
  - Target matching (with inserted targets)
  - Registration to another BLK2GO Walk or scanner Setup (e.g. RTC360, BLK360, P-Series, C-Series, 3rd party scans)
- Publish to Jetstream Enterprise, LGS file(s) and TruView as Panoramic image setup locations

Visual Registration with BLK2GO data is performed in the same manner as for any other data imported into Cyclone REGISTER 360.

1. In the SiteMap area, select a single Setup or WayPoint and then Multi-Select another Setup or WayPoint.
  - Fence selection will also work to select the desired Setups and WalkPoints.
2. Move the Setup and/or Walk into the proximity of another to make suggested links appear.
  - Select a suggested link to enter the desired registration type.
3. Click the Visual Alignment button on the action bar to enter Visual Alignment.



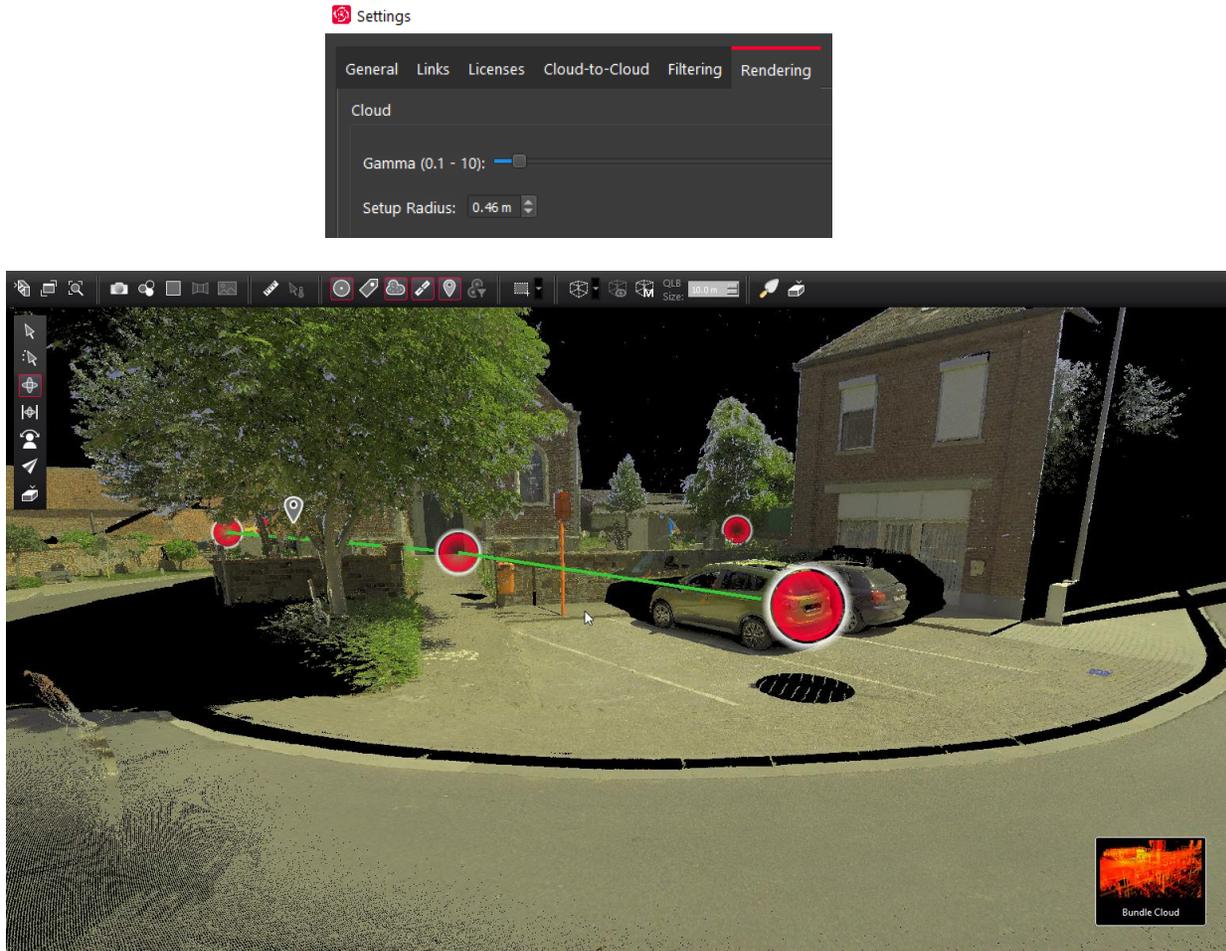
*Two selected objects shown. One is a Setup and the other is a WayPoint. Once selected, various methods can be used to join the scans together.*

### **New sphere icon for Setups and Walks**

The look of Setup position icons has been modernized across the Laser Scanning Software portfolio in keeping with the streamlined UI of the next-generation products. Yellow 3D tetrahedron and 2D triangle Setup markers have been replaced with red spheres and circles respectively. All scanner data imported into Cyclone 2020 will display spheres. Likewise, old projects will now display spheres once opened with the latest version.

The new sphere setup marker will also appear in Cyclone, JetStream Viewer, TruView Enterprise and TruView Cloud and in CloudWorx in TruSpace.

The size of the sphere can be changed in the Settings Menu under the Rendering tab:



## New Cyclone PUBLISHER Family support

With the 2020 release of the Laser Scanning Software portfolio, Leica Geosystems will have simplified its Cyclone PUBLISHER Family and now offers two PUBLISHER licenses:

- Cyclone PUBLISHER
- Cyclone PUBLISHER Pro

Cyclone TruView PUBLISHER and Cyclone JetStream PUBLISHER will be replaced by Cyclone PUBLISHER and Cyclone PUBLISHER Pro which provide greater flexibility and several desirable features. This simplified PUBLISHER landscape will ensure that all users are working with the most modern and complete files possible and retain access to the full suite of Leica Geosystems software currently available to them.

Both PUBLISHER licenses will write LGS files which can be consumed downstream in Cyclone, Cyclone 3DR, JetStream Enterprise, JetStream Viewer, the CloudWorx suite, TruView Enterprise and Cloud, and Map360. Cyclone PUBLISHER will also publish ReCap files and a multiple pano layers (including IR imagery from the BLK360), all of which were previously only available with Cyclone PUBLISHER Pro.

With this move, historic formats, JSV and TVG, will no longer be published by the Cyclone REGISTER 360 Family, Cyclone or JetStream Admin, though JetStream Viewer and TruView Enterprise and Cloud will continue to accept them (respectively) indefinitely. TruView Local files will continue to be a publish option for the time being.

Projects stored in JetStream Enterprise which could formerly be written to JSV will now be written to LGS. If a project is missing any data required for the LGS format (such as a SiteMap from old projects published to JetStream Enterprise 1.4.2 or earlier, or from Cyclone 9.2.2 or earlier and from Cyclone REGISTER 360 1.4.3 or earlier), the user will receive a message stating that data is missing and the LGS cannot be produced. We recommend re-publishing such projects directly to LGS from Cyclone or the Cyclone REGISTER 360 Family to ensure a complete project file.

Additionally, for users who currently own either Cyclone TruView PUBLISHER or Cyclone JetStream PUBLISHER with current CCP (including TimeLimited, Education, EnterpriseElite, and Subscription licenses which include CCP), their current licenses will now be treated by the publishing software as Cyclone PUBLISHER Pro. Upon the expiration of a user's CCP or TimeLimited, Education, EnterpriseElite, or Subscription license(s), the user should officially migrate to Cyclone PUBLISHER Pro by contacting their sales or support representative and providing their EID(s). Each permanent seat of either Cyclone TruView PUBLISHER or Cyclone JetStream PUBLISHER can be migrated to a new, free of charge seat of Cyclone PUBLISHER Pro with the purchase of CCP for Cyclone PUBLISHER Pro.

CONTENT PUBLISHED	CYCLONE PUBLISHER	CYCLONE PUBLISHER PRO
TruView Local dataset	◆	◆
JetStream Enterprise Project	◆	◆
Direct publish to TruView Cloud	Controlled by TruView Cloud subscription	Controlled by TruView Cloud subscription
LGS file	◆	◆
LAS file		◆
RCP file*	◆	◆
Pano image as EXR & JPG		◆
Project name	◆	◆
Project creation date	◆	◆
Project creator info	◆	◆
Project stats metadata	◆	◆
SiteMap(s)	◆	◆
Control	◆	◆
Setups + Metadata	◆	◆
Multi-layer pano image	◆	◆
RGB pano image layer	◆	◆
HDR pano image layer	◆	◆
Intensity Hue pano image layer	◆	◆
Intensity Grayscale pano image layer	◆	◆
IR pano image layer + Temperatures	◆	◆
Models as part of RGB pano image layer		◆
Pano depthmap	◆	◆
3D point cloud	◆	◆
RGB attributes	◆	◆

<b>Intensity hue attributes</b>	◆	◆
<b>Grayscale attributes</b>	◆	◆
<b>HDR attributes</b>	◆	◆
<b>Multiple UCS'</b>	◆	◆
<b>Clips</b>	◆	◆
<b>GeoTags + Metadata</b>	◆	◆
<b>Assets</b>	◆	◆
<b>Image</b>	◆	◆
<b>Video</b>	◆	◆
<b>Audio</b>	◆	◆
<b>PDF</b>	◆	◆
<b>Text</b>	◆	◆
<b>Publish Sub-selection: Limit Box content only</b>		◆
<b>Publish Sub-selection: Selected Setups only</b>		◆

\* RCP files can be produced from Cyclone REGISTER 360 (BLK Edition) without an additional PUBLISHER license.

## Smooth Surface cleaning and ground finding tool

Cyclone REGISTER 360 2020 introduces a new option for semi-automatic cleaning. The new Smooth Surface tool will find continuous ground surfaces in all data types supported by Cyclone REGISTER 360. After running Smooth Surface, the user will be presented with “good” (smooth surface) and “bad” (non-smooth surface) points which they can then keep or discard by either fencing off selected areas for removal or removing all “bad” points. The cleaned point cloud can then be exported to supported formats.

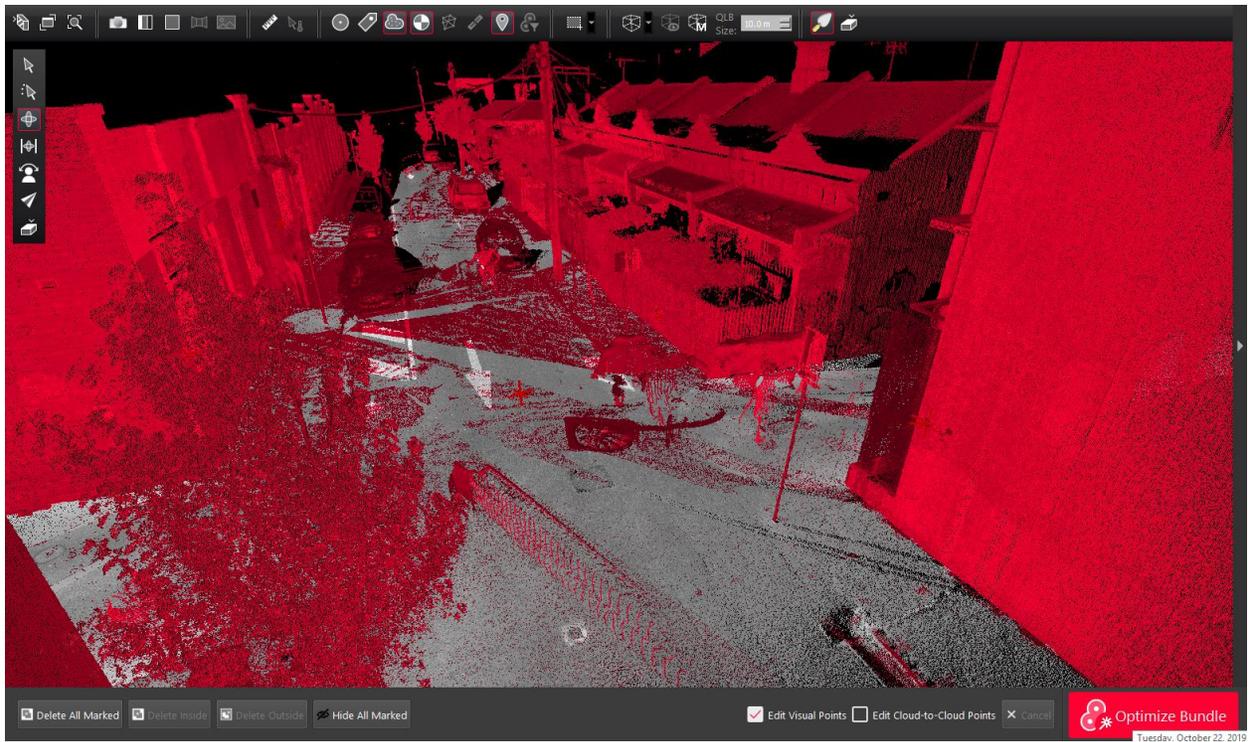
Smooth Surface cleaning works rapidly on projects of all sizes by detecting the overlapping points only in the region specified by the user and works on both single Setups and Bundles. Unification of the data is not necessary. Once initial results are delivered, additional picks will refine the results.

Deleted points can be restored; however, restoring points will result in the restoration of *all* points.

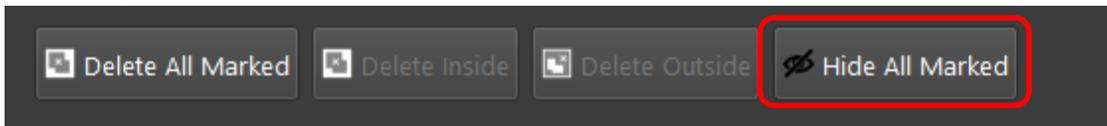
1. Open a project containing a bundle of Setups
2. Go to **Bundle Cloud** view or **Setup Cloud** view
3. Click on the icon located in the middle tool bar on the right. The tool tip is **Find Smooth Surface**.

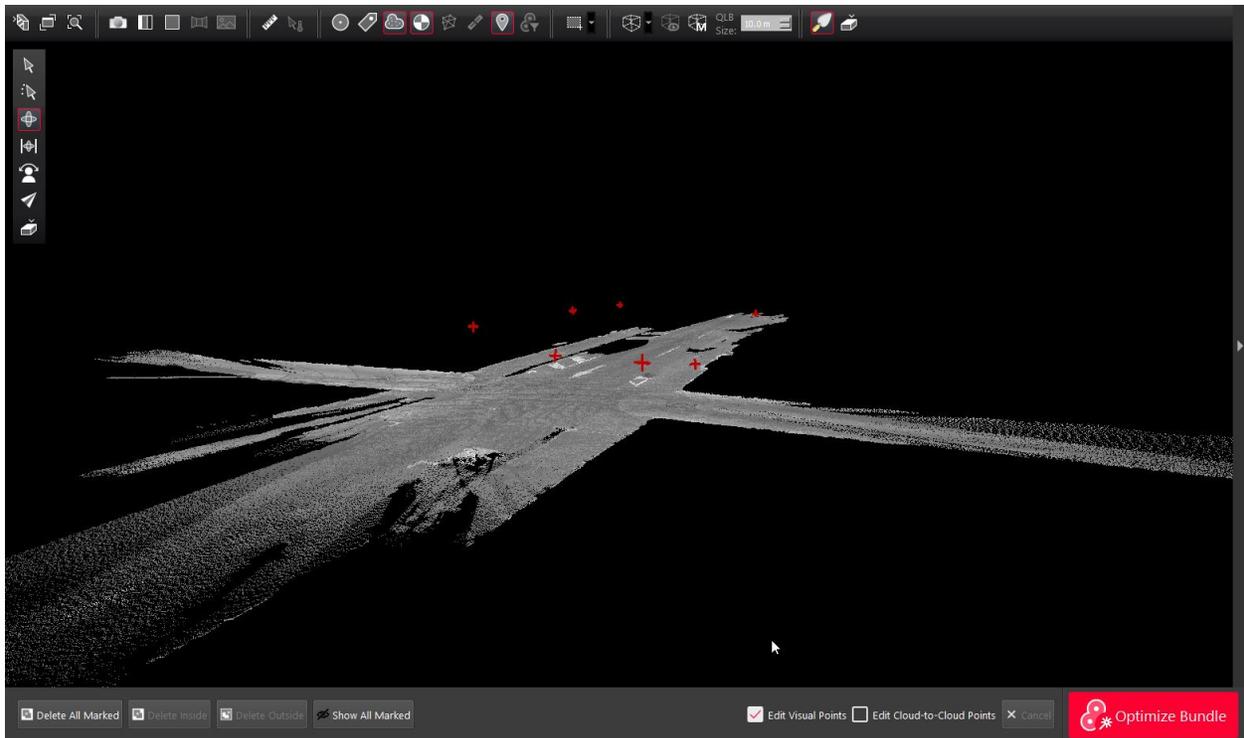


4. If the data was imported in Cyclone REGISTER 360 version 2020 or higher then there is no preparation step, otherwise the data will go through a preparation phase. The length of the preparation phase will depend on the size of your data.
5. The color mapping will turn to Greyscale.
6. Double click on a central location on a representative surface to begin the detection process.
7. The detection process will run and expose the initial smooth surface result in greyscale while the non-surface data or “bad points” are shown in red.

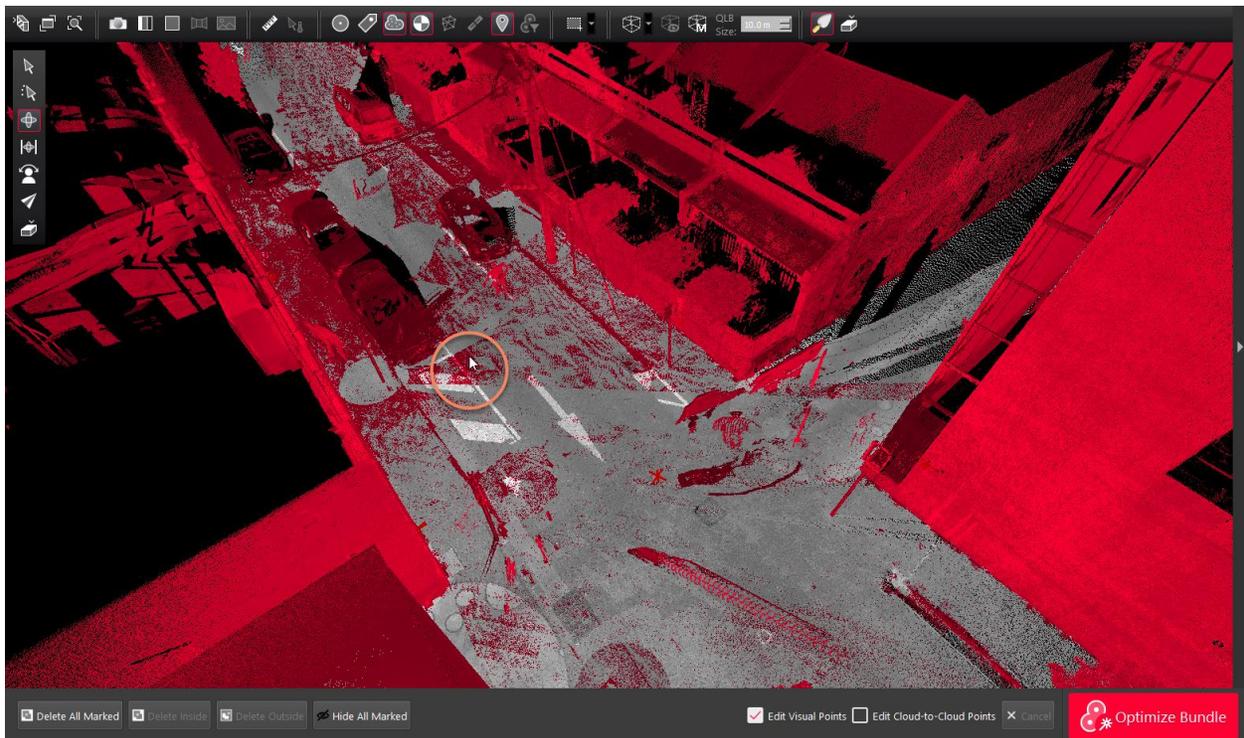


8. Use **Hide All Marked** to see how the detection is working, click **Hide All Marked** again to expose the red marked points.



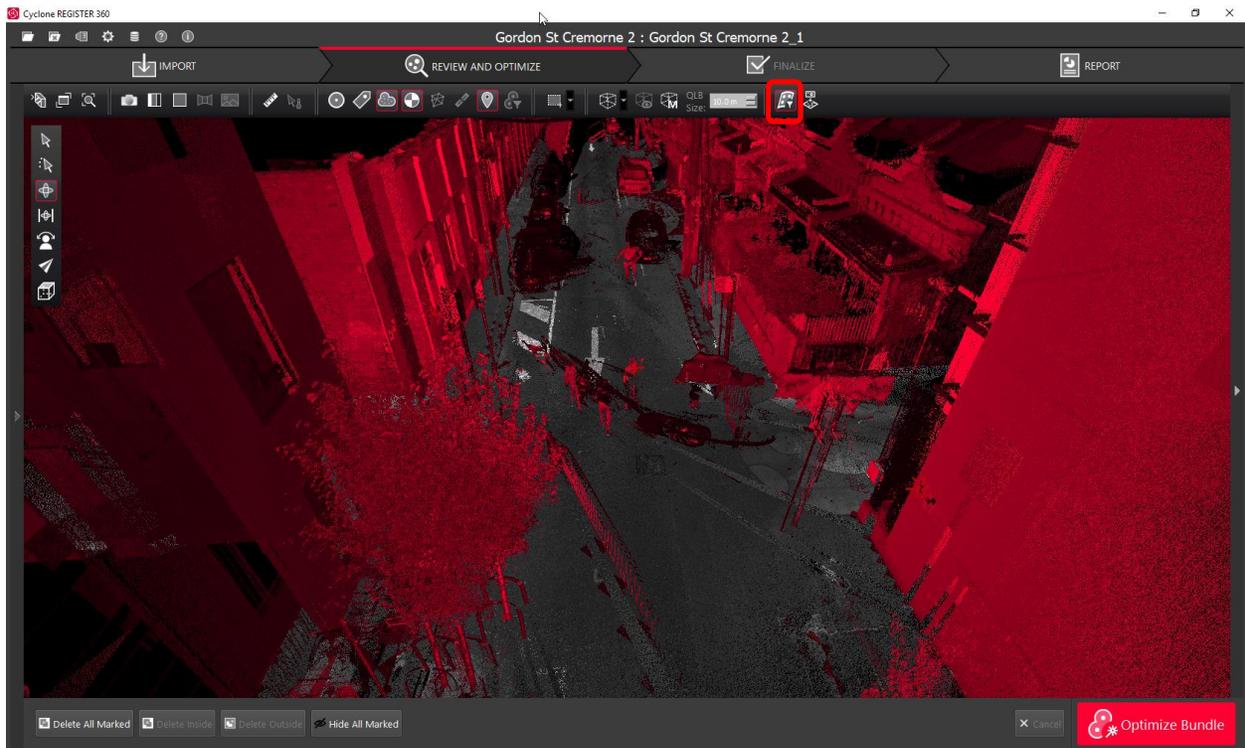


9. Next, click on the areas that have overlapping red and grey points to refine the results in those areas.

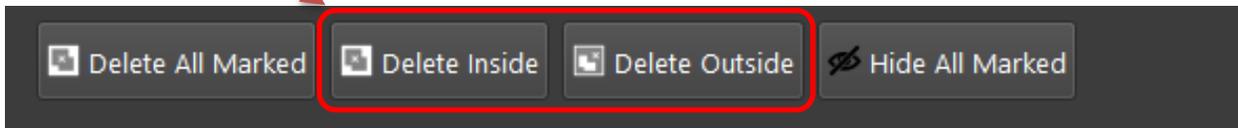
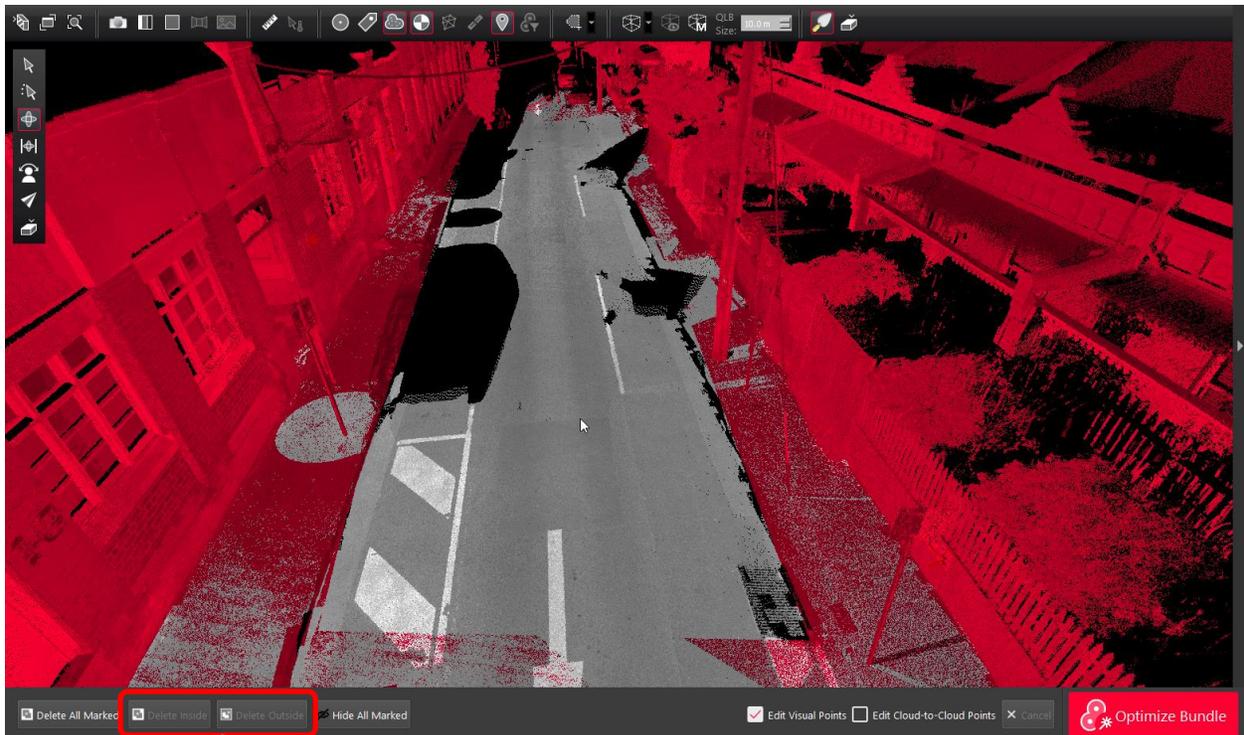


10. Continue this process until the desired smooth surface is fully detected.

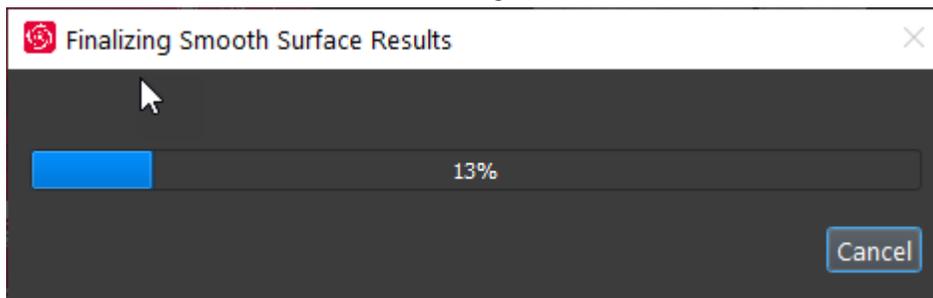
11. Next, using the standard fencing tools, fence desired area and then use Delete Inside or Delete Outside of Fence to remove only the red marked points.



- Click **Delete Inside** or **Delete Outside** to remove the red marked points depending on your fenced selection.



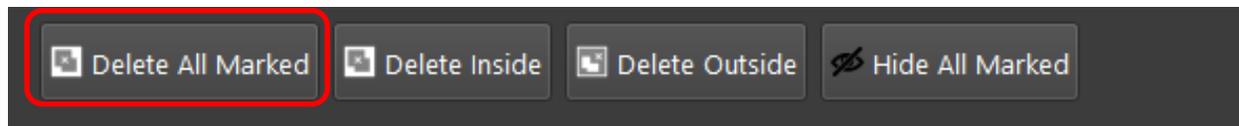
- To finish the process and combine the greyscale smooth surface with the desired red-marked points not chosen for deletion, click the smooth surface icon again.

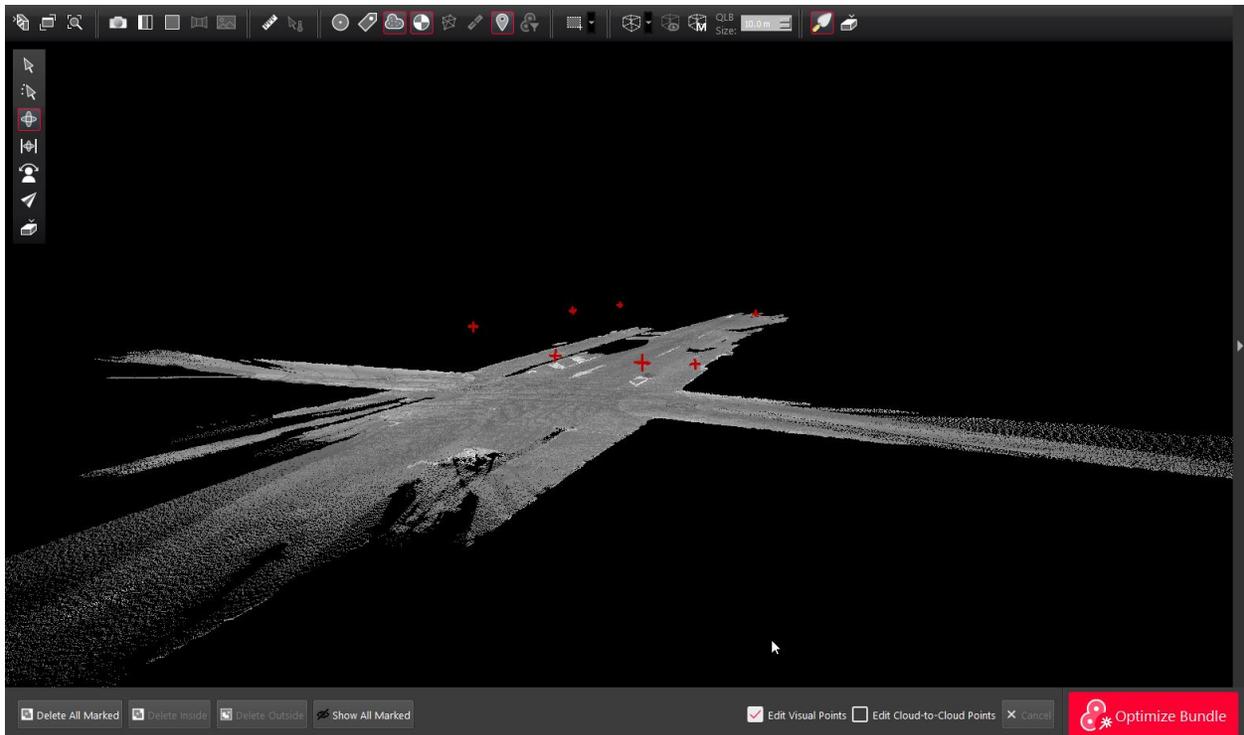


- The final cloud will be shown.



- To undo the cleaning select the relevant Setups and right click and use the **Restore** command
12. Alternatively, you may choose **Delete All Marked** after step 10 above to accept the results as-is and delete all the red points.
- Click the Smooth Surface icon again to finalize the results.



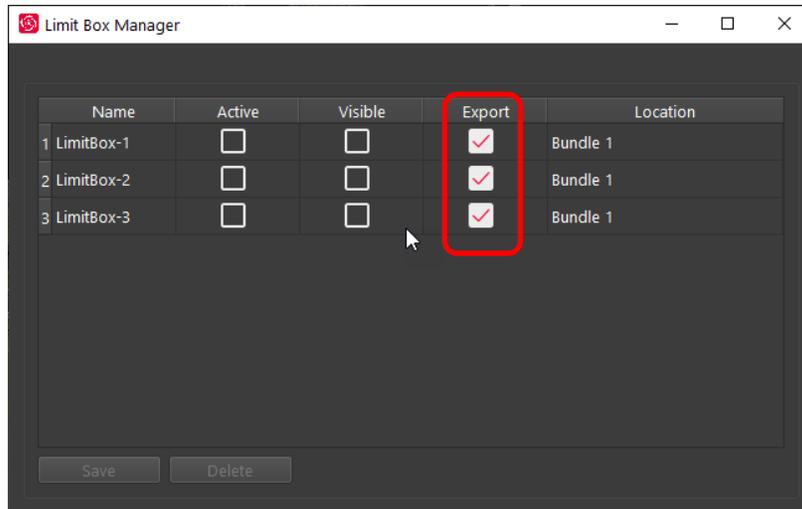


## Publish points by Limit Box

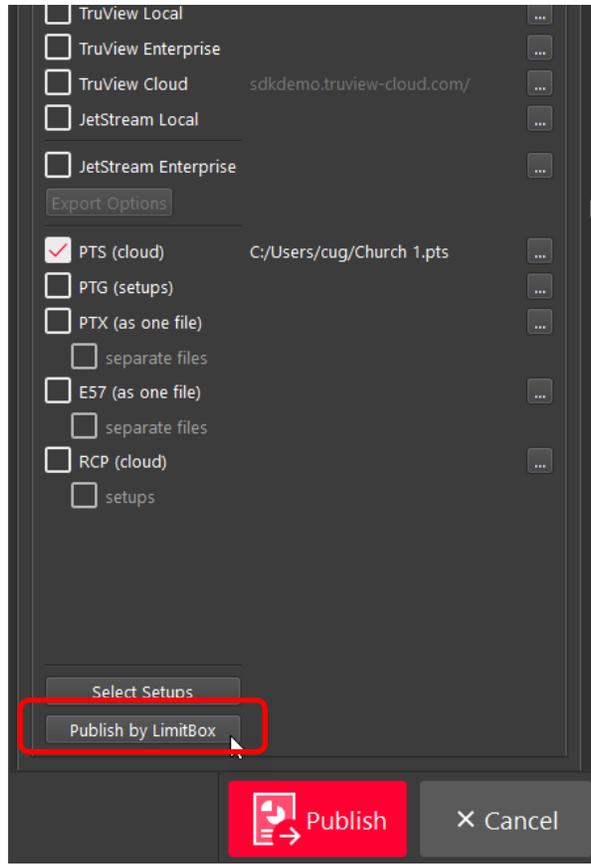
Users with a Cyclone PUBLISHER Pro license can now choose to publish only the points inside of existing Limit Boxes to E57, PTS, PTX, PTG and RCP as a single cloud. Publishing only a Limit Box allows users to selectively reduce the size of an export to only a certain area of interest and speed the publishing process.

Points exported by Limit Box will be exported as unstructured data.

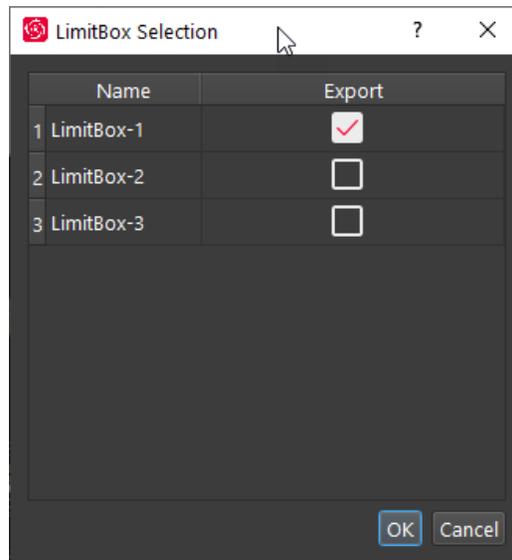
1. Create Limit Boxes per normal procedure
2. Save Limit Box and select the Export check box



3. Proceed through Finalize to the Report area
4. Select the desired publish format. The following formats are supported:
  - PTS
  - PTG
  - PTX
  - E57
  - RCP
  - Note: publishing the contents of Limit Boxes is not supported for LGS files, direct publish to TruView Cloud or JetStream Enterprise at this time
5. Click **Publish by LimitBox**.



6. Select the desired Limit Boxes to publish and click the OK button.



7. Proceed to the Publish step to complete the process

**Note: All points published this way will be in an unstructured format so the export WILL NOT import back into Cyclone REGISTER 360 2020 or earlier. The Cyclone**

**REGISTER 360 family currently only support unstructured data from BLK2GO scanners.**

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**Note: Limit Box publishing is NOT supported for LGS, JetStream Enterprise, and TruView**

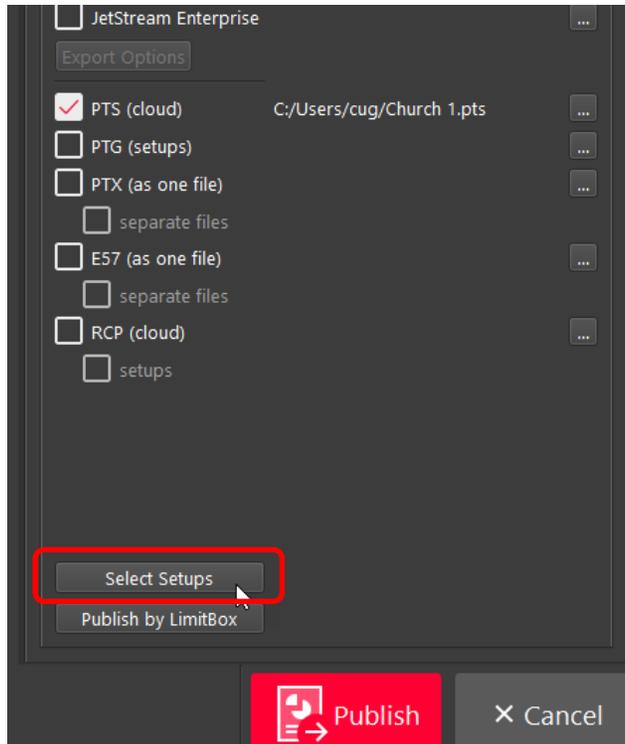
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## **Publish only selected Setups**

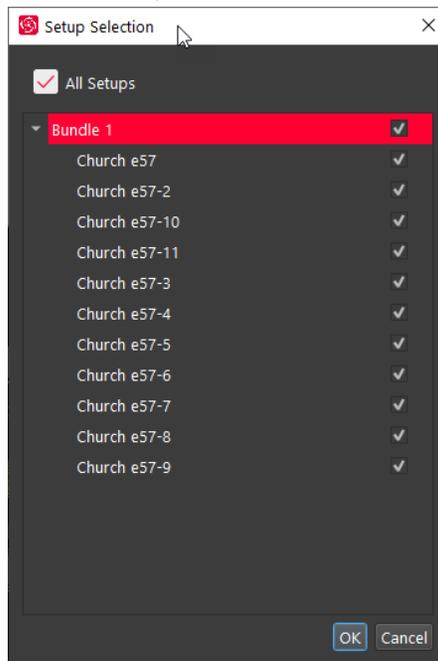
Users with a Cyclone PUBLISHER Pro license can now choose to export only the points belonging to certain Setups to E57, PTS, PTG, PTX and RCP as a single cloud. This new tool enables users to refine the data they publish by only including selected setups.

Publishing only certain Setups allows users to selectively reduce the size of an export and speed the publishing process.

1. Open a project containing a Bundle.
2. Proceeded through the Finalize area to the Report area.
3. Select the desired publish format. The following formats are supported:
  - PTS
  - PTG
  - PTX
  - E57
  - RCP
  - Note: publishing the contents of a sub-selection of Setups is not supported for LGS files, direct publish to TruView or JetStream Enterprise
4. Click on the **Select Setups** button.



5. Select the Setups to publish from the dialog and click **OK**.



6. Only the selected Setups will be published.

***Note: This feature is NOT supported for LGS, JetStream Enterprise, and TruView***

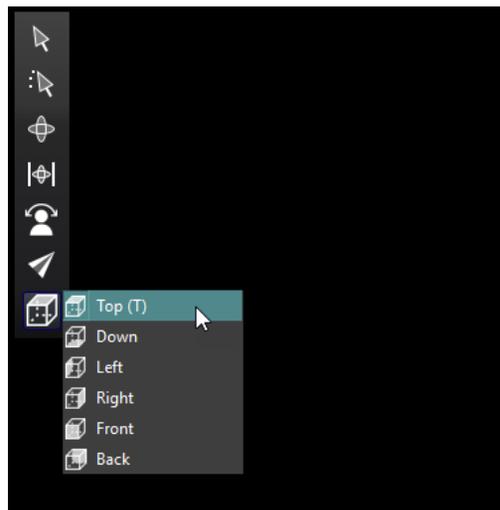
## Cyclone PUBLISHER Pro license selectively consumed

Cyclone REGISTER 360 will now only consume a Cyclone PUBLISHER or Cyclone PUBLISHER Pro license during the publish process to LGS, TruView Enterprise or Cloud and JetStream Enterprise; previously Cyclone REGISTER 360 consumed the license at startup and did not release it till closing the application.

## New viewing direction tools

New options are now available which let the user switch between orthographic views of their data for front, rear, left, right, top and bottom for rapid visualization. Users must set their UCS for proper orthographic orientation.

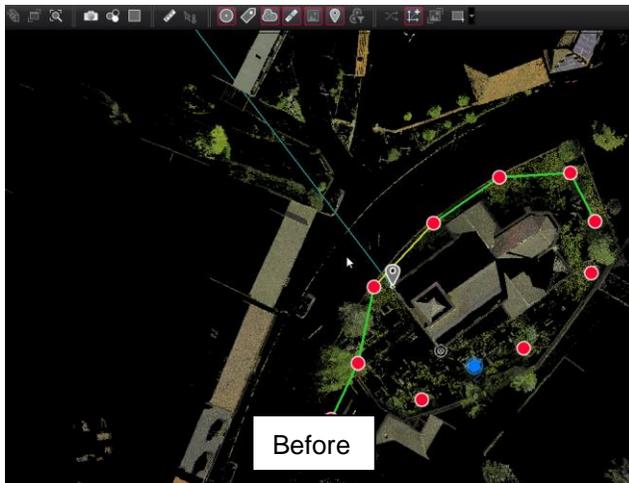
The new viewing directions can be accessed from the Bundle Cloud view.



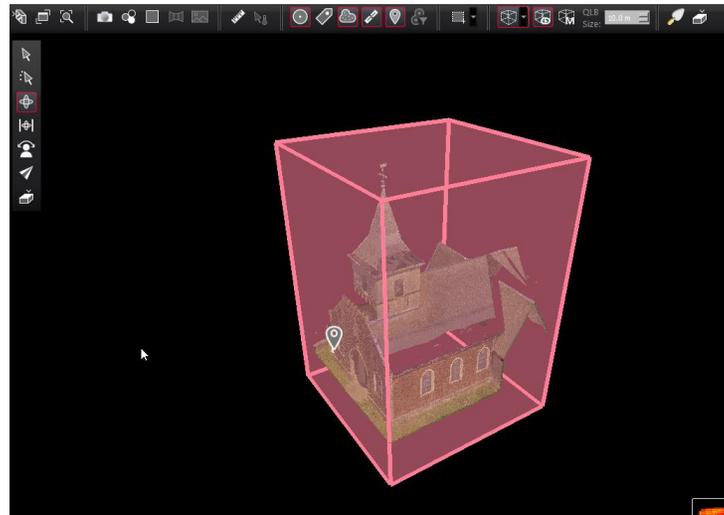
## Ortho Section image

From the Bundle Cloud view users can now create and export an orthographic image similar to the tool added to Cyclone 9.3. The image will be created with an attached DXF file for easy loading into AutoCAD and other format-supporting programs. The calibration information written into the DXF and image file ensure that the orientation and measurements will match the point cloud.

1. In SiteMap view use the UCS tool to square the bundle to the XYZ axis for proper orthographic orientation.



2. Then view a Setup or Bundle in Setup Cloud or Bundle Cloud view
3. Use the view direction tools to adjust the view (top, bottom, left, right, front, back)
4. Create a Limit Box and set the size around the area of interest.



5. Open the Limit Box manager and save the Limit Box

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***Note: The Limit Box must be saved in the manager for it to be used with Ortho Image section.***

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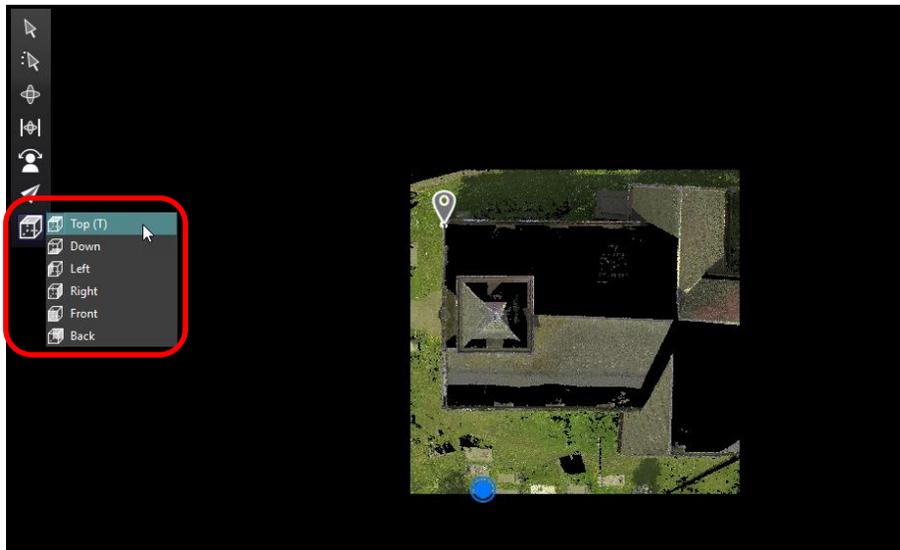
***Note: A Limit Box must be used to constrain the extents of the Ortho image***

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6. Turn off the visibility of the Limit Box



- Then, for an Ortho Section image of the object, use the Top Ortho view tool.



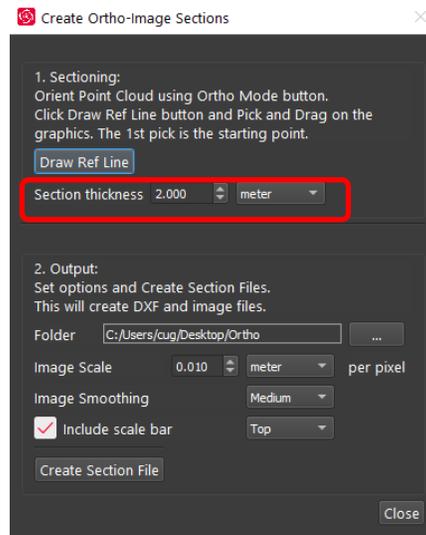
7. From the upper toolbar select **Create Ortho Image**



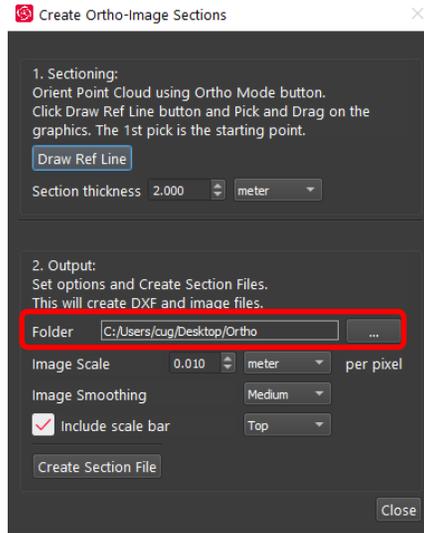
8. Click **Draw Ref Line**, then using left click and drag, draw a line with the direction arrow facing the front of the church.



9. Set the slice thickness.

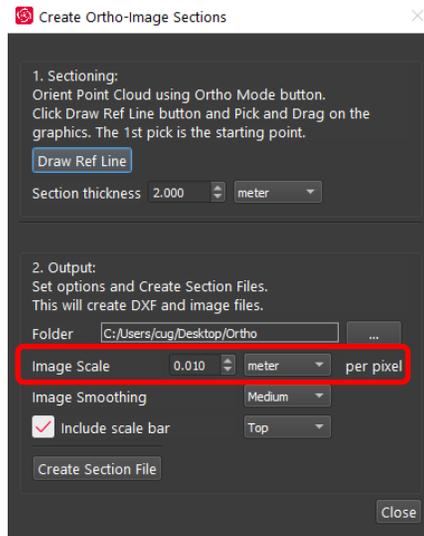


10. Set the file location to the desired folder *on disk*.



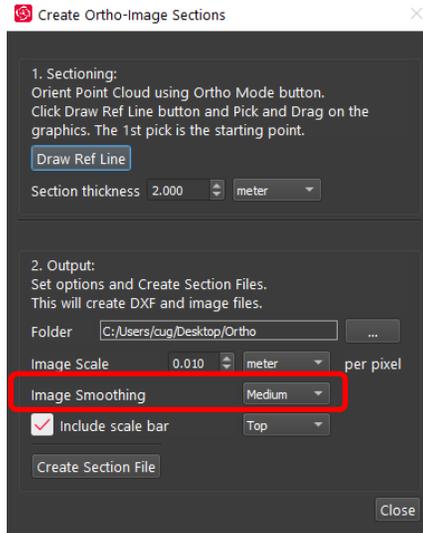
11. Set image scale

- a. This setting is controlling the resolution of the final image as Pixels per desired unit.

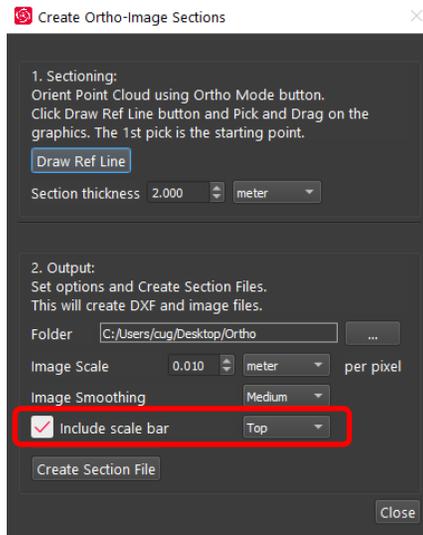


12. Set image smoothing

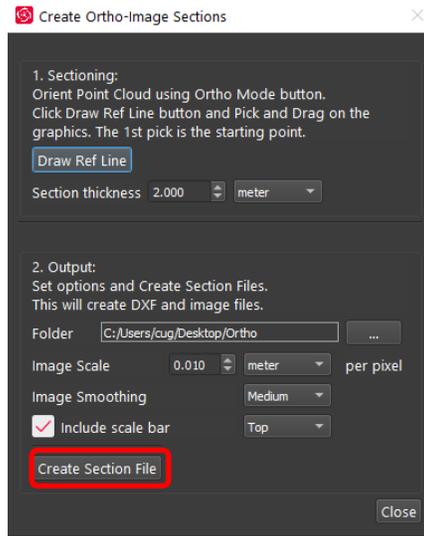
- a. This value sets the amount of fill and general smoothing applied to the image.
- b. Options are low, medium and high.



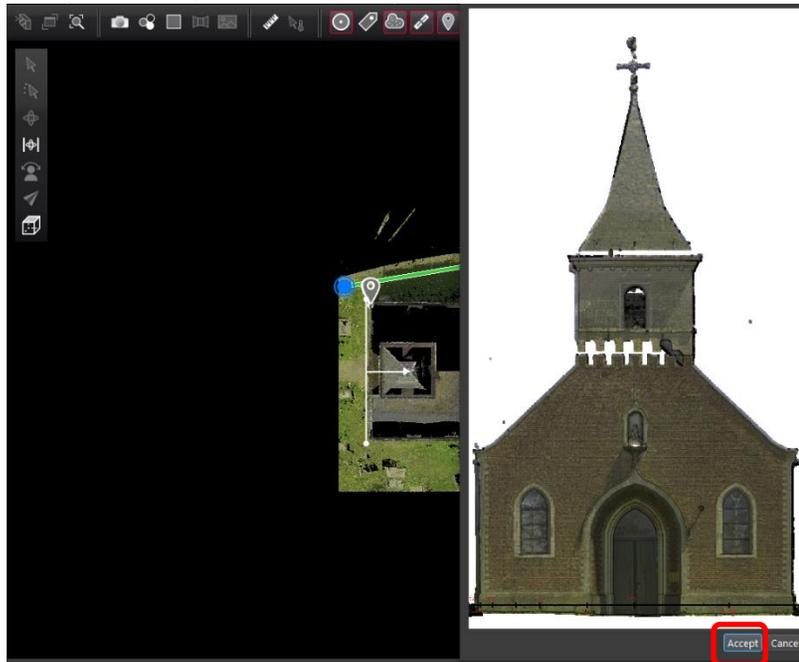
13. Check **Include scale bar** and select its location on the image (Top or Bottom)



14. Then Click **Create Section File**. A preview image will be generated

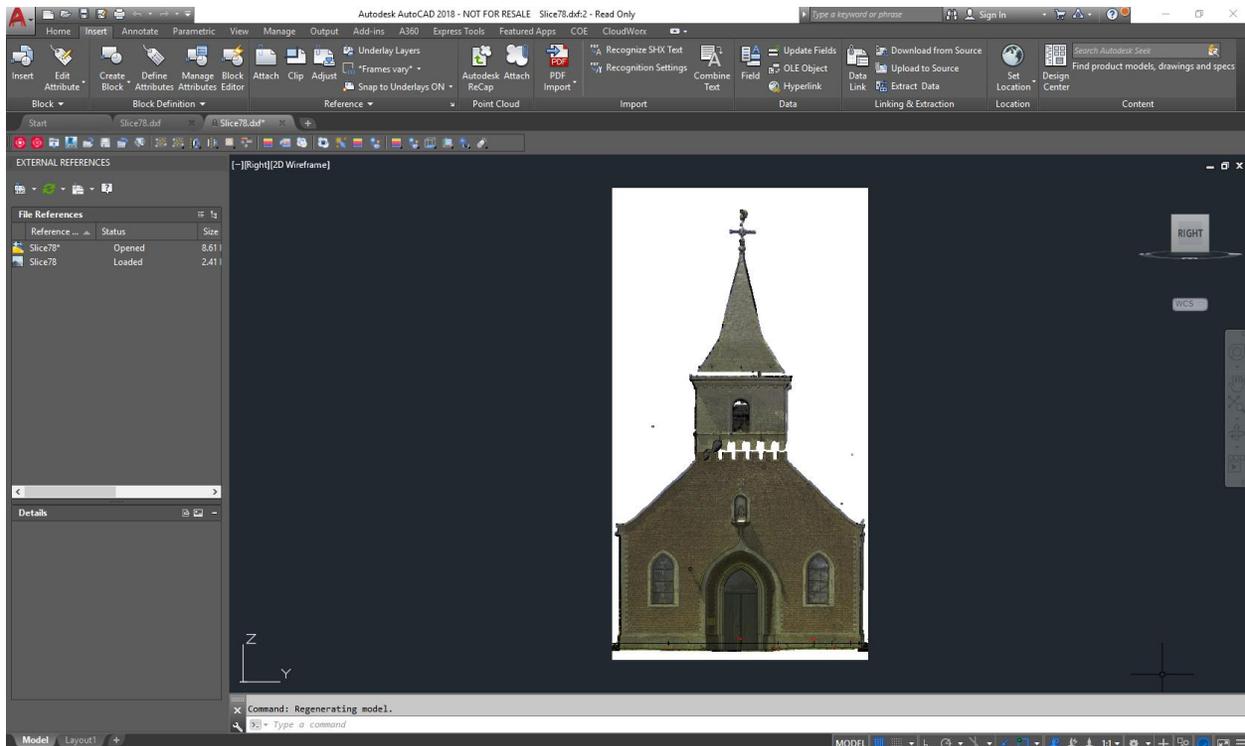


15. If acceptable, click the **Accept** button to finalize the process



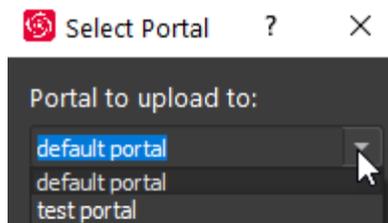
16. This will create an image and associated DXF file in the selected location.

17. Click on the DXF file with AutoCAD or other format-supporting program installed to view the image.



## Select portal when exporting to TruView Cloud

Upon publishing, users may now publish directly to a TruView Cloud Portal based on their user access rather than publishing data to the default portal and then moving it. When exporting to TruView Cloud, after entering the user's credentials, an option dialog will appear which allows the user to select which Portal to upload the TruView data to.

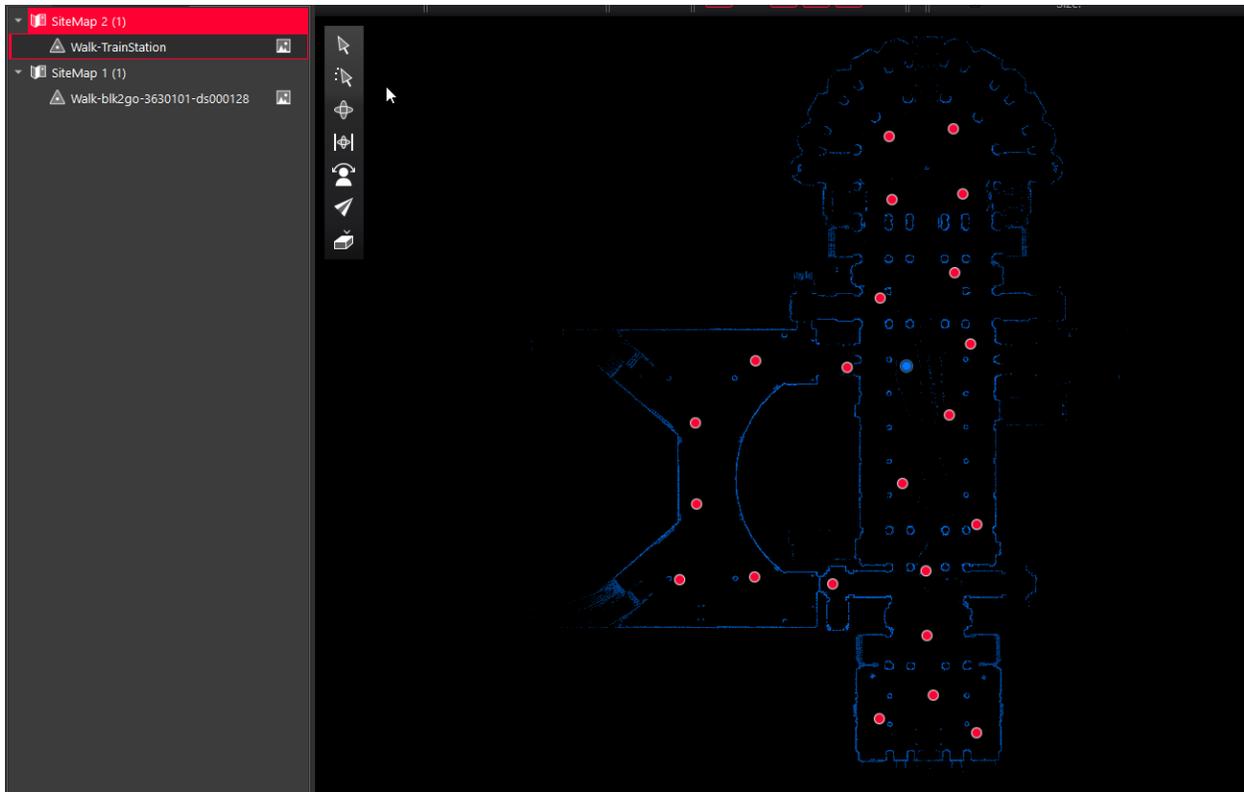


## TruSlicer now works with individual Setups and Walks

Users can now use the TruSlicer tool with individual BLK2GO Walks or single Setups for greater flexibility in visualizing their data.

Right click on a Setup or Walk and select the **Slice** tool or from the center view click on **TruSlicer**.

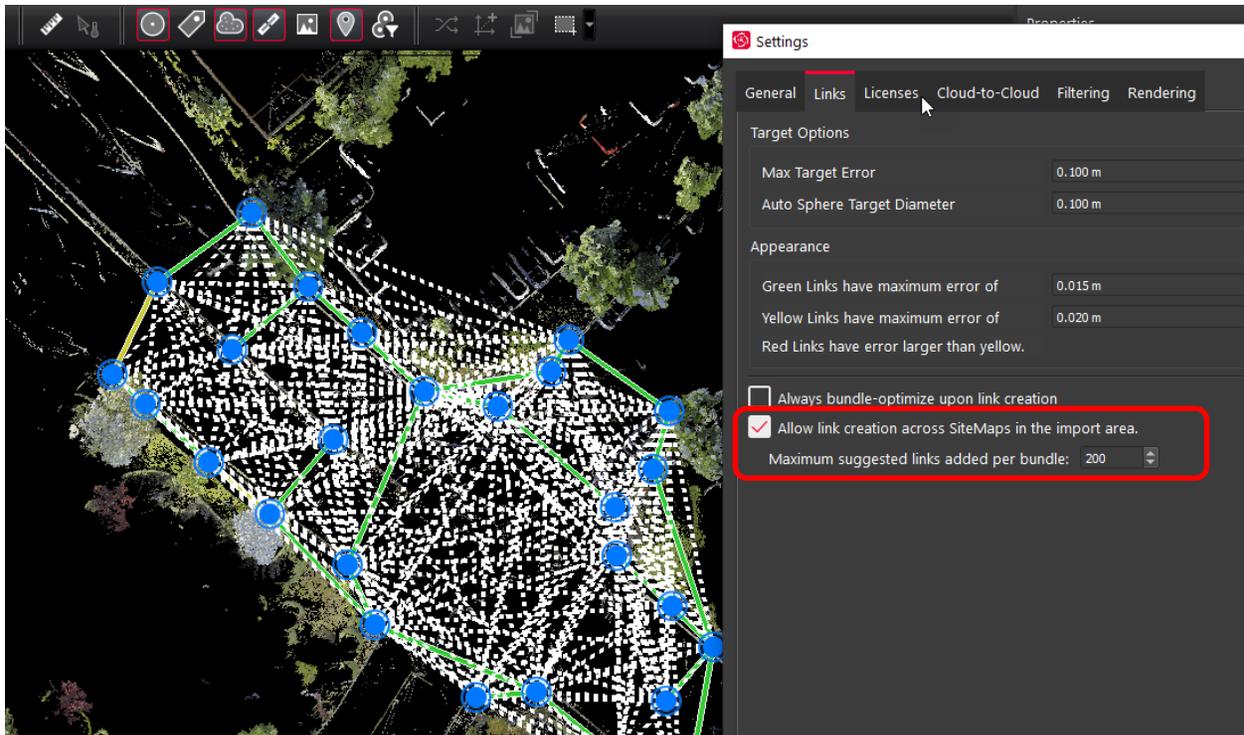
**Note: BLK2GO Walks will appear all one colour since they are a single, unstructured cloud.**



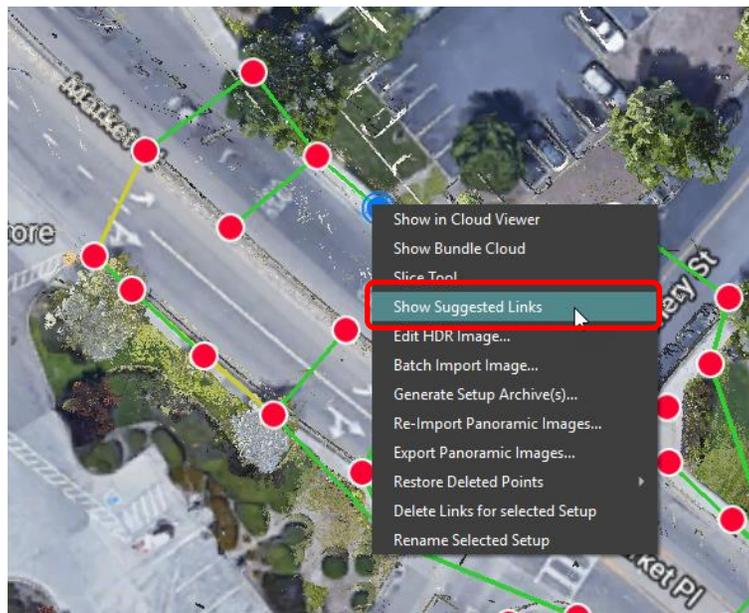
### User settable number of suggested links

The user can now determine the maximum number of suggested links created automatically after Visual Alignment on a selected bundle. This is very helpful on large bundles where there can be hundreds of suggested links. The user may now make more than 50 links at once saving considerable time.

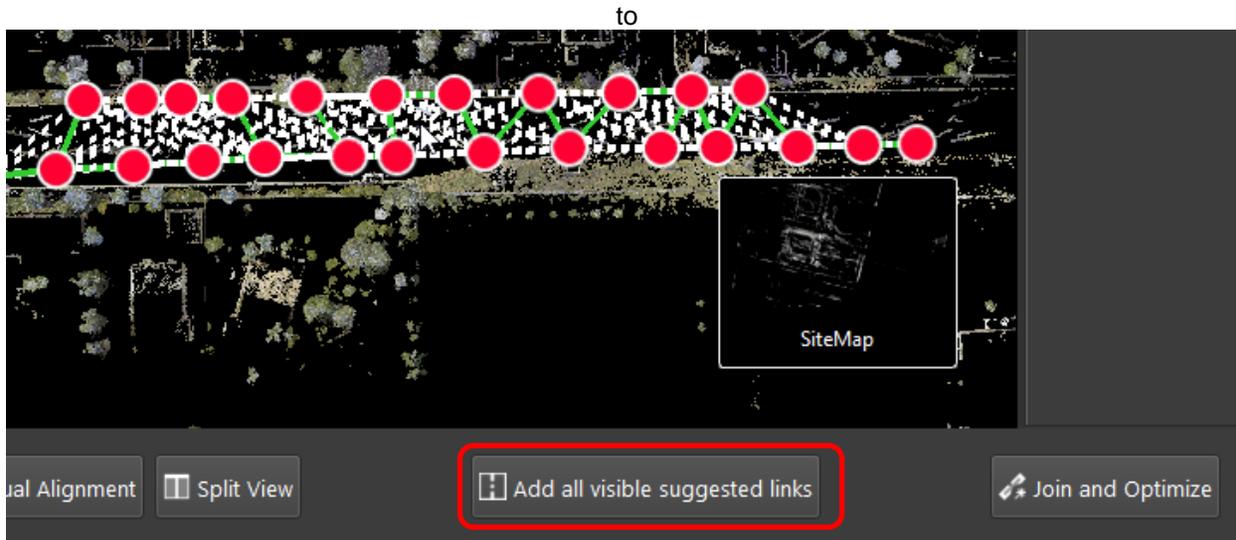
The maximum suggested links option is in the Settings menu.



1. Right Click Bundle and use the command, **Show Suggested links.**



2. Then select one of the suggested links and click **Add all visible suggested links** on the action bar.



### Added Leica Geosystems to the header of E57 files

A new header was added to E57 files which identifies data as originating from Leica Geosystems products to help 3<sup>rd</sup> party software with import of E57 files from Cyclone and Cyclone REGISTER 360.

### Improved publishing to ReCap

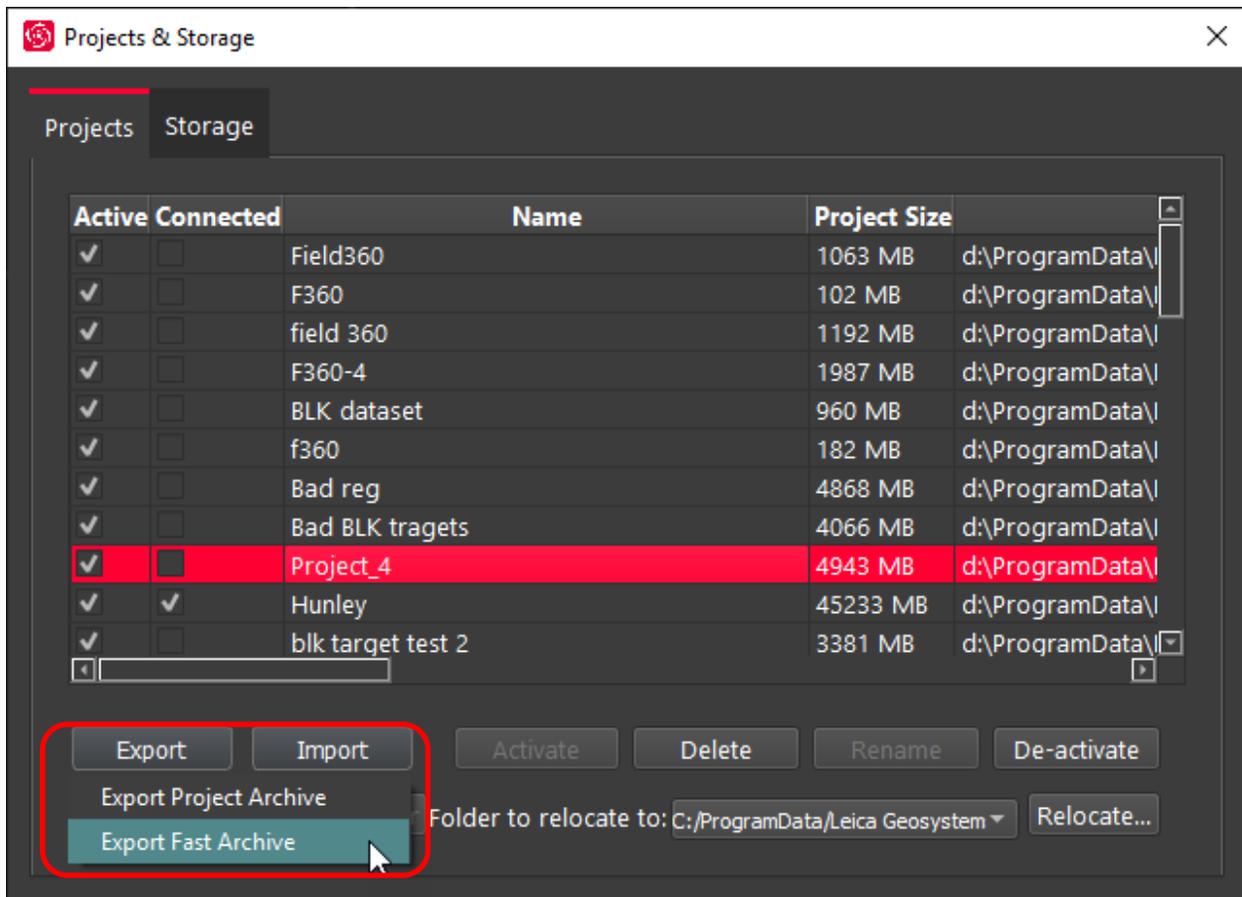
The 2-billion-point limitation has been removed from publish to RCP. The below recommendations are suggested for best results.

- RCP publishing must use a temp folder located ONLY on C drive.
  - The location of the temp folder is:
    - C:\Users\current user\AppData\Local\Temp\Autodesk
  - This is a limitation from ReCap
- 30 GB of temp space is need for every billion points exported to a single RCP cloud.
  - Using publish to separate Setups does not use the same level of temp space. Temp space is not generally a problem when exporting separate Setups.

### Improved Archiving

There is now an option to produce a “Fast Archive” which copies the Project folder directly to a selected location on disk. This option bypasses the creation of an RAF archive and is significantly faster. The Fast Archive does not create a single file but instead keeps the original project file structure.

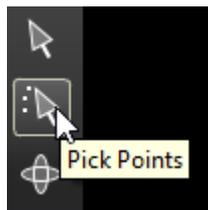
To use, open Project & Storage, click a project to archive then click Export. A new option, **Fast Archive** is listed.



## Export pick points to text file

The pick points tool has been enhanced to offer the export of selected pick points to a text file in either xyz or yxz format.

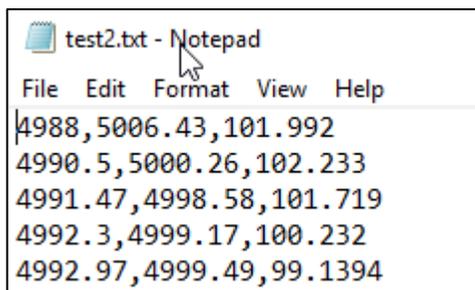
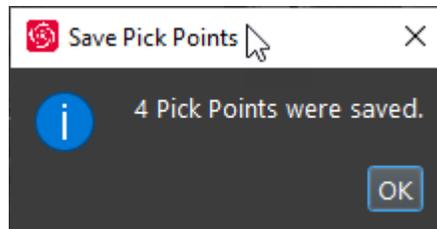
1. Select the point cloud selection tool, and select the desired point cloud points.



2. Next right click to export to xyz or yzx:



3. Then select a location on disk to write the text file and click OK.
4. The text file will be written:

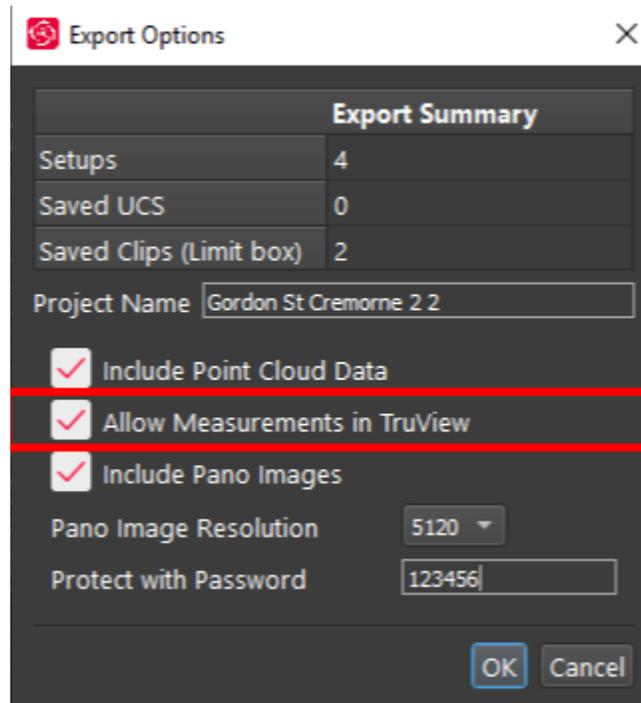


## Publish without TruView Measurements

When publishing to TruView Cloud, TruView Enterprise, and LGS there is a new option, **Allow Measurements in TruView**.

By default, when publishing an LGS file, the data to support measurement in TruView will be included within the file. With this release, users who intend to use LGS file only with JetStream and/or CloudWorx products have the option not to include these files. In order to increase the speed of publishing and upload, and reduce the overall file size.

The option is in the export dialogs for TruView Cloud, TruView Enterprise and LGS:



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**Note: if you elect not to use this option, measurement will not be supported in TruView Enterprise or Cloud.**

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## Bug Fixes

### Installation Bugs

- Corrected a bug which could cause installation errors of Cyclone REGISTER 360 Standard when BLK Edition was installed first.

### Import Bugs

- Improved support for import of very large scans.
- Improved import speed when using sphere targets.

- Corrected a bug which could cause hidden pano images in C10 datasets.
- Improved the clarity of import success and failure messages.
- Improved error reporting when connection between Cyclone FIELD 360 and Cyclone REGISTER 360 is lost
- Improved cleaned PTG import
- Corrected a bug which could result in missing colour in FLS files after import
- Corrected a bug that could cause a cancelled import to create a false project containing setups but no data
- Corrected a bug which could result in certain BLK setups importing without colour.

## UX bugs

- Corrected a bug which could prevent tilt corrections being applied if control was added and removed.
- Improved experience of moving setups between SiteMaps and renaming SiteMaps.
- Corrected a bug which could cause the default storage folder to be reset.
- Improved clarity of publishing success messages.
- Corrected a bug which could cause unexpected opening behaviour and panning behaviour when in split view.
- Corrected a bug which could cause invalid options to appear actionable.
- Corrected behaviour of fencing when moving a window between monitors of different resolutions.
- Corrected a bug with UCS transfer when moving setups across SiteMaps.
- Corrected a GeoTag creation bug.
- Corrected a bug with applying settings in the tone map editor.
- Corrected a bug which allowed disconnected projects to be re-named and errantly connected them.
- Corrected a bug which could result in points being clipped despite being hidden during clipping operations.
- Corrected a bug which could result in upside-down preview images for Assets though the images were correctly displayed when viewed at full size.
- Corrected a bug where minimum value for slice thickness could not be set below 1.0.
- Improved Detect Moving Objects filter to remove “halo effect”
- Corrected a bug which could cause TruSlicer to appear in greyscale
- Corrected instances of buttons in non-English language versions having misaligned text
- Corrected unexpected behaviour when moving between tabs in the properties panel.
- Corrected a bug which could cause a control point to be ignored.
- Improved performance of deleting marked points when using an active Limit Box and the Detect Moving Objects tool
- Upside down RTC360 scans are now supported
- Corrected a sorting bug in properties panel
- Improved stability of Visual Alignment
- Improved visualization of PTG data
- Corrected a bug which could cause bundle optimization to be run every time suggested links were added despite option being off. Corrected a bug which prevent IR images from being passed from Cyclone FIELD 360 to Cyclone REGISTER 360
- Corrected a bug exchanging versions between Cyclone REGISTER 360 (Standard Edition) and Cyclone REGISTER 360 (BLK Edition)
- Improved tone map editors' handling of variable exposure.

## Publishing Bugs

- Corrected a bug with removing and re-writing deliverables after a publish event was cancelled.
- Corrected a bug which could prevent publication when the default coordinate system was not modified.

- Corrected a bug which could result in loss of tilt correction when publishing to E57.
- Corrected a bug which caused unexpected HDR image results when importing RTC360 data from Cyclone FIELD 360.
- Improved the clarity of publish success and failure messages.
- Corrected a bug which could prevent control coordinates from being published if the original SiteMap is not part of the published data.
- Export RCP to desktop is now disabled in alignment with ReCap requirements
  - An export to a sub-folder is allowed.
- Removed corrupted deliverables from the Report area
- Publish file names exceeding 260 characters are now allowed.
- Corrected a bug in publishing RCP from Cyclone REGISTER 360 (BLK Edition)
- Implemented a change to RCP publishing which allows applied control and UCS transformations to transfer to Cyclone
- Improved the legibility of measurement text in screenshots included in the published Registration Report PDF
- Corrected a bug which could prevent a user from publishing a deliverable to LGS despite having a PUBLISHER Pro license if the deliverable was created when a license was not present.
- Corrected a bug which could cause GeoTags to be misplaced when publishing to TruView Cloud with applied control.
- Corrected a bug which caused long project names to be mis-handled in the Registration Report
- Corrected a bug which could present publishing of a deliverable twice.
- Corrected a bug which could result in a JetStream Enterprise password being retained when not publishing to JetStream Enterprise
- Corrected a bug publishing to RCP with certain graphics cards.

### Installation and Licensing Bugs

- Corrected a bug which caused Cyclone REGISTER 360 to consume multiple seats of a license.

## Leica Cyclone REGISTER 360 2020 Compatibility and Upgrades

### Compatibility

The Cyclone REGISTER 360 family requires corresponding releases of Cyclone, JetStream Enterprise, JetStream Viewer, and TruView for features to function correctly:

	Cyclone	Cyclone REGISTER 360	Cyclone REGISTER 360 (BLK Ed.)	JetStream Enterprise	JetStream Viewer	TruView
<b>Import Cyclone REGISTER 360 Projects (BASIC, REGISTER, MODEL, or SURVEY)</b>	9.2 or higher					
<b>Import Cyclone REGISTER 360 (BLK Edition) Projects (BASIC, REGISTER, MODEL or SURVEY)</b>	9.4.2 or higher	1.6.2 or higher	1.6.2 or higher			
<b>Support BLK2GO data</b>	2020 or higher	2020 or higher	2020 or higher	2020 or higher		
<b>Consume published HDR panorama images published as JetStream Enterprise projects</b>				1.4.1 or higher	1.4.1 or higher	
<b>Publish to JetStream Enterprise</b>		1.4 or higher	1.6.2 or higher	1.4 or higher		

<b>View Multi SiteMap hyperlinks</b>		1.5 or higher	1.6.2 or higher			3.0 or higher
<b>View projects or LGS files containing pano image layers</b>					1.5 or higher	3.6 or higher
<b>Consume LGS files</b>				1.5 or higher	1.5 or higher	3.6 or higher
<b>Publish password protected LGS files</b>	9.3 or higher	1.6 or higher	1.6.2 or higher	1.6 or higher	1.6 or higher	
<b>Consume password protected LGS files</b>	9.3 or higher			1.6 or higher	1.6 or higher	3.8 or higher

## Deprecated Features

Leica Geosystems strives to provide support for the widest array of operating systems and file formats possible as is reasonable given current technologies and support from third-party partners.

With each release, we review our list of currently supported formats and operating systems in line with industry trends and announced product terminations.

Leica Geosystems may add or terminate support for a file format during any release. Obsolete operating systems will be supported for six months after their announced termination or the next major software release, whichever comes first. Server products will be supported in alignment with Leica's Client License Manager (CLM) supported servers to guard users against incompatibility.

Please reference the Leica Geosystems Deprecated Features policy for a complete listing of discontinued features, formats and operating systems.

Cyclone REGISTER 360 2020:

- TVG files are no longer published. Users should use the LGS format.
- JSV files are no longer published. Users should use the LGS format.

## Known Issues

- After editing an HDR tone map, other Versions created will still show the original tone map in the thumbnail but the Pano and point cloud will be correct.
- The 2-billion-point limitation has been removed from publish to RCP.
  - RCP publish must use a temp folder located ONLY on C drive.
    - This is a limitation from ReCap
  - 30 GB of temp space is need for every billion points exported to a single RCP cloud.
  - Using export to separate setups does not use the same level of temp space. Temp space is not generally a problem when exporting separate setups.
- Virtual Machine (VM) environments are not supported.
- Remote Desktop is only supported if Cyclone REGISTER 360 is opened in the remote computer first. Trying to open Cyclone REGISTER 360 through remote desktop is not supported.
- Cyclone REGISTER 360 will not detect the dedicated graphics card on computers with multiple graphics cards. Users must manually set the dedicated card for use with Cyclone REGISTER 360. This is done with the Nvidia Control Panel for Nvidia graphics cards, or with the Catalyst Control Centre for ATI/AMD graphic cards
- Importing data over a network can cause issues, especially on Windows 10. The workaround is to copy the scan data to a local disk.
- If memory issues arise, check and make sure that the virtual memory size is set to the same size as RAM.

- Automatic image matching of imported panoramic images may not always be correct.
- The zoom scale bar will be captured in the image in the import area using the satellite or street map.
- Project thumbnails (the image shown in the project explorer) are not preserved in the \*.raf export file.
- F1 contextual help will not work with Microsoft Edge browser as the default browser. The workaround is to use Chrome or Firefox as the default browser.
- The auto extraction of Black & White targets will not extract targets from detail scans. The extractor works on the main scan only. The targets can be manually extracted from the detail scans after import.
- Files written to the temp folder at `C:\Users\(user name)\AppData\Local\Temp\Register360`, will be deleted after the program closes. These files will NOT be deleted if the program freezes or crashes.
- In rare cases the bundle will show an optimized state, but there is still an unoptimized link in the bundle (not shown with a dotted line). Optimize the bundle to resolve the issue or split the bundle into smaller bundles and look for the suspect dotted line link, delete this link and re-optimize.
- The SiteMap name cannot have non-Latin (Japanese, Chinese, etc.) characters for publishing to TruView Enterprise or TruView Cloud.
- The currently active Project should not be re-named from the Projects & Storage settings. You should close the project before renaming it.
- When a setup has a UCS created from it, the UCS must first be deleted before the setup can be deleted from the project.
- On rare occasions HDR images may appear grey with very little variation. The workaround is to open the image with the Tone Map Editor and re-save the image.
- Some graphic card anomalies can be caused by power management software. Please turn off by setting the power management profile to High performance.

## Importing from Cyclone FIELD 360

Only BLK360 projects will appear when the user connects to Cyclone FIELD 360. Cyclone FIELD 360 does not store full project data for the RTC360 and projects should be imported directly from the scanner.

## Cleaned vs. Uncleaned pano layer publishing

When publishing an LGS file, the Hue and Greyscale pano layers will show the uncleaned cloud.

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***A workaround would be to publish to e57 and then re-import the data then publish to LGS.***

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## BLK2GO E57 Support

Due to the unstructured nature of BLK2GO data, E57 files created from the scanner will not be supported for import into Cyclone REGISTER 360 2020 or earlier. Users should save original B2G files for future use.

## Modified usage for Japanese OS

Japanese OS language preference is not selected by default and causes issues with some Cyclone REGISTER 360 imports.

The user can fix this by manually selecting the language within preferences.

1. On the Japanese OS machine, launch Control Panel
2. Select region(地域) and click on the accept button indicated
3. Check "Use Unicode UTF-8 for worldwide language support"
4. Reboot

## Non-ASCII characters

Non-ASCII characters are not allowed in the following conditions:

- Import temp path

## Blurred images within ReCap

In some cases, E57 files published from Cyclone REGISTER 360, when imported into ReCap, may display blurred imagery when entering the Setup location sphere. This is a known issue with ReCap. RCP files published from Cyclone REGISTER 360 do not show any display issues.

## Usage file reporting issue for EnterpriseElite Customers

When using the standalone CLM installer, some EnterpriseElite users may find that the usage file (year-month.db) normally located at *C:\Leica Geosystems\CLM\LogFiles* does not get produced.

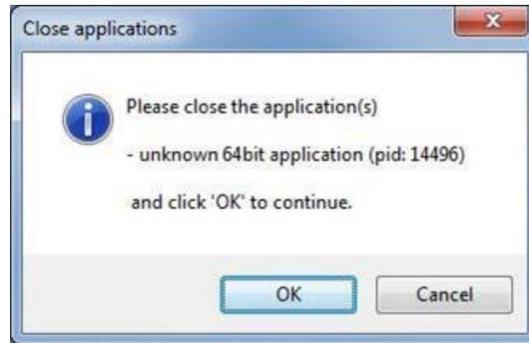
Please ensure your LGS.opt file (located here: *C:\Program Files (x86)\Common Files\Leica Geosystems\License-Server\lgs.opt*) looks like this:

```
DEBUGLOG +"C:\Leica Geosystems\CLM\LogFiles\lgs.log"  
NOLOG IN  
TIMEOUTALL 240  
ENABLE_DB_HISTORY 1  
PATH_DB_HISTORY C:\Leica Geosystems\CLM\LogFiles
```

ENABLE\_DB\_HISTORY should be set to **1** in this file. Please copy the file to a new location, edit it and re-save if the file says it's read-only.

## Installing CLM while JetStream is running

During installation of CLM, users may encounter the following error message. This is commonly due to a service like JetStream running in the background.



To enable the successful installation of CLM, please follow these steps:

- Launch the task manager
- Select the Services tab
- Look up the process with the PID (Process ID) shown in the Close applications dialog
- In this case it is JetStream
- Terminate the process so that CLM can be installed
- After CLM is installed, click on the Services button in the Task Manager and restart the service

### **RCP publish dialog progress reporting**

When publishing an RCP file, the progress will appear to stall at a certain interval. Though the progress bar does not update, the export is progressing. Users may check the task manager to ensure that the service is still functioning.

### **LGS usage over network**

The use of LGS files is only supported when the files are saved locally. Due to variations between network deployments LGS files may be unreliable when published to a network location.

## **Licensing**

All users with valid CCP for either Cyclone REGISTER 360 (Standard Edition) or Cyclone REGISTER, or with CCP valid as late as 25 January 2020, can run this new version of Cyclone REGISTER 360 (Standard Edition) with no new license required.

All users with valid CCP for Cyclone REGISTER 360 (BLK Edition) or with CCP valid as late as 25 January 2020 can run this new version of Cyclone REGISTER 360 (BLK Edition) with no new license required.

Users of Cyclone REGISTER 360 (Standard Edition) and Cyclone REGISTER cannot run Cyclone REGISTER 360 (BLK Edition) with active CCP. Users must purchase a separate license to run this product.