

Leica Geosystems Release Notes

Product Leica CloudWorx 2022.0.0 for SOLIDWORKS
Date 25 January 2022
From HDS Software Product Management

Contents

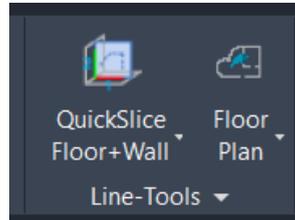
What's New	3
Floor Plan Creation Tool.....	3
Clash Manager	5
Measuring Between Points.....	6
Support for TruSpace	6
Support for QuickSlice and Line Fitters.....	7
UI Improvements	7
Preview Object Fitter Results	8
Connecting Steel Beams	9
Improved UCS creation	9
Bug Fixes	10
UX Bugs.....	10
Leica CloudWorx 2022.0.0 Compatibility and Upgrades	10
Upgrading to Leica CloudWorx 2022.0.0 for SOLIDWORKS from Leica CloudWorx 2020.0.2 for SOLIDWORKS	10
Compatibility with Leica CloudWorx 2022.0.0 for SOLIDWORKS and SOLIDWORKS Versions	11
Compatibility with JetStream Enterprise.....	11
Compatibility with Cyclone ENTERPRISE	11
CloudWorx Ultimate.....	11
Deprecated Features.....	11
Known Issues	11
Installing CLM while the JetStream is running	11
Equivalent user permissions requirement	12
Exporting to 3D PDF.....	12
LGS usage over network	12

What's New

This is a major release. New features include Clash Checking, QuickSlice and Polyline tools, support for TruSpace, a new Floor Plan creation tool, and more. Please refer to the Licensing section for information about CCP requirements.

Floor Plan Creation Tool

Users can now use the Floor Plan tool to speed up the process of creating 2D floor plans.

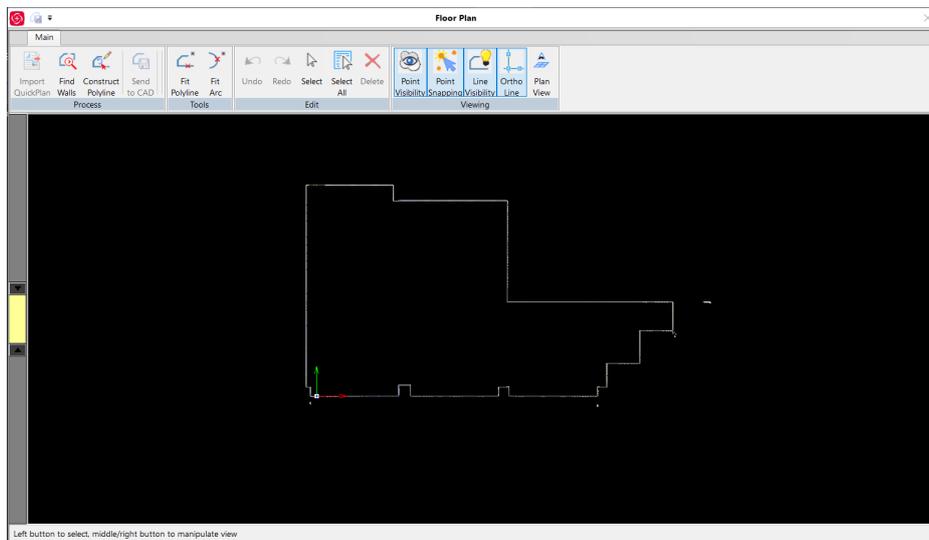


To use the Floor Plan tool:

1. Create a **QuickSlice**.

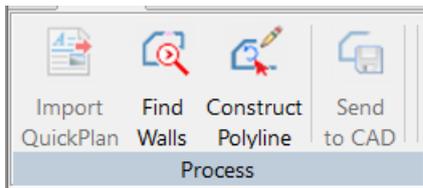
Note: You may find it helpful to do some additional clipping to clean up the data in and around the area of interest, however, this is not required.

2. Click on the **Floor Plan** button to launch the tool.



3. You will be presented with a series of tools to help you create your floor plan.
4. When finished creating polylines, click the **Send to CAD** button to close the Floor Plan tool window.

Process



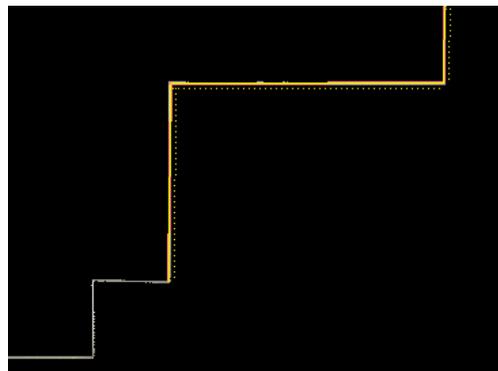
- **Import Quick Plan:** If the project contains a Quick Plan DXF file created in Cyclone FIELD 360, this will allow that Quick Plan to be used as a template to begin creating your floor plan from.

Note: any user of Cyclone FIELD 360 can create a Quick Plan, however they can only be exported with a Cyclone FIELD 360 Quick Plan license. Please reach out to your sales representative for an evaluation license or to purchase this add on.

- **Find Walls:** If no Quick Plan is available, the Find Walls tool will automatically identify possible line segments. The results, shown as red lines, can be selected and deleted as needed to remove any erroneous results (optional).



- **Construct Polyline:** Connect line segments and fill in gaps to create polylines.
 - Click on red line segments to connect them. They will become yellow.



- When you reach a gap, you can click on a wall to automatically fit a line to the point cloud. Clicking on an area of points and dragging will also try to create a best fit segment along the drawn line. Clicking and dragging from an area with no points will manually create a line as drawn. Connected and drawn segments will try to grow automatically (if the **Auto Advance** option is enabled) and will also refine as new segments are connected/created.
 - After **Ending** or **Closing** the polyline, it will turn green. Green polylines may be selected and their endpoints can be adjusted to fine tune your linework or to correct errors.
- **Send to CAD:** Pushes the finished polylines (shown as green lines) back to your current drawing/model and closes the tool. Any remaining red line segments will be discarded and ignored.

Clash Manager

CloudWorx for SOLIDWORKS now includes the Clash Manager feature. The Clash Manager allows users to check point clouds against CAD models and identified locations where there might be an interference due to overlap.

Clash Manager can be run against any CloudWorx point cloud.

Once a Clash analysis has been run, there are a handful of tools to dig further into the results.

- **Process:** Select CAD objects and proceed with general clash check. The result will be multiple records showing the clashing regions. Each region is represented by a box. The new records have a clashing state but are not approved. The initial status of a clash is Unspecified.
- **Zoom:** Sets the selected clash as the active clash region. Align the viewport area to the active clash region and display the region in wireframe.
- **Display:** Display the clashing points for the active clash region. "Active" means the records from the last "Process" or "Verify" results.
- **LimitBox:** Temporarily toggle on or off the limit box to the cluster region.
- **Comments:** Double click Comments field to add comments to the clash.
- **Find Clash Record:** Click on the Find menu to invoke the Find dialog. Type any string in the dialog box, click Find Next button, and the clash manager finds and highlights the next record that matches a given column value. The search is string-based and case-sensitive.
- **Verify:** Reprocess a clash record by recalculating the interference with the point clouds. This is usually used when CAD objects are modified. If the CAD object has changed, the "Process Result" may change to "Cleared" and a new record may be added.
- **Change Clash Type:** Click the Clash Type field to change the type. By changing from Unspecified, the clashing record is reviewed and your login name, time will be recorded too.
- **Interference Settings:** Opens the Interference Settings dialog to change parameters used for displaying clashing points. You can show or hide original cloud points when displaying clashing points. You can change the interference threshold (tolerance, usually smaller than general inspection) used to calculate and display the interfering points.
- **Close:** The Clash Manager dialog is closed. All clashing points, as well as the cluster boxes that are displayed will be reset.
- **Show All:** Display all clash region boxes in the view.

To proceed with a Clash Analysis:

1. Run this command.
2. **Process:** Select both the CAD objects and Point Clouds that you want to clash against and run "Process". After a while the result will be displayed in the clash manager dialog. Each new record is a potential clashing area and needs approval. They are initially marked as "Unspecified" and "Clashing".
3. Select an unspecified clash record, Zoom to the clashing area to check detailed situation. Run "Display" to show the detailed clashing points. Change "Clash Type" as appropriate.
4. Continue processing other unspecified records.
5. If the CAD drawing has been changed, then it may cause the clashing situation to change, and you need to reprocess the clashing. You can either select CAD objects and do "Process" again, or select a clash record to "Verify".
6. When you "Verify" an existing clash record, all clashing records related to this group of CAD objects will be verified. Following are possible results:
 - If a CAD object exists but no matching clash region is found, then "Process Result" is changed to "Cleared".

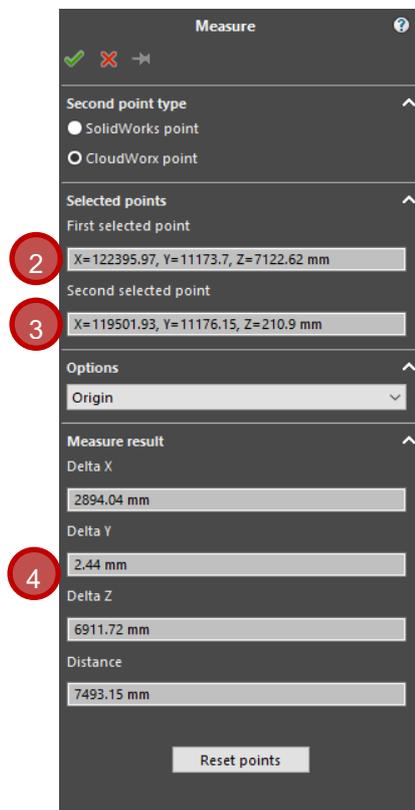
- If a CAD object no longer exists, then “Process Result” is changed to “Missing”.
 - New clash regions are added as new clashing records and are set to “Clashing” and “Unspecified” for review.
7. All the records generated will stay in the clash manager dialog unless you delete them.
 8. You can export the records to a text file (tab-delimited). It can be imported into Excel or database where you can generate reports on your own.

Measuring Between Points

Users can now measure between point cloud points within Solidworks.

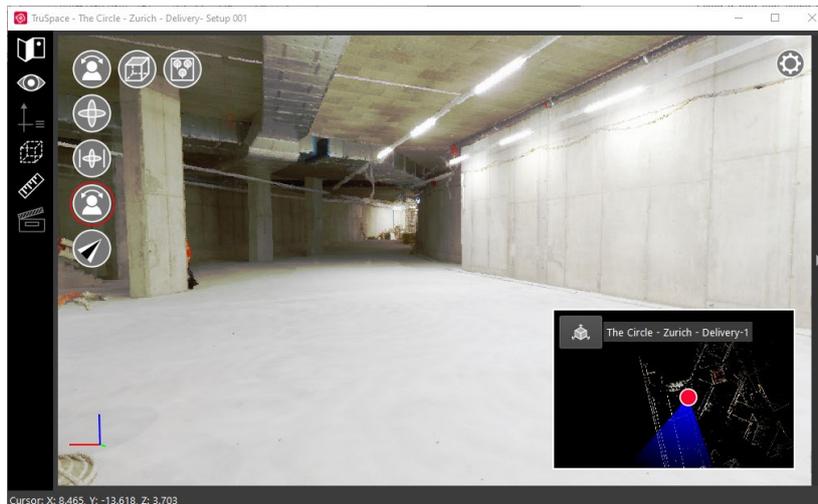
To measure:

1. Begin by activating the *Measure* tool.
2. Select the first point.
3. Select the second point.
4. The XYZ coordinate of each point will be displayed within the tool and the results will be displayed below including the ΔX , ΔY and ΔZ and the absolute distance between the two points.



Support for TruSpace

CloudWorx for Solidworks now supports TruSpace and all of the functions that TruSpace supports. TruSpace is an additional way for users to interact with their reality capture data while inside of Solidworks. TruSpace offers users an immersive-style view of their project to supplement the traditional plan-view that is found in the main CAD viewing window. Either view from Setup positions or navigate in 3D.

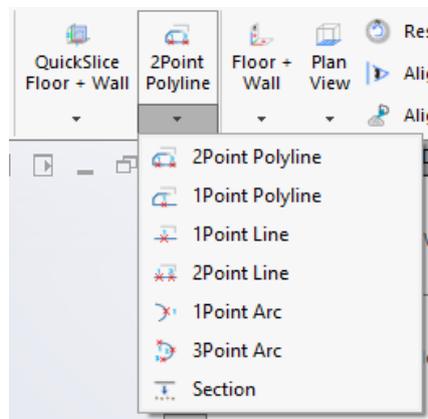


Support for QuickSlice and Line Fitters

When used in parallel, QuickSlice and Line Fitters allow users to quickly define a level on which to slice and extract linework with minimal manual effort. Solidworks users who utilize the extrusion and tracing functionality will find these additions useful.

Within the QuickSlice tool, the user will define the orientation and location of the slice and the thickness. Users may also define their slice in alignment with the active UCS.

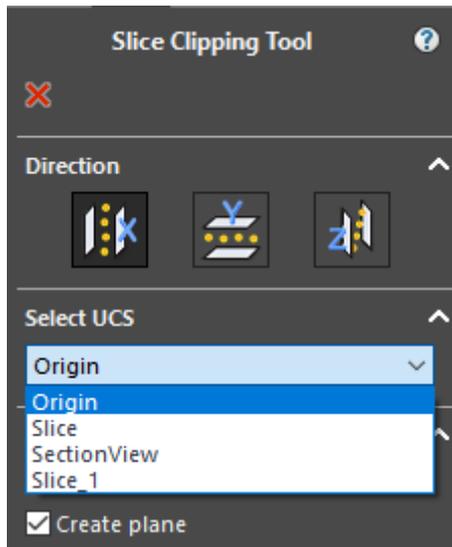
Once the slice is defined, the line fitting tools can be used to quickly produce linework based on the slice. Line fitters work in a semi-automated fashion by taking seed points defined by the users' clicks and growing a line.



UI Improvements

Solidworks origin used for clipping when UCS not present

If a UCS is not present in the data set, the solidworks origin will be used as the UCS when creating a clip so users can proceed without exiting to create a new UCS prior to clipping. This will allow users to more quickly create clips that do not require a specific UCS.



Preview Object Fitter Results

With the 2022 release, users will now see a preview of the fit of their object prior to placement when using a catalog. The preview can be panned, zoomed and rotated to get a better view of the fit.

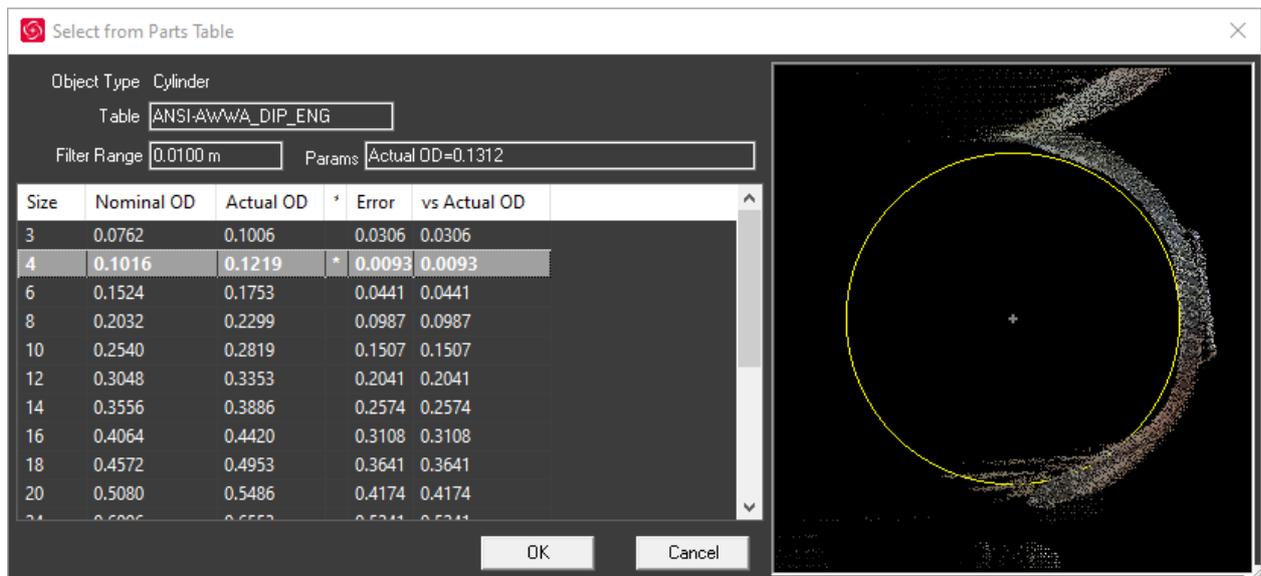
Select from Parts Table
✕

Object Type: I-beam (Wide flange)

Table:

Filter Range: Params:

Type	d	tw	bf	tf	*	Error	vs bf	vs d	vs tf	vs tw
W10x17	0.2570	0.0061	0.1020	0.0084		0.0918	0.0684	0.0612	0.0046	0.0018
W10x19	0.2600	0.0063	0.1020	0.0100		0.0898	0.0684	0.0582	0.0062	0.0016
W10x22	0.2580	0.0061	0.1460	0.0091		0.0650	0.0244	0.0602	0.0053	0.0018
W10x26	0.2620	0.0066	0.1470	0.0112		0.0609	0.0234	0.0562	0.0074	0.0013
W10x30	0.2660	0.0076	0.1480	0.0130		0.0568	0.0224	0.0522	0.0092	0.0003
W10x33	0.2470	0.0074	0.2020	0.0110		0.0779	0.0316	0.0712	0.0072	0.0005
W10x39	0.2520	0.0080	0.2030	0.0135		0.0738	0.0326	0.0662	0.0097	0.0001
W10x45	0.2570	0.0089	0.2040	0.0157		0.0699	0.0336	0.0612	0.0119	0.0010
W10x49	0.2530	0.0086	0.2540	0.0142		0.1061	0.0836	0.0652	0.0104	0.0007
W10x54	0.2560	0.0094	0.2550	0.0156		0.1050	0.0846	0.0622	0.0118	0.0015
W10x60	0.2600	0.0107	0.2560	0.0173		0.1036	0.0856	0.0582	0.0135	0.0028
W10x68	0.2640	0.0119	0.2570	0.0196		0.1022	0.0866	0.0542	0.0158	0.0040
W10x77	0.2690	0.0135	0.2590	0.0221		0.1014	0.0886	0.0492	0.0183	0.0056
W10x88	0.2750	0.0154	0.2610	0.0251		0.1004	0.0906	0.0432	0.0213	0.0075
W10x100	0.2820	0.0173	0.2630	0.0284		0.0995	0.0926	0.0362	0.0246	0.0094
W10x112	0.2890	0.0192	0.2650	0.0318		0.0990	0.0946	0.0292	0.0280	0.0113
W12x14	0.3030	0.0051	0.1010	0.0057		0.0710	0.0694	0.0152	0.0019	0.0028
W12x16	0.3050	0.0056	0.1010	0.0067		0.0706	0.0694	0.0132	0.0029	0.0023
W12x19	0.3090	0.0060	0.1020	0.0089		0.0690	0.0684	0.0092	0.0051	0.0019
W12x22	0.3130	0.0066	0.1020	0.0108		0.0686	0.0684	0.0052	0.0070	0.0013
W12x26	0.3100	0.0058	0.1650	0.0097	+	0.0098	0.0054	0.0082	0.0059	0.0021
W12x30	0.3130	0.0066	0.1660	0.0112	+	0.0068	0.0044	0.0052	0.0074	0.0013
W12x35	0.31...	0.00...	0.16...	0.01...	*	0.0034	0.0034	0.00...	0.0094	0.0003
W12x40	0.3030	0.0075	0.2030	0.0131		0.0360	0.0326	0.0152	0.0093	0.0004
W12x45	0.3060	0.0085	0.2040	0.0146		0.0358	0.0336	0.0122	0.0108	0.0006
W12x50	0.3100	0.0094	0.2050	0.0163		0.0356	0.0346	0.0082	0.0125	0.0015
W12x53	0.3060	0.0088	0.2540	0.0146		0.0845	0.0836	0.0122	0.0108	0.0009
W12x58	0.3100	0.0091	0.2540	0.0163		0.0840	0.0836	0.0082	0.0125	0.0012
W12x65	0.3080	0.0099	0.3050	0.0154		0.1350	0.1346	0.0102	0.0116	0.0020
W12x72	0.3110	0.0109	0.3060	0.0170		0.1358	0.1356	0.0072	0.0132	0.0030
W12x79	0.3140	0.0119	0.3070	0.0187		0.1367	0.1366	0.0042	0.0149	0.0040
W12x87	0.3180	0.0131	0.3080	0.0206		0.1376	0.1376	0.0002	0.0168	0.0052
W12x96	0.3230	0.0140	0.3090	0.0229		0.1387	0.1386	0.0048	0.0191	0.0061
W12x106	0.3270	0.0155	0.3100	0.0251		0.1380	0.1386	0.0088	0.0213	0.0076



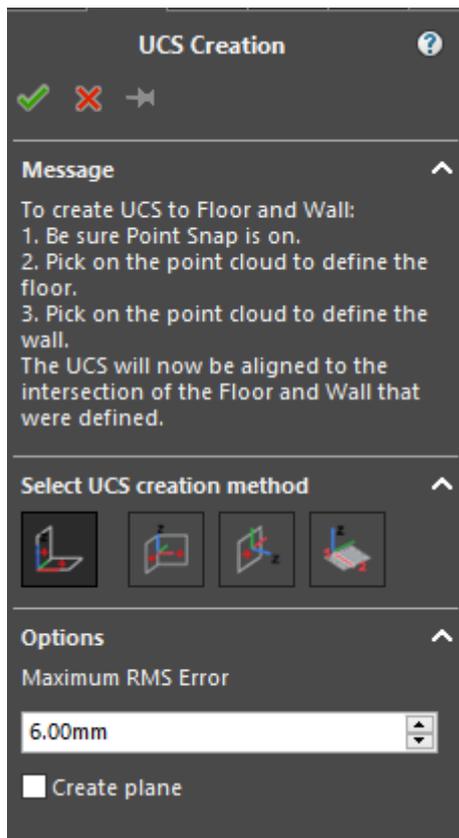
- Click and drag to pan within the preview
- Use the mouse wheel to zoom in and out
- CTRL+ Click to rotates
- SHIFT + Click to scale
- Double click to align that point to the center of the viewport

Connecting Steel Beams

Users can now utilize Weldments for connecting steel members.

Improved UCS creation

UCS creation has been improved for the 2022 version with the addition of simple buttons for the different UCS creation methods.



Bug Fixes

UX Bugs

- Fixed a bug that could cause delays when opening a Cyclone ENTERPRISE project through CloudWorx.
- Fixed a bug that could cause instability when repeatedly opening TruSpace for the same IMP dataset.
- Fixed a typo that appeared in the Japanese language version.
- Fixed a bug that could cause the incorrect tool name to appear with a button.

Leica CloudWorx 2022.0.0 Compatibility and Upgrades

Upgrading to Leica CloudWorx 2022.0.0 for SOLIDWORKS from Leica CloudWorx 2020.0.2 for SOLIDWORKS

You must have Administrator-level privileges on your workstation to correctly install Leica CloudWorx software.

If using IMP data, first run the current Cyclone installer if you do not have a version of Cyclone installed. Otherwise/Next run the CloudWorx 2022.0.0 installer and follow the directions to proceed with the installation. Please heed the warning message about compatibility of earlier version databases. We strongly recommend that users not use the “Repair” option when upgrading. Rather, users should select “Remove” when it appears and then run the installer again to install the new version.

Compatibility with Leica CloudWorx 2022.0.0 for SOLIDWORKS and SOLIDWORKS Versions

CloudWorx 2022.0.0 for SOLIDWORKS officially supports SOLIDWORKS 2018 through 2022.

Compatibility with JetStream Enterprise

CloudWorx 2022.0.0 for SOLIDWORKS is compatible with JetStream Enterprise 1.3 and higher. To access the latest features, it is recommended that users update to the latest release of JetStream Enterprise 2022.

Compatibility with Cyclone ENTERPRISE

CloudWorx 2022.0.0 for SOLIDWORKS is compatible with Cyclone ENTERPRISE 2021.0.0 and higher.

CloudWorx Ultimate

CloudWorx for SOLIDWORKS is not included in the CloudWorx Ultimate License.

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.

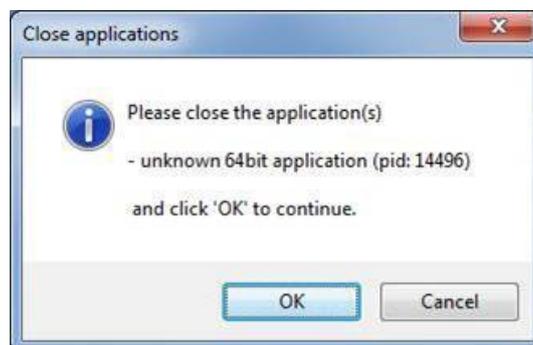
Leica Geosystems may add or terminate support for a file format during any release. Obsolete operating systems will be supported for six months after their announced termination or the next major software release, whichever comes first. Server products will be supported in alignment with Leica's Client 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.

Known Issues

Installing CLM while the 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

Equivalent user permissions requirement

When working with IMP data, SOLIDWORKS must be run with the same level of user privileges as Cyclone was originally configured with. Meaning if Cyclone is configured to Run As Administrator, then SOLIDWORKS should be Run As Administrator to connect to Cyclone and open an IMP.

Exporting to 3D PDF

When exporting data to a 3D PDF, it is possible that users might encounter an error. If this happens, please restart SOLIDWORKS and re-open the document without the point cloud. The document should now export normally.

LGS usage over network

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

Licensing

All users with a currently valid CCP, or with CCP valid as late as 1 November 2021, can run this new version with no new license required.