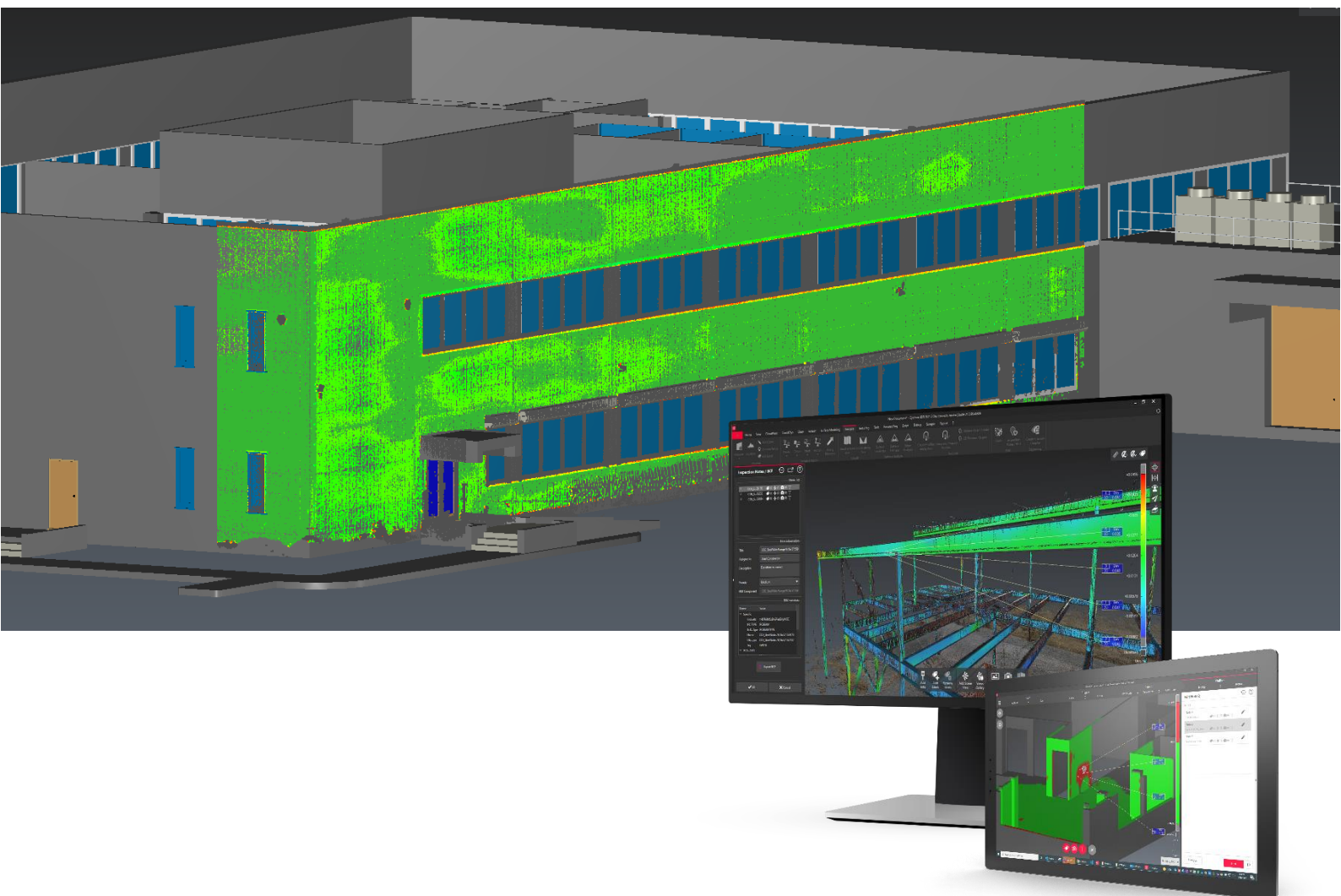


Leica Geosystems Release Notes

Product: Leica Cyclone 3DR 2024.0.2
Date: 7 March 2024
From: HDS Software Product Management



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What's New

This is a minor release including bug fixes for stability.

According to the maintenance expiration date policy, users under maintenance on 17 December 2023 may access version 2024.0 with no new license required.

Improvements

- **Script > Rectangle extraction:** A new method SCloud::ExtractRectangle to extract a rectangle from seed points on a point cloud has been added. The script function offers a similar approach as Extract > Rectangle > Region Grow.

Bugfixes

- **Analysis > Profile workflows:**
 - **Profile 2D Inspection:** Some issues in the detailed inspection table has been fixed (better management of missing inspected sections, correction of the point coordinates).
 - **Profile 3D / 2D Inspection:** Deviations of the last section were not visible in the 3D view. Fixed.
 - **Profile 3D Inspection:** The report was empty when the sections were named without prefix. Fixed.
 - **Profile 3D Inspection:** The inverted profile was not properly managed in the "Compute Profiles" step. Fixed.
 - **Send To:** The section names were wrong when the option "2D curvilinear distances" was checked at the beginning of the workflows. Fixed.
 - **Section texts:** Section texts could be reset while navigating between the workflow steps. Fixed.
- **File > Import IFC/RVT:** An error occurred when an IFC/RVT file was executed with a double click from Windows OS. Fixed.
- **File > Connect to Reality Cloud Studio:** The access to the login popup was missing in Cyclone 3DR Viewer. Fixed.
- **Texturing > Extract OrthoImage:** A camera conflict happened with the new Image Navigation. Fixed.

Generic specifications

Leica Cyclone 3DR 2024.0 Compatibility

Cyclone 3DR is compatible with CLM 2.14.0 and higher.

Cyclone 3DR is compatible with JetStream ENTERPRISE 1.3 and higher.

Cyclone 3DR is compatible with LGS/LGSx files.

Cyclone 3DR is compatible with Cyclone ENTERPRISE 2022.0 and higher.

Cyclone 3DR is compatible with Cyclone REGISTER 360 2021.1 and higher.

Cyclone 3DR is compatible with Cyclone IMP databases from Cyclone 6.0 or higher, however improved rendering will only be seen with IMPs from Cyclone 9.3 or higher.

Recommended Computer Specifications

Regular workflows in desktop application:

CPU: 2 GHz Dual Quad Core i7 or higher (i5 minimum)

RAM: minimum 16 GB or more for 64-bit OS

Graphics Card: NVidia Quadro or GeForce 1 GB (with OpenGL support, versions 4.3 or higher)

Operating system: Microsoft Windows 10 (Build 1809), 11 (64 bits supported)

Hard Disk: 3 GB free disk space

Tablet device for Touch Mode:

Microsoft Surface PRO Core i7 1.5 GHz – 16GB RAM.

Minimum specifications for Auto-classification (in addition to other recommended specifications for the desktop application:

RAM: minimum 32 GB

Graphic Card: NVidia with GPU capabilities

- [Compute capability](#): 5.0 or higher
- Minimum GPU memory: 4 GB

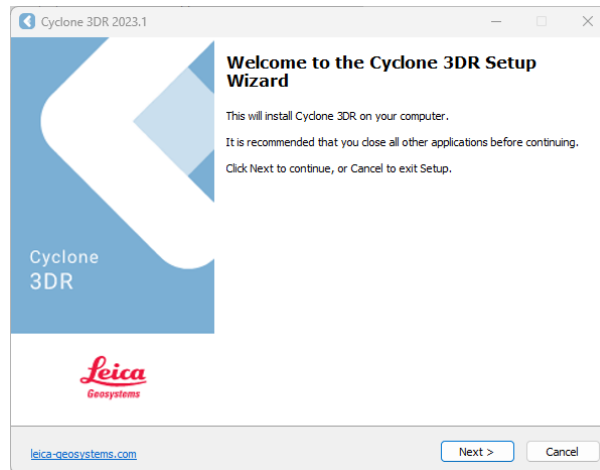
Hard Disk: 10 GB free disk space

CUDA® 11.8 Toolkit (from NVidia). **The 11.8 version of CUDA is mandatory for Auto-Classification.**

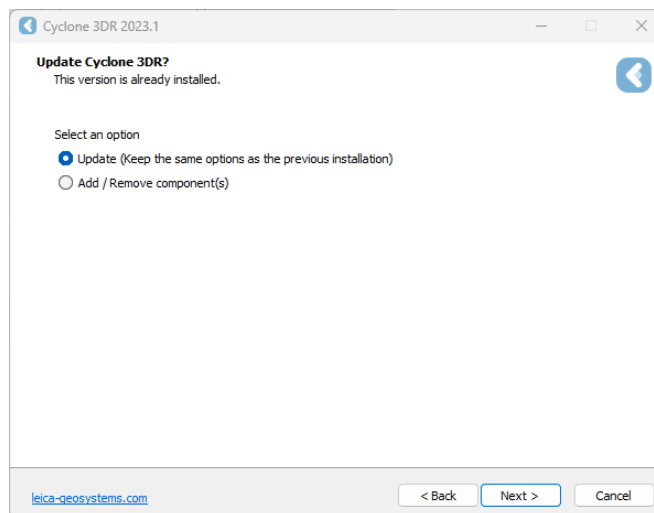
Installation and Licensing Recommendations

Installation update Procedure

1. Launch the Cyclone 3DR EXE and follow the instructions in the Setup Wizard



2. Select the option to update Cyclone 3DR (or repair if you want to change installing options)

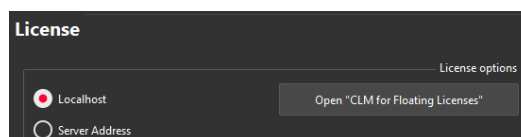


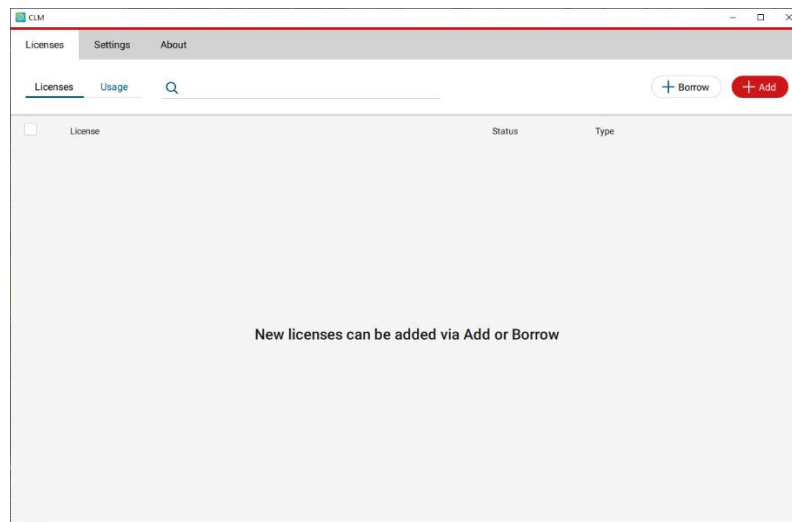
3. Complete the installation by selecting “Finish”.

Licensing Setup

1. Once you have installed Cyclone 3DR, open the Client License Manager for **Floating** Licenses via Cyclone 3DR (Home/Settings/License) or via the program located here:

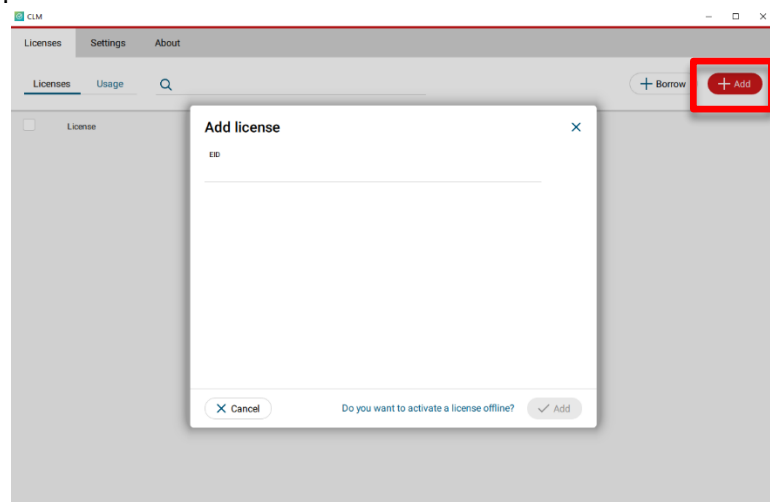
Start Menu | All Programs | Leica Geosystems | Client License Manager



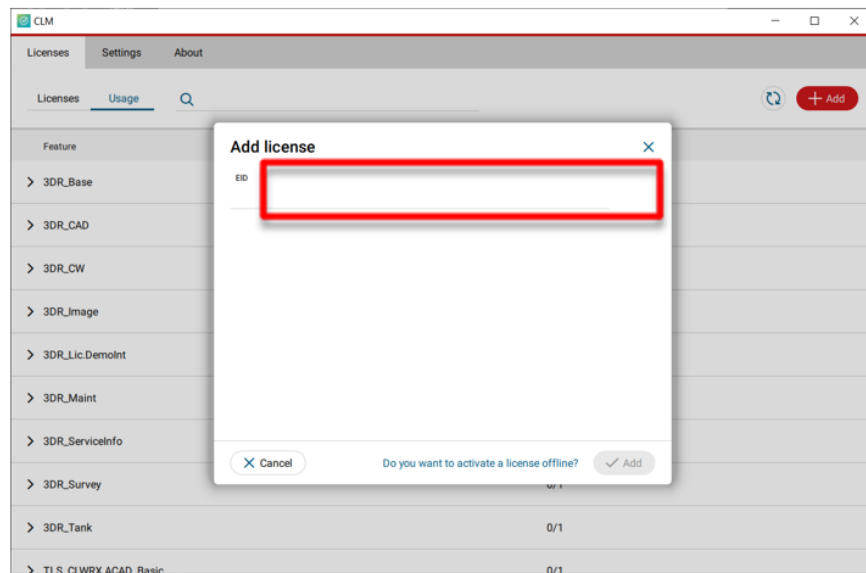


****NOTE* Be sure to choose the CLM Floating option (there are two CLM options and the Nodelocked CLM will not activate your license)***

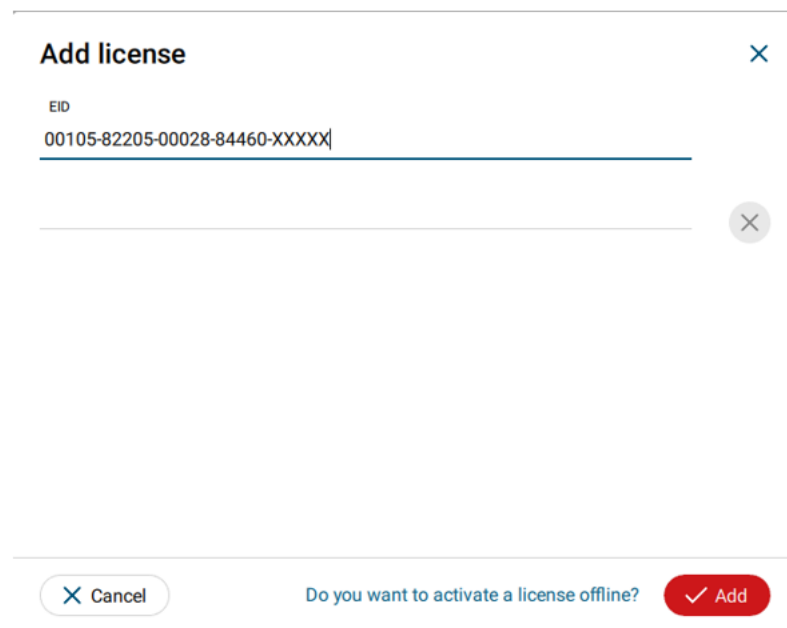
2. Click "Add".



3. Enter your Entitlement ID (EID) in the field (copy / paste). To enter multiple EIDs separate them with a semicolon ";" and no space.



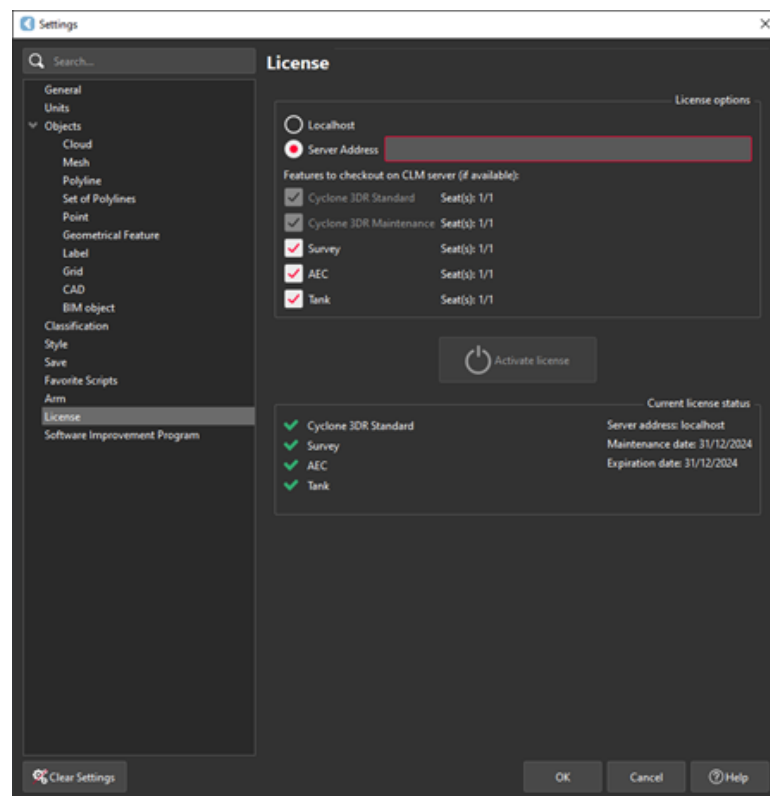
4. After you have entered your EID, click on the “ADD” button in the bottom right of the page



5. Once your licenses are activated you can close CLM and launch or return to Cyclone 3DR.

License	Status	Type	Quantity	Expiration	Maintenance
Product					
> TLS_SW_Lic DemoInt			1	12/31/24	12/31/24
798744			1	12/31/24	12/31/24
3DR_Base			1		
3DR_CAD			1		
3DR_GW			1		
3DR_Image			1		
3DR_Lic DemoInt			1		
3DR_Maint			1		
3DR_ServiceInfo			1		
3DR_Survey			1		
3DR_Tank			1		

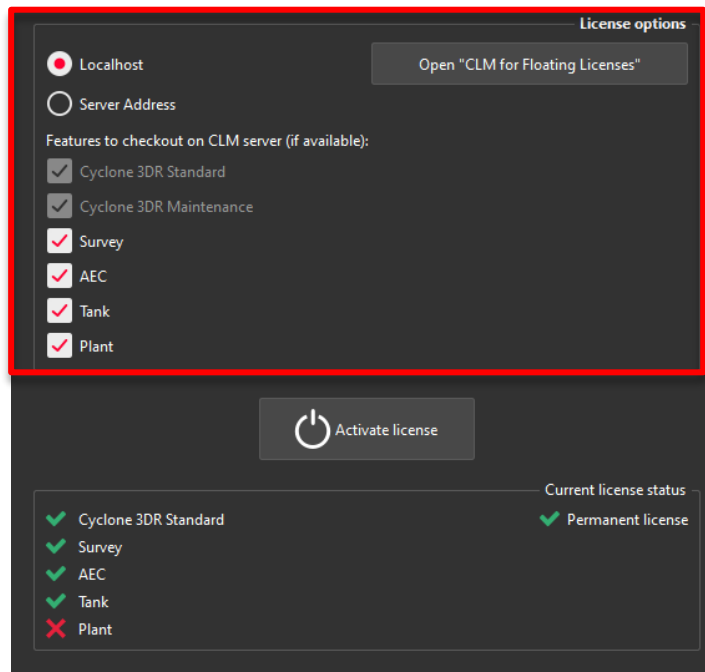
- Go to Home / Settings and select License.



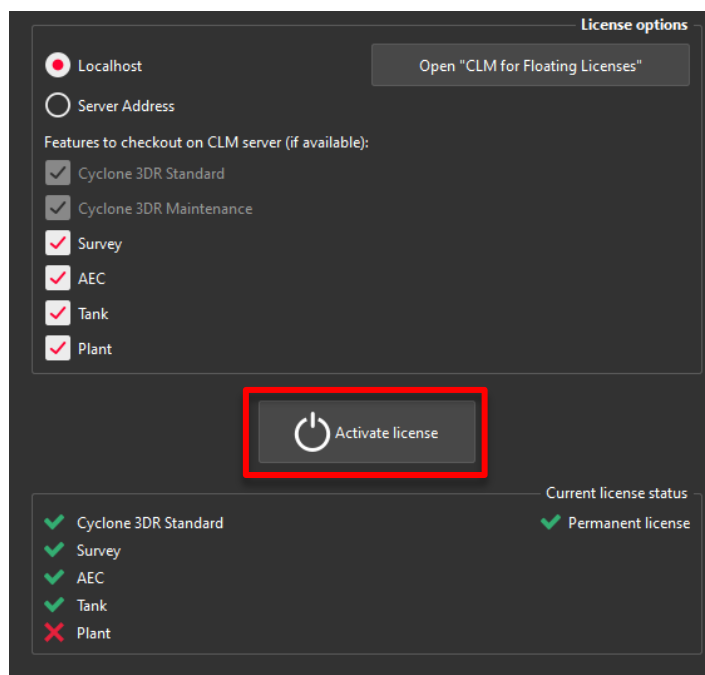
- If you have entered the EID inside your local CLM, select **Localhost**. If the license is on a dedicated server, enter the server's name in **Server Address**.



- You can select the features you want to check out from CLM. The available options to checkout will correspond to the options you purchased which are contained in your EID.



9. Once the options are selected, click on **Activate license**.



Licensing

All users with valid CCP or CCP which was valid as of 17 December 2023 for Cyclone 3DR, can run this new version of Cyclone 3DR.

All users with valid CCP or CCP which was valid as of 17 December 2023 for 3DReshaper, can run this new version of Cyclone 3DR with no new license required.

Users with 3DReshaper licenses with expired CCP must migrate to Cyclone 3DR in order to continue to access updates and support. Please contact your sales or support personnel for more information.

Known Issues

- The Documentation Center is only available in English.
- Some CAD import and export issues might happen. For example, when exporting a cloud in DXF, some entities might be missing. To avoid this, it is preferable to use the Send to AutoCAD option.
- If DXF can be imported with a standard version, DWG requires the AEC or PRO Edition. One workaround is to use the 3DSend command from AutoCAD to Cyclone 3DR.
- .RSH files are natively compatible with Cyclone 3DR, and the last version of 3DReshaper is compatible with .3DR files (with a limit on textures and CAD objects).

Leica Cyclone 3DR interoperability

Import / Export supported file formats

Please reference the Cyclone 3DR Technical Specification for a complete list of supported file types per license.

	Import	Export
Point Cloud	Files ASCII (*.asc, *.csv, *.xyz, *.xyz...) Leica Geosystems (*.pts, *.ptx) and LGS/LGSX (*.LGS/LGSx) Leica Nova MS50/60 (*.sdb, *.xml) ShapeGrabber (*.3pi) 3DReshaper binary file (*.nsd) AutoDesk DXF (*.dxf) STL (*.stl) Polyworks (*.psl) Leica T-Scan + Steinbichler (*.ac) LIDAR data (*.las; laz) Other ASCII (*.*) Zoller and Fröhlich (*.zfs - *.zfc) PLY points without triangles (*.ply) ESRI ASCII (raster format *.asc) FARO (*.fls - *.fws) POLYWORKS (*.psl) E57 (*.E57 files) LandXML files (*.xml), RDBX	ASCII FILES (*.asc, *.csv...) Binary files (*.nsd) Leica Geosystems (*.pts, *.ptx, *.LGSx) E57 (*.e57) IGES (*.igs) LAS (*.las) LAZ (*.laz) Autodesk DXF (*.dxf)
Mesh	STL format (*.stl) Binary PBI format (*.pbi) DXF 3Dface format (*.dxf) Ascii POLY format (*.poly) OBJ format (*.obj) Ascii Leica format (*.msh) OFF files (*.off) PLY (*.ply) GLB format (*.glb, *.gltf)	Ascii and binary STL format (*.stl) Binary PBI format (*.pbi) DXF 3Dface format (*.dxf) Ascii POLY format (*.poly) Vertices only (*.asc) DXF polyline (*.dxf) Ascii Leica format (*.msh) PLY (*.ply) LandXML (*.xml) OBJ format (*.obj) GLB format (*.glb) FBX format (*.fbx) IFC / IFCSite type (*.ifc, *.ifczip)

Contour / Section	IGES format DXF polyline format Binary MLI format (*.mli)	IGES format DXF polyline format Binary MLI format (*.mli) ASCII formats
CAD / BIM Models	IGES STEP DWG IFC RVT	IGES STEP DXF IFC (Piping models)
Project	Cyclone 3DR (*.3dr) DXF - DWG XML Cyclone ModelSpace View (from IMP) JetStream Enterprise project	Cyclone 3DR (*.3dr) DXF PDF 3D SKETCHFAB
Report		PDF CSV BCF
Image	BMP JPEG JPG PNG	Ortho-image including georeferencing information as TXT file JPG JPEG BMP PNG TIF (Ortho-image only)

Send To / Send From

Cyclone 3DR provides “SendTo” features as well to import and export certain kinds of data with third-party products. More information is available in Cyclone 3DR documentation center (from the software help menu).

	Send From	Send To
Point Cloud	-	-
Mesh Surfaces /	AUTODESK AutoCAD HEXAGON MinePlan 3D HEXAGON BricsCAD	AUTODESK AutoCAD HEXAGON MinePlan 3D HEXAGON BricsCAD
Contour Section Points /	AUTODESK AutoCAD HEXAGON MinePlan 3D HEXAGON BricsCAD	AUTODESK AutoCAD HEXAGON MinePlan 3D HEXAGON BricsCAD
CAD Model	AUTODESK AutoCAD HEXAGON BricsCAD	-
Image	-	AUTODESK AutoCAD (ortho-image) HEXAGON BricsCAD

The following commands in Cyclone 3DR include a direct “Send to” capacity that provides the possibility to export the outputs in different layers in the CAD 3rd party software product:

Menu	Feature	Comment
Extract	Contour Lines	1 layer for standard contour lines and values. 1 layer for major contour lines and values.
Extract	Scan to Plan	1 layer per slice (floorplans or sections)
Extract	Virtual Surveyor	1 layer per layer created in 3DR Virtual Surveyor project.
Extract	Scan to Pipe	1 layer per pipe trace
Analysis	Gridded Inspection Surface Analysis with a Grid	Points and values on grid can be directly sent to CAD SW product. Sent to active layer.
Texturing	Extract Orthoimage	Sent to active layer.
Analysis	Profile Extraction Profile 3D Inspection Profile 2D Inspection	1 layer for 2D Grids 1 layer for inspection objects 1 layer per section
Tank	2D Preview / Export	1 layer per axis points 1 layer per axis point quotations.

Compatibility with native JetStream point clouds

The following commands can use native JetStream point clouds (LGS/LGSX files or connection to Cyclone CORE, Cyclone REGISTER 360, Cyclone ENTERPRISE) as inputs. **In other words, it is not required to proceed a CloudWorx > Convert project step prior to execution of the listed features.**

Menu	Feature	Comment
Extract	Virtual Surveyor	No selection is required for this feature. Thus, it can be used for any kind of object in a 3DR project.
Extract	Scan to Plan	Improvement from Cyclone 3DR 2024.0
Surface Modeling	Scan to Mesh	A clipping box as input is recommended to define an area of interest.
Analysis	Stockpile	
Analysis	Visual Notes	No selection is required for this feature. Thus, it can be used for any kind of object in a 3DR project.

The functionalities of the menus View, CloudWorx and Script can obviously be used for JetStream point clouds.

Connect to Cyclone FIELD360

The connection from Cyclone FIELD360 to Cyclone 3DR (2024.0 version) projects is limited to TLS sensors:

- P-XX series
- RTC 360
- BLK 360 (the two generations)

Export BCF tickets

The following commands embed the capacity to export BCF (BIM Collaboration Format) files that contain information from IFC model for an open-BIM experience with other software and BIM solutions.

Cyclone 3DR 2024.0 support BCF 2.1 format (export).

Menu	Feature	Comment
Analysis	Inspection Notes	Input: Inspected BIM Model Feature to report issues from an inspection and that gives the ability to create manual notes that contains screenshots, images from disk, labels and deviation values (attached CSV), clipping object information and coordinates and orientation of viewpoint; but also, a user-defined title, an assignment (email address), a comment and a priority.
Analysis	Visual Notes	Input: BIM Model Feature to report comments and notes based on visual analysis of a BIM design model and the captured reality. The feature gives the ability to create manual notes that contains screenshots, images from disk, distance measurements, clipping object information and coordinates and orientation of viewpoint; but also, a user-defined title, an assignment (email address), a comment and a priority.
Analysis	Clash	Input: A point cloud and a BIM Model Feature to report clashes that contain screenshot, clash status (clash, no clash or undefined) and a comment. All tickets refer to the same assignment (email address).
Analysis	Progress Monitoring	Input: A point cloud and a BIM Model Feature to report the progress monitoring analysis. Default export contains a summary (progress distribution between installed, in progress, not installed and no data). Ability to customize the export and to create additional single tickets per analyzed element depending on their status (installed, not installed, in progress). All tickets refer to the same assignment (email address).

Classification experience

Exchange formats for classification

Classification of point clouds is saved and supported after Import/Export for the following formats:

E57, LAS, LAZ, LGS/LGSx

Models

Within the 2024.0 version of Cyclone 3DR, the following classification models are exposed in the Auto-Classification feature

Name	Application	Used scanners for training	Other recommendations	Features using class information
Indoor Generic	Indoor – All	All	Relevant for Scan to Model workflows.	
Indoor Construction Site	Indoor – All	All	Relevant for “Scan to Verify” workflows for as-built verification for example.	Progress Monitoring
Outdoor for TLS	Outdoor – All	TLS	Generic classification that can be used with other sensor types.	
Heavy Construction UAV	Outdoor - Heavy Construction	UAV Sensors	Recommended for Heavy Construction environment only. Can be used with other sensor types.	
Mobile BLK Filter People	All	BLK2GO and BLKARC	Recommended with BLK2GO and BLKARC only. Clean moving people and objects.	
Road for MMS	Roads	TRK series	Recommended with all MMS sensors and useful with TLS scanners like RTC360 and BLK360 to do extraction.	

Import / Export

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	3DReshaper binary file (*.nsd) AutoDesk DXF (*.dxf) STL (*.stl) Polyworks (*.psl) Leica T-Scan + Steinbichler (*.ac) LIDAR data (*.las; laz) Other ASCII (*.*) Zoller and Fröhlich (*.zfs - *.zfc) PLY points without triangles (*.ply) ESRI ASCII (raster format *.asc) FARO (*.fls - *.fws) POLYWORKS (*.psl) E57 (*.E57 files) LandXML files (*.xml) DOT Products (*.dpl) RDBX	IGES (*.igs) LAS (*.las) LAZ (*.laz) Autodesk DXF (*.dxf)
Mesh	STL format (*.stl) Binary PBI format (*.pbi) DXF 3Dface format (*.dxf) Ascii POLY format (*.poly) OBJ format (*.obj) Ascii Leica format (*.msh) OFF files (*.off) PLY (*.ply) GLB format (*.glb, *gltf)	Ascii and binary STL format (*.stl) Binary PBI format (*.pbi) DXF 3Dface format (*.dxf) Ascii POLY format (*.poly) Vertices only (*.asc) DXF polyline (*.dxf) Ascii Leica format (*.msh) PLY (*.ply) LandXML (*.xml) OBJ format (*.obj) GLB format (*.glb) FBX format (*.fbx) IFC / IFCSite type (*.ifc, *.ifczip)
Contour / Section	IGES format DXF polyline format Binary MLI format (*.mli)	IGES format DXF polyline format Binary MLI format (*.mli) ASCII formats
CAD / BIM Models	IGES STEP DWG IFC RVT	IGES STEP DXF

Project	Cyclone 3DR (*.3dr) DXF - DWG XML Cyclone ModelSpace View (from IMP) JetStream Enterprise project	Cyclone 3DR (*.3dr) DXF PDF 3D SKETCHFAB
Report		PDF CSV BCF
Image	BMP JPEG JPG PNG	Ortho-image including georeferencing information as TXT file JPG JPEG BMP PNG TIF

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Cyclone 3DR provides “SendTo” features as well to import and export certain kinds of data with third-party products. More information is available in Cyclone 3DR documentation center (from the software help menu).

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Point Cloud	-	-
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Contour Section Points /	AUTODESK AutoCAD HEXAGON MinePlan 3D HEXAGON BricsCAD	AUTODESK AutoCAD HEXAGON MinePlan 3D HEXAGON BricsCAD
CAD Model	AUTODESK AutoCAD HEXAGON BricsCAD	-
Image	-	AUTODESK AutoCAD (ortho-image) HEXAGON BricsCAD

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Texturing	Extract Orthoimage	Sent to active layer.
Analysis	2D Preview Export	1 layer for 2D Grids 1 layer for inspection objects 1 layer per section 1 layer per axis points 1 layer per axis point quotations.
Coord Sys		
Tank		

Compatibility with native JetStream point clouds

The following commands can use native JetStream point clouds (LGS files or connection to Cyclone CORE, Cyclone REGISTER 360, Cyclone ENTERPRISE) as inputs. **In other words, it is not required to proceed a CloudWorx > Convert project step prior to execution of the listed features.**

Menu	Feature	Comment
Extract	Virtual Surveyor	Note that selecting is not required for this feature. Thus, it can be used for any kind of object in a 3DR project.
Surface Modeling	Scan to Mesh	A clipping box as input is recommended to define an area of interest.
Analysis	Stockpile	

The functionalities of the menus View, CloudWorx and Script can obviously be used for JetStream point clouds.

Point clouds with classification

Classification of point clouds is saved and supported after Import/Export for the following formats:

E57, LAS, LAZ, LGS

Export BCF tickets

The following commands embed the capacity to export BCF (BIM Collaboration Format) files that contain information from IFC model for an open-BIM experience with other software and BIM solutions.

Cyclone 3DR 2024.0 support BCF 2.1 format (export).

Menu	Feature	Comment
Analysis	Inspection Notes / BCF	Input: Inspected BIM Model Feature to report issues from an inspection and that gives the ability to create manual notes that contains screenshots, images from disk, labels and deviation values (attached CSV), clipping object information and coordinates and orientation of viewpoint ; but also a user-defined title, an assignment (email address), a comment and a priority.
Analysis	Clash	Input: A point cloud and a BIM Model Feature to report clashes that contain screenshot, clash status (clash, no clash or undefined) and a comment. All tickets refer to the same assignment (email address).
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