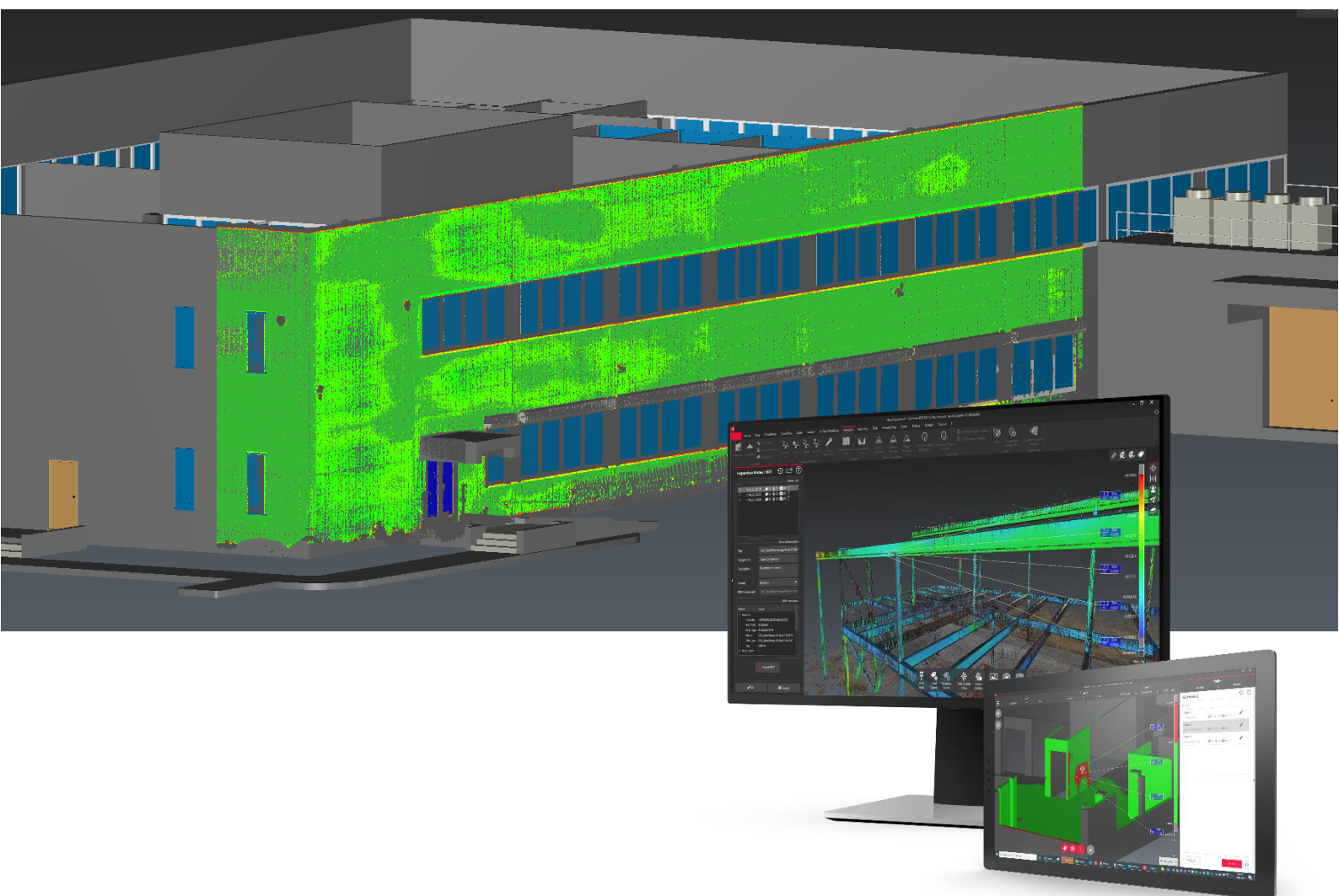


Leica Geosystems Release Notes

Product: Leica Cyclone 3DR 2024.0.4
Date: 30 April 2024
From: HDS Software Product Management



Contents

| | |
|--|----|
| What's New | 3 |
| Improvements | 3 |
| Bugfixes | 3 |
| Generic specifications | 3 |
| Leica Cyclone 3DR 2024.0 Compatibility | 3 |
| Recommended Computer Specifications | 3 |
| Installation and Licensing Recommendations | 4 |
| Installation update Procedure | 4 |
| Licensing Setup..... | 5 |
| Licensing | 9 |
| Known Issues | 10 |
| Leica Cyclone 3DR interoperability | 11 |
| Import / Export supported file formats | 11 |
| Send To / Send From | 13 |
| Compatibility with native JetStream point clouds | 14 |
| Connect to Cyclone FIELD360 | 14 |
| Export BCF tickets | 15 |
| Classification experience | 16 |
| Exchange formats for classification | 16 |
| Models | 16 |

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:** The new functions `ScriptUtil.SetCameraPosition()` and `ScriptUtil.SetCameraDirection()` were added to edit the current camera definition.
- **Script:** Quaternions can now be used in the `SMatrix` and `SCameraExternal` classes.

Bugfixes

- **3D Scene:** A crash could occur when the static number of point was set to 0 (cloud display settings). Fixed.
- **File > Export point cloud:** When exporting ASCII-type format point clouds, wrong coordinates could be exported (when a user-defined UCS was checked and active and simultaneously the unit of the export was different from the unit of the 3DR project). Fixed.
- **View > Camera Path:** The original polyline resolution wasn't saved when generating the camera path, which could lead to loss of quality during the animation. 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

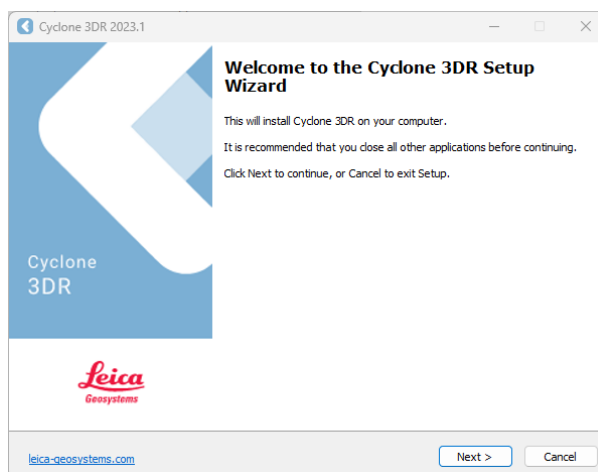
Hard Disk: 10 GB free disk space

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

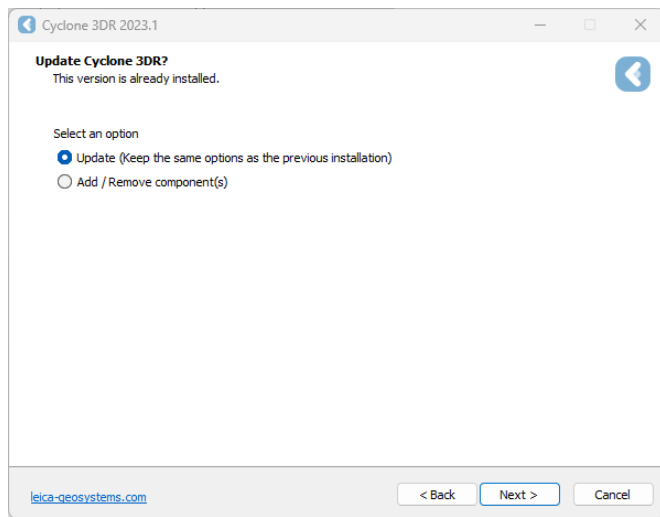
Installation and Licensing Recommendations

Installation update Procedure

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



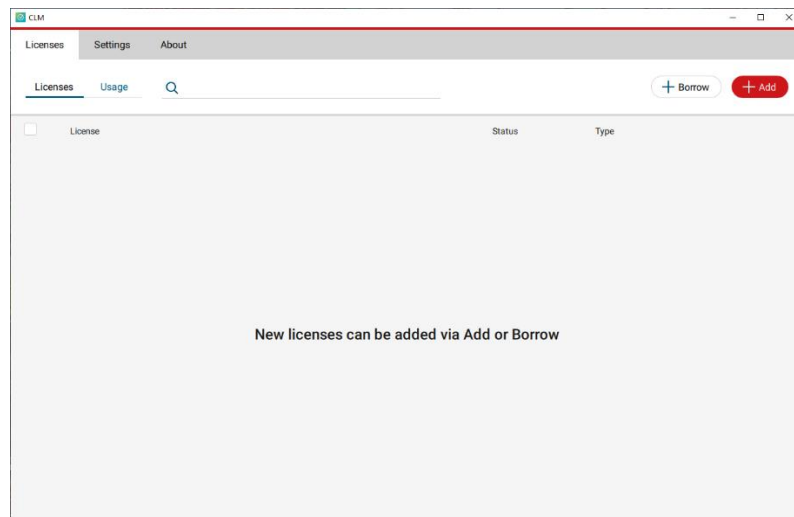
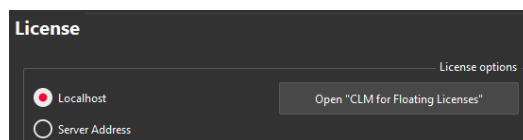
2. Select the option to update Cyclone 3DR (or repair if you want to change installing options)



3. Complete the installation by selecting “Finish”.

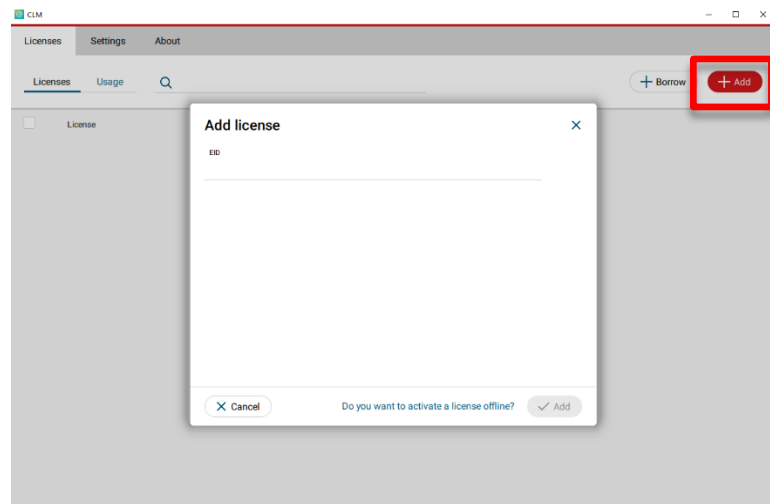
Licensing Setup

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

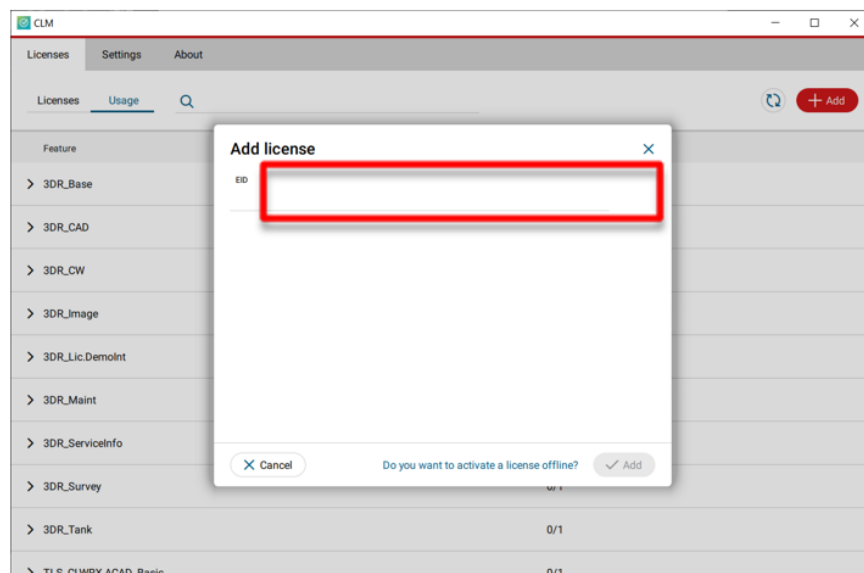


****NOTE* Be sure to choose the CLM Floating option (there are two CLM options and the Nodelocked CLM will not activate your license)***

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

Add license ✕

EID

00105-82205-00028-84460-XXXXX

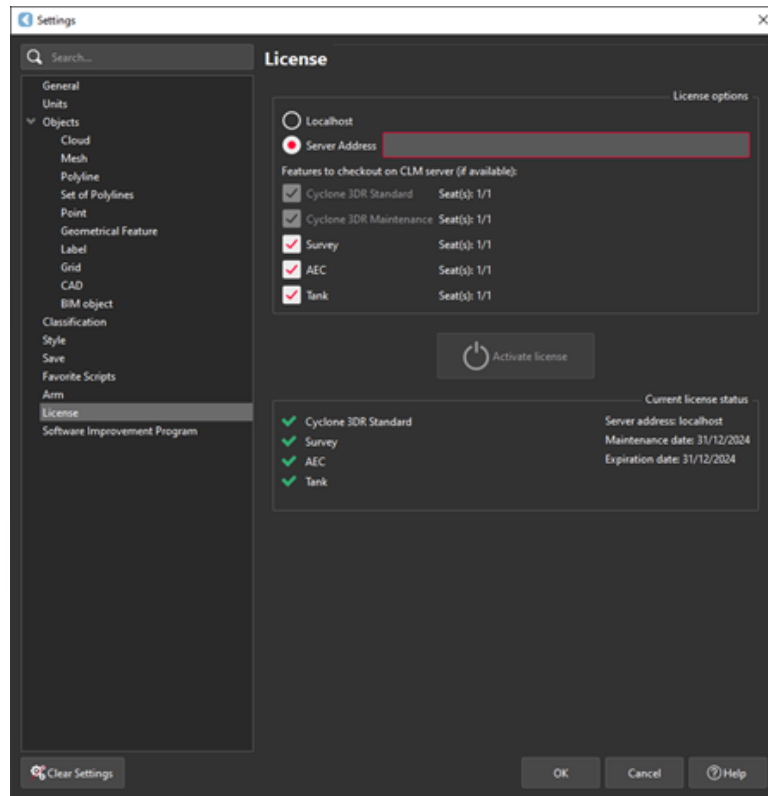
✕ Cancel
Do you want to activate a license offline?
✓ Add

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

The screenshot shows the 'Licenses' window in CLM. The window title is 'CLM' and it has tabs for 'Licenses', 'Settings', and 'About'. The 'Licenses' tab is active, showing a search bar and '+ Borrow' and '+ Add' buttons. Below is a table of licenses:

| License | Quantity | Status | Type |
|-------------------|----------|----------|----------|
| Product | | | |
| TL5_SW_Lic.Demo01 | 1 | 12/31/24 | 12/31/24 |
| 798744 | 1 | 12/31/24 | 12/31/24 |
| 3DR_Base | 1 | | |
| 3DR_CAD | 1 | | |
| 3DR_CW | 1 | | |
| 3DR_Image | 1 | | |
| 3DR_Lic.Demo01 | 1 | | |
| 3DR_Main | 1 | | |
| 3DR_ServiceInfo | 1 | | |
| 3DR_Survey | 1 | | |
| 3DR_Tank | 1 | | |

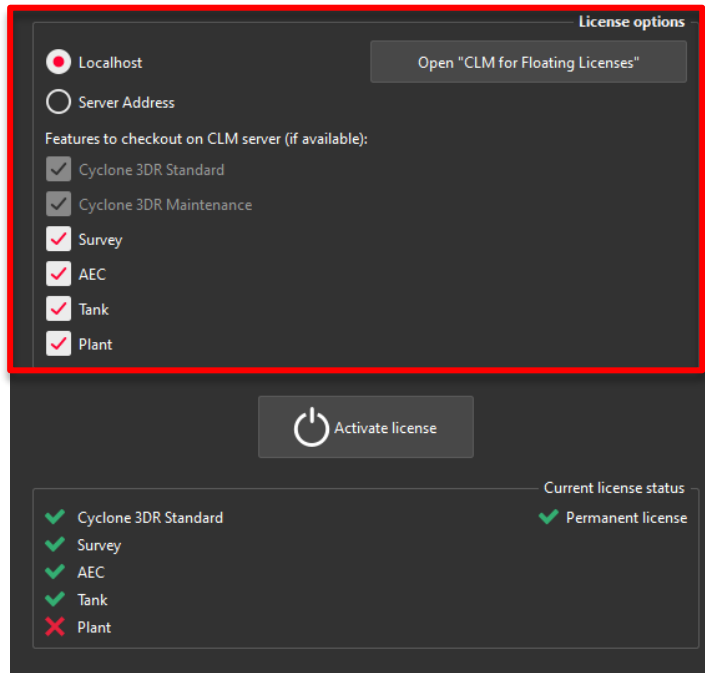
6. Go to Home / Settings and select License.



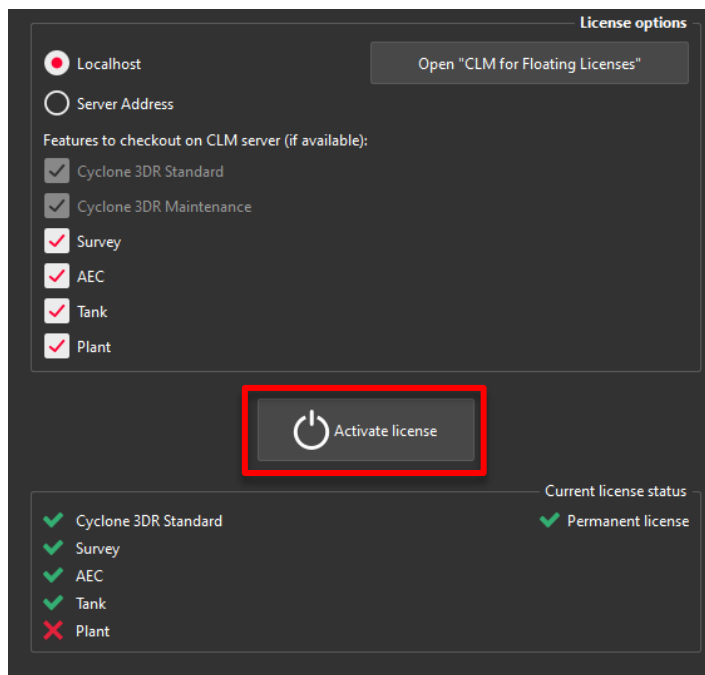
7. If you have entered the EID inside your local CLM, select **Localhost**. If the license is on a dedicated server, enter the server's name in **Server Address**.



8. 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 capacity to “Send to Hexagon MinePlan 3D” is broken with Cyclone 3DR 2024.0. The current workaround is to exchange data through CAD files (like DXF format).
- 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. |

The capacity to “Send to Hexagon MinePlan 3D” is broken with Cyclone 3DR 2024.0. The current workaround is to exchange data through CAD files (like DXF format).

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, 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. | |