

Leica Geosystems

Release Notes

Product Leica JetStream Viewer 2020.1
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From HDS Software Product Management

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What's New

This is a major release which includes support for models in JetStream Viewer. Please note that only LGS files published from parallel releases of Cyclone, Cyclone REGISTER 360 and JetStream Enterprise with a Cyclone PUBLISHER Pro license (or equivalent) will support models.

Model Support

With this release, JetStream Viewer has taken the major step forward of supporting common model formats within the viewer. Users can now view their LGS reality capture data at the same time as IFC and OBJ models to support a variety of visualization and QA workflows, including:

- Crime scene visualization and presentations with Snapshots and Markups
- Visual QA of as-built conditions against design models
- Visual inspection or fitting of equipment and rough path planning for installation
- Customer visualization of new building projects or additions in context

JetStream Viewer remains a free viewer that can be installed locally or run from a thumb drive, making it the perfect addition to customers' existing reality capture workflows and a wonderful tool for client communication. The Snapshot, Markup and presentation tools in the Viewer now support models as well, allowing users to create engaging and descriptive presentations of their projects that can be saved as LGS files to be shared with others.

The speed and performance that users expect from reality capture data in JetStream Viewer extends to model support. Models are loaded into projects in a matter of seconds and then, once saved to the file, load instantly with every subsequent use of the file. Dozens of models can be loaded into a single scene without affecting performance.

Extra care has been paid to making model support a seamless extension of the JetStream Viewer experience with streamlined navigation supported via mouse, keyboard or touch and a new Cyclone REGISTER 360-style Assistant Panel that provides contextual help and tips.

This product offers huge added value to customers with a Cyclone PUBLISHER Pro license. When published from Cyclone CORE 2020.1 or later, the Cyclone REGISTER 360 family 2020.1 or later as LGS or into JetStream Enterprise 2020.1 or later and then re-published as an LGS, with a Cyclone PUBLISHER Pro license*, LGS files will support model viewing and saving models via the existing "Save As" command (similar to the existing workflow to save Snapshots).

This release requires synchronous 2020.1 versions of each product for publishing data, accessing the new model features in the viewer, and saving updates.

** Or a Cyclone PUBLISHER Pro equivalent license, which includes Cyclone JetStream PUBLISHER or Cyclone TruView PUBLISHER licenses with active CCP from within the mentioned 2020.1 product versions.*

Compatibility

Point cloud compatibility

JetStream Viewer 2020.1 supports models in LGS files only. LGS files must be published from Cyclone CORE 2020.1 or later, the Cyclone REGISTER 360 family 2020.1 or later as LGS or into

JetStream Enterprise 2020.1 or later and then re-published as an LGS, with a Cyclone PUBLISHER Pro license*

** Or a Cyclone PUBLISHER Pro equivalent license, which includes Cyclone JetStream PUBLISHER or Cyclone TruView PUBLISHER licenses with active CCP from within the mentioned 2020.1 product versions.*

At this time, models cannot be added to JetStream Enterprise projects.

Reference the following table to determine if models are supported in your LGS file.

LGS Published from	PUBLISHER License	Supports Adding Models
Cyclone 2020.1	PUBLISHER Standard	✗
Cyclone 2020.1	PUBLISHER Pro	✓
Cyclone 2020.1	JetStream PUBLISHER (with active CPP)	✓
Cyclone 2020.1	TruView PUBLISHER (with active CPP)	✓
Cyclone REGISTER 360 family 2020.1	PUBLISHER Standard	✗
Cyclone REGISTER 360 family 2020.1	PUBLISHER Pro	✓
Cyclone REGISTER 360 family 2020.1	JetStream PUBLISHER (with active CPP)	✓
Cyclone REGISTER 360 family 2020.1	TruView PUBLISHER (with active CCP)	✓
JetStream Enterprise 2020.1	From any version of the Cyclone REGISTER family with PUBLISHER Standard	✗
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020.1 or later with PUBLISHER Pro	✓
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020 or earlier with PUBLISHER Pro	✗
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020.1 or later with JetStream PUBLISHER (with active CPP)	✓
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020 or earlier with JetStream PUBLISHER (with active CPP)	✗
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020.1 or later with TruView PUBLISHER (with active CCP)	✓
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020 or earlier with TruView PUBLISHER (with active CCP)	✗
JetStream Enterprise 2020 or earlier	Any license level	✗
Cyclone 2020 or earlier	Any license level	✗
Cyclone REGISTER 360 family 2020 or earlier	Any license level	✗

OBJ compatibility

All OBJ versions are compatible with JetStream Viewer.

If the OBJ has a material file, those materials will be rendered in JetStream Viewer. If the file does not have a material file, colors will be assigned to the model components to clearly distinguish its components.

IFC compatibility

The following IFC versions are compatible with JetStream Viewer:

- IFC2X
- IFC2X2
- IFC2X3
- IFC2X4
- IFC4

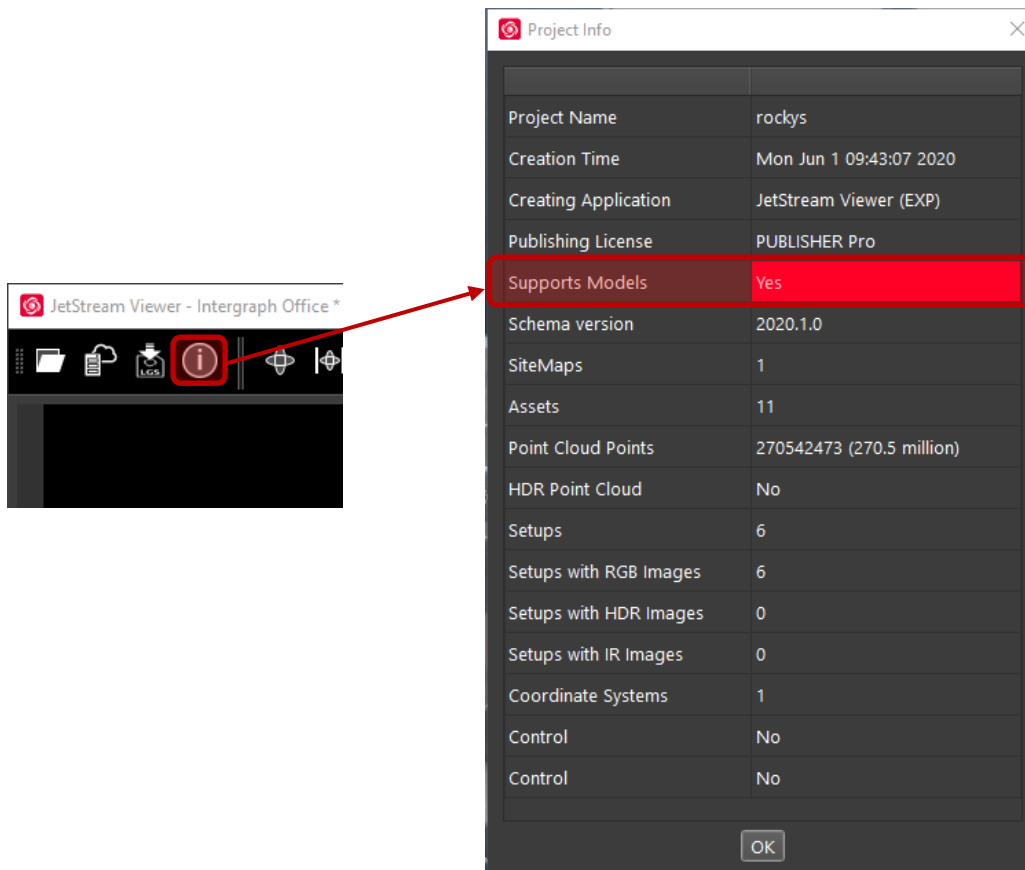
To check the version of IFC you have, open the IFC in a text editor and locate the Schema.

```
1 ISO-10303-21;
2 HEADER;
3
4 /*****
5 * STEP Physical File produced by: The EXPRESS Data Manager Version 5.02.0100.07 : 28 Aug 2013
6 * Module: EDMstepFileFactory/EDMstandAlone
7 * Creation date: Tue May 12 09:08:37 2020
8 * Host: AOAKNOBMIKE01
9 * Database: C:\Users\mike\AppData\Local\Temp\3db4e91d-4693-4f8a-95f3-5a7d8
10 * Database version: 5507
11 * Database creation date: Tue May 12 09:08:33 2020
12 * Schema: IFC2X3
13 * Model: DataRepository.ifc
14 * Model creation date: Tue May 12 09:08:33 2020
15 * Header model: DataRepository.ifc_HeaderModel
16 * Header model creation date: Tue May 12 09:08:33 2020
17 * EDMuser: sdai-user
18 * EDMgroup: sdai-group
19 * License ID and type: 5605 : Permanent license. Expiry date:
20 * EDMstepFileFactory options: 020000
```

If the IFC has a material file, those materials will be rendered in JetStream Viewer. If the file does not have a material file, colors will be assigned to the model components to clearly distinguish its components.

Model Loading Workflow

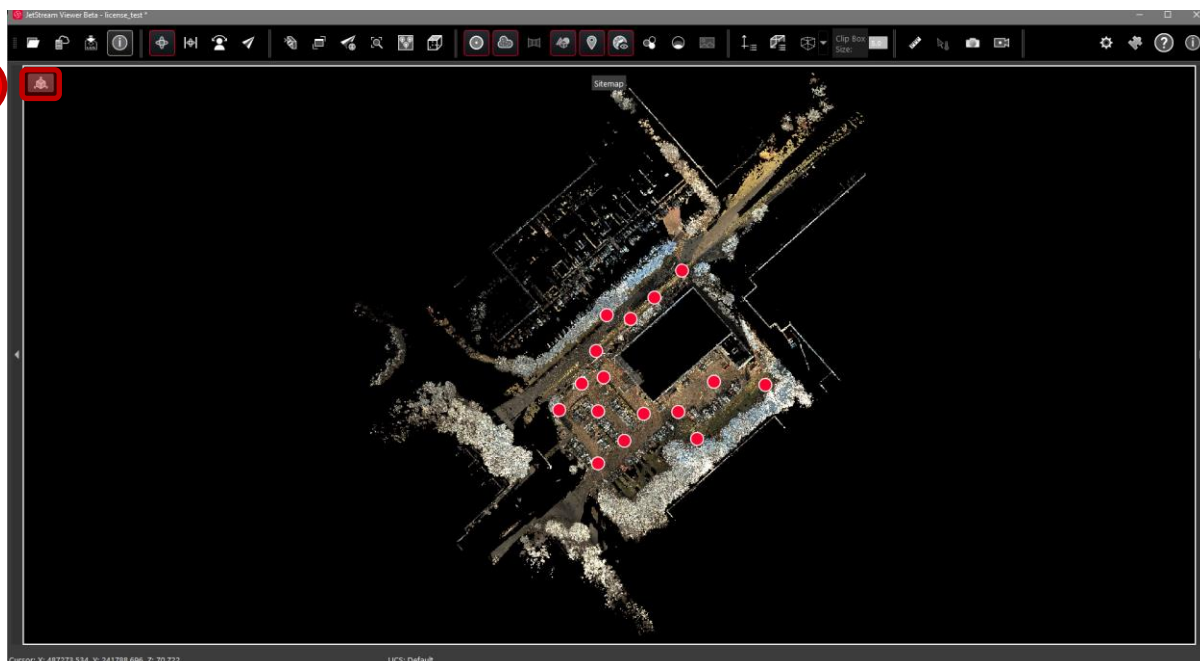
1. Either drag-and-drop or browse to a model-compatible LGS file.
2. If you are unsure whether your LGS file meets the above requirements, open the LGS file in JetStream Viewer and select the **Info** button in the top left of the tool bar and reference the **Supports Models** row.



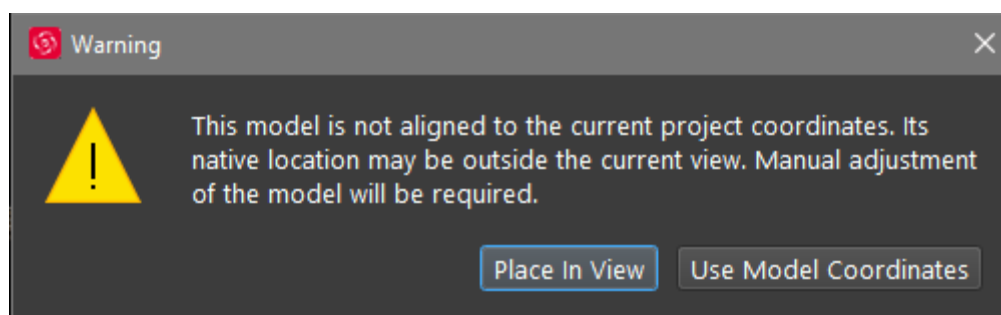
Note: The LGS file must contain a point cloud

3. Once the LGS file is loaded, drag-and-drop your OBJ or IFC model(s) into JetStream Viewer.
 - a. The viewer can support multiple models of either format simultaneously.
 - b. Models will not appear in the SiteMap view. If the SiteMap is fully extended, minimize the SiteMap view to see the model.
 - c. Models cannot be viewed without an LGS file with a point cloud open. Once a model is loaded, if a different LGS file is opened, the model will not be preserved when the LGS file is changed.

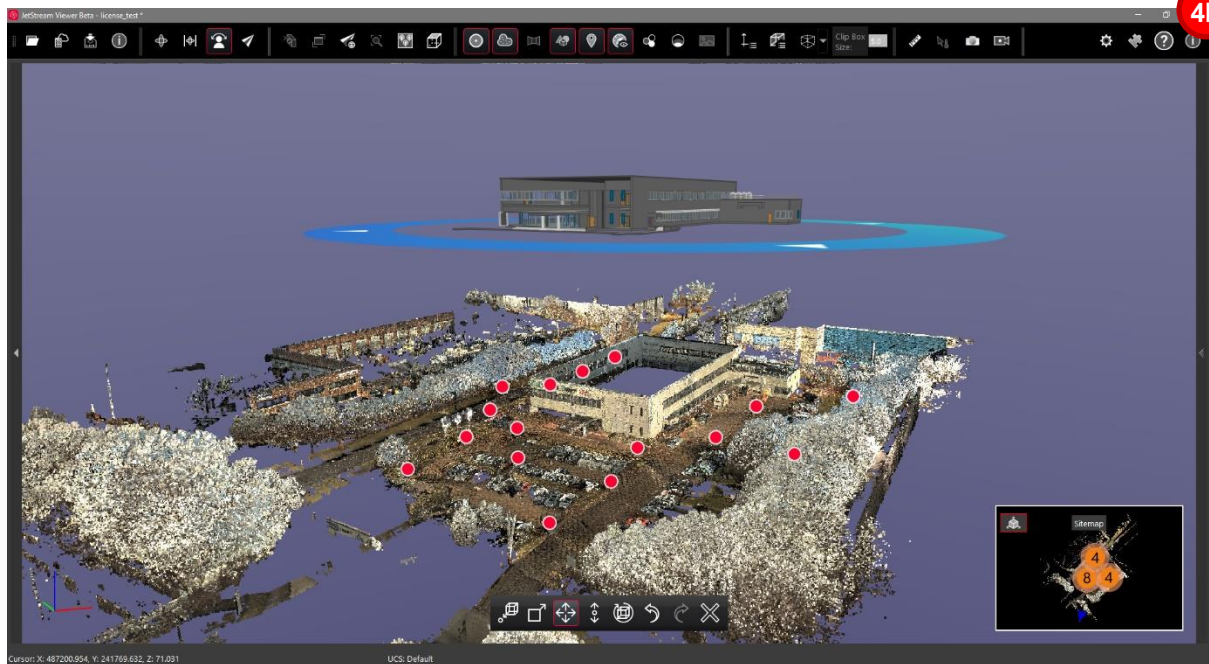
2b



4. If the model was created in the same coordinate system as the point cloud, the model will automatically be placed in that coordinate system. Some manual adjustment may be required depending on the quality of the original alignment.
5. If the model was created in a different coordinate system, you will receive a message upon import which asks whether you want to **Place in View** or **Use Model Coordinates**.

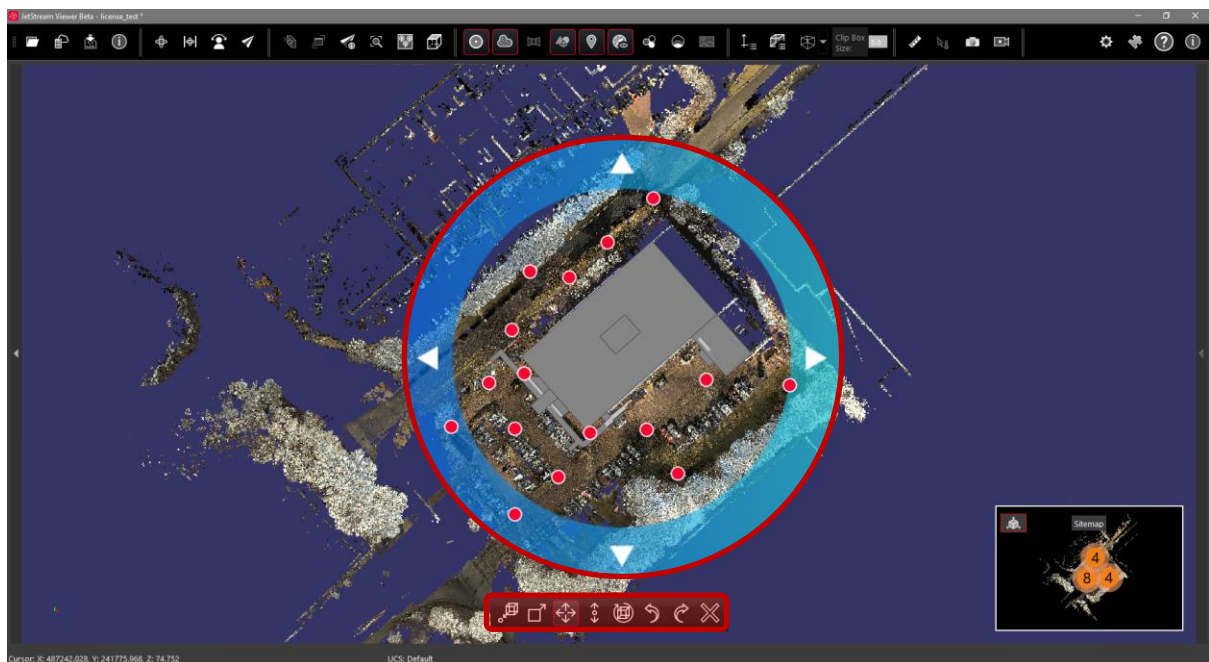


- a. Using the model's native coordinate system may result in the model and point cloud being very far apart, causing difficulty to align.
- b. It is recommended that you select **Place in View**. This will grossly place the model within the viewing windows bounds (while respecting scale) but will not do a fine alignment of the point cloud and model.
- c. Further manual alignment will be required.



Model added to an LGS file using the Place in View option.

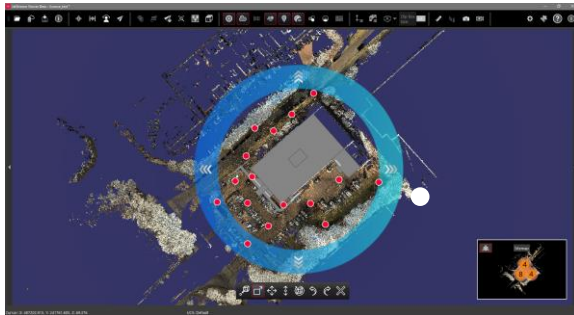
6. If necessary, make additional adjustments to align your model.
 - a. After initial loading, the model will be in editing mode automatically. If you have exited this mode, double click on your model to enter model editing mode again. A blue ring will appear around the model to show its extents and the model editing toolbar will appear at the bottom of the viewing window.



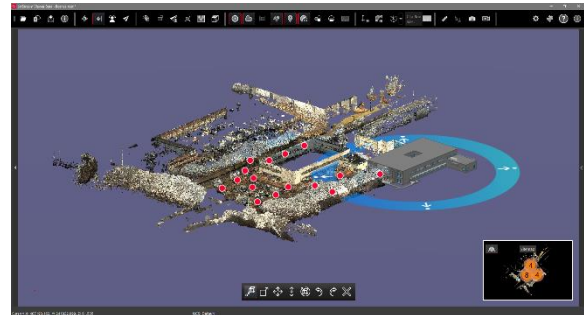
- b. To make large placement adjustments use the **Align Model to Point** button.



- i. Hotkey S will also initiate the tool.
- ii. Once the tool is selected, click in the point cloud. the centroid of the model will be aligned to the selected point. This will not orient the model to the point cloud. The point cloud must be turned on for this function to work.
- iii. Once the model is close to the desired final location, the other tools can be used for precise alignment.



Point selection shown in White.

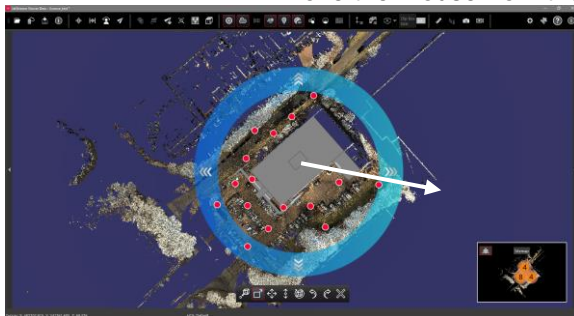


Model has been moved in the X, Y and Z directions. The Model centroid is aligned to the selected point.

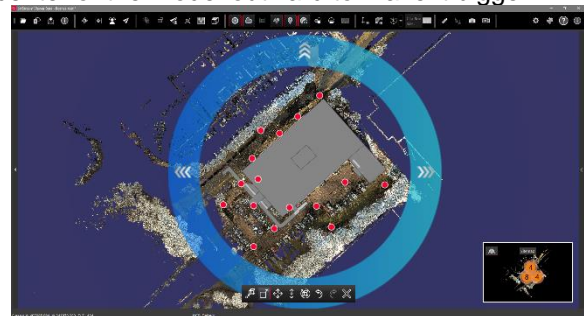
- c. To adjust the size of the model, select the **Scale** button



- i. Hotkey D will also initiate the tool.
- ii. Move the mouse from the center of the model outward to make it bigger.

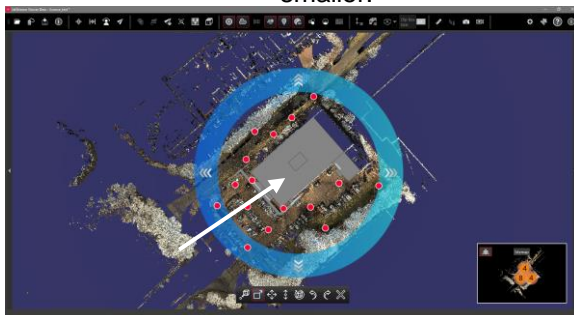


Direction of cursor movement shown.

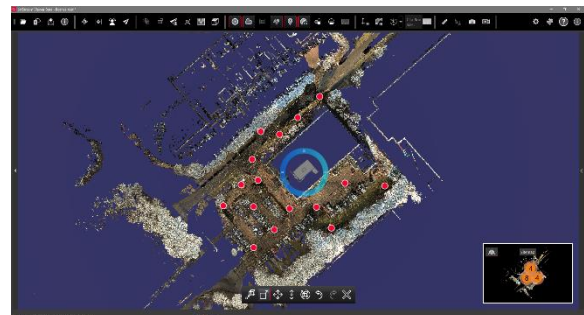


Model has been enlarged. Aspect ratio is maintained.

- iii. Move the mouse from the outside of the model to the center to make it smaller.



Direction of cursor movement shown.



Model has been reduced. Aspect ratio is maintained.

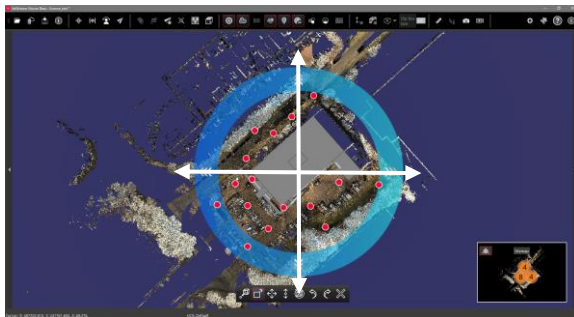
- iv. The aspect ratio of the model will always remain the same. No distortion will occur.

Note: For all tools, hold the ALT key to lower mouse sensitivity by 10x when performing the action.

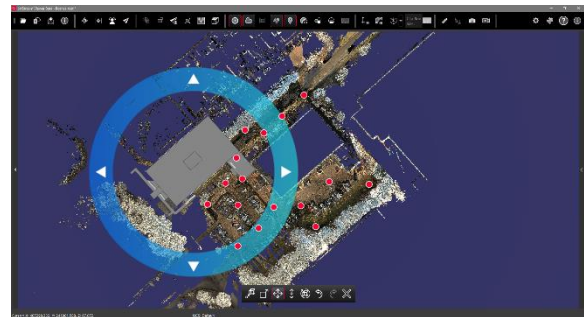
- d. To make smaller adjustments along the X or Y axis, select the **Move X/Y** button.



- i. Hotkey F will also initiate the tool.
- ii. Left click and drag the model to move it freely in the X/Y plane OR use the ARROW keys on your keyboard to nudge the model.



Possible directions of movement shown



Model has been moved along the X axis.

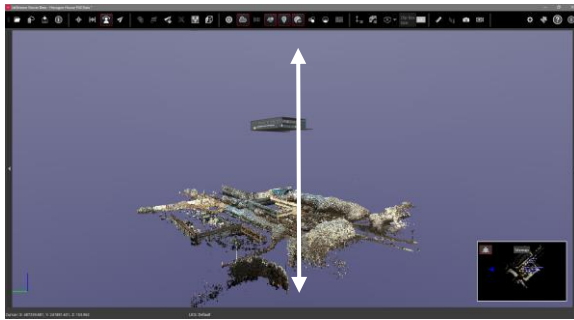
- iii. Hold the SHIFT key to lock the axis along the selected plane when using free form movement. When holding SHIFT and moving the object, the movement axis will be locked to the last direction in which it was moved.

Note: Move X/Y obeys the UCS of the project. The UCS cannot be changed in JetStream Viewer.

- e. To make smaller adjustments along the Z axis, select the **Move Z** button.



- i. Hotkey G will also initiate the tool.
- ii. Left click and drag the model to move it freely in the Z plane OR use the up and down ARROW keys on your keyboard to nudge the model.



Possible directions of movement shown

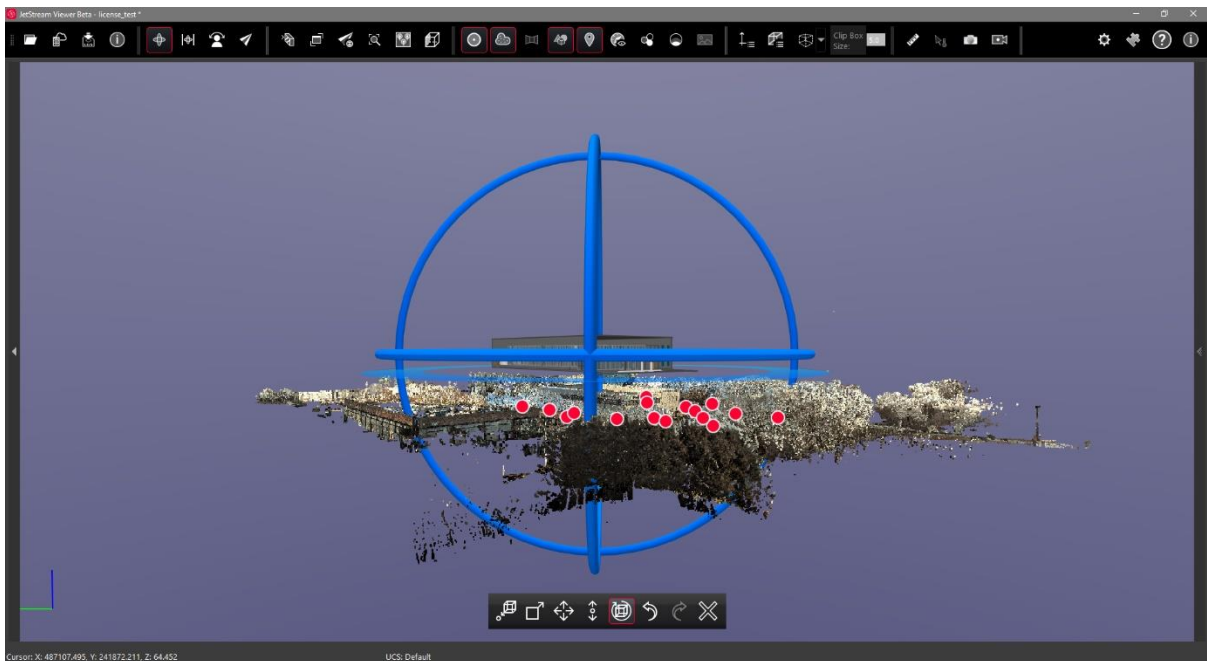


Model has been moved along the Z axis.

- f. To rotate the model, select the **Rotate** button.

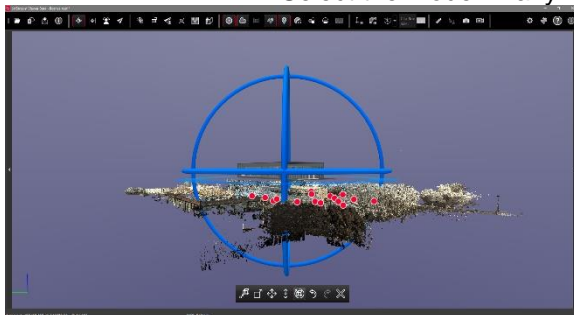


- i. Rings will appear around the three axes of the model.

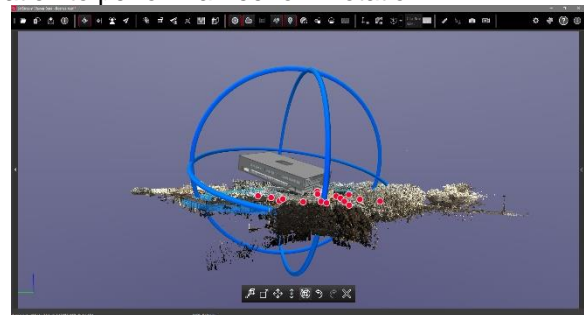


- ii. Hotkey H will also initiate the tool.

- iii. Select the model in any location to perform a free form rotation.



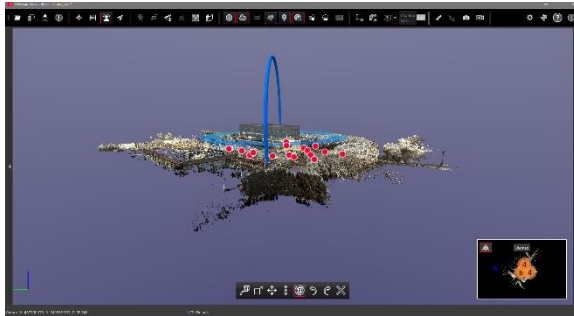
Model prior to free rotation.



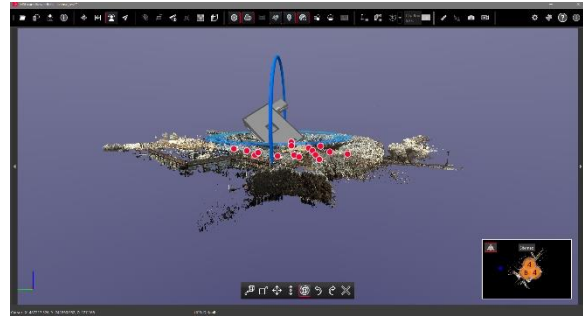
Model has been rotated freely in space.

- iv. While in free form rotation mode, hold the SHIFT key to lock the rotation direction to a single axis. The rotation axis will be locked to the last direction

in which it was rotated. OR select one of rings to rotate the model along the chosen axis.



Model prior to rotation on the Z axis. Z axis selected.



Model has been rotated along the Z axis only.

- g. Use the **Undo** and **Redo** buttons to step back to correct any mistakes. The **Undo** and **Redo** buttons will work for all edits to the model(s) within a single session.



- i. Use CTRL+ Z to Undo and CTRL+ Y to Redo an action.
- ii. If you accidentally Undo loading the model, use CTRL + Y to re-load it without the loading time.

Note: All model actions are recorded in a single sequence, Undo/Redo operations are not stored on a per-model basis.

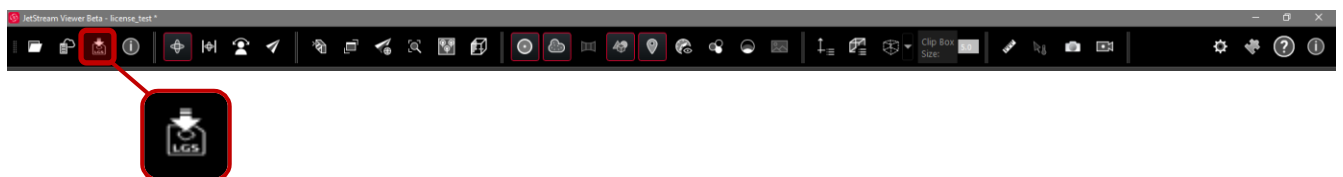
- h. Once you are happy with the placement of your model, select the **Exit Editing Mode** button or click the ESC key. This will prevent any accidental edits to the model.



- i. Model visibility can be toggled on/off by selecting the Show Models button from the toolbar

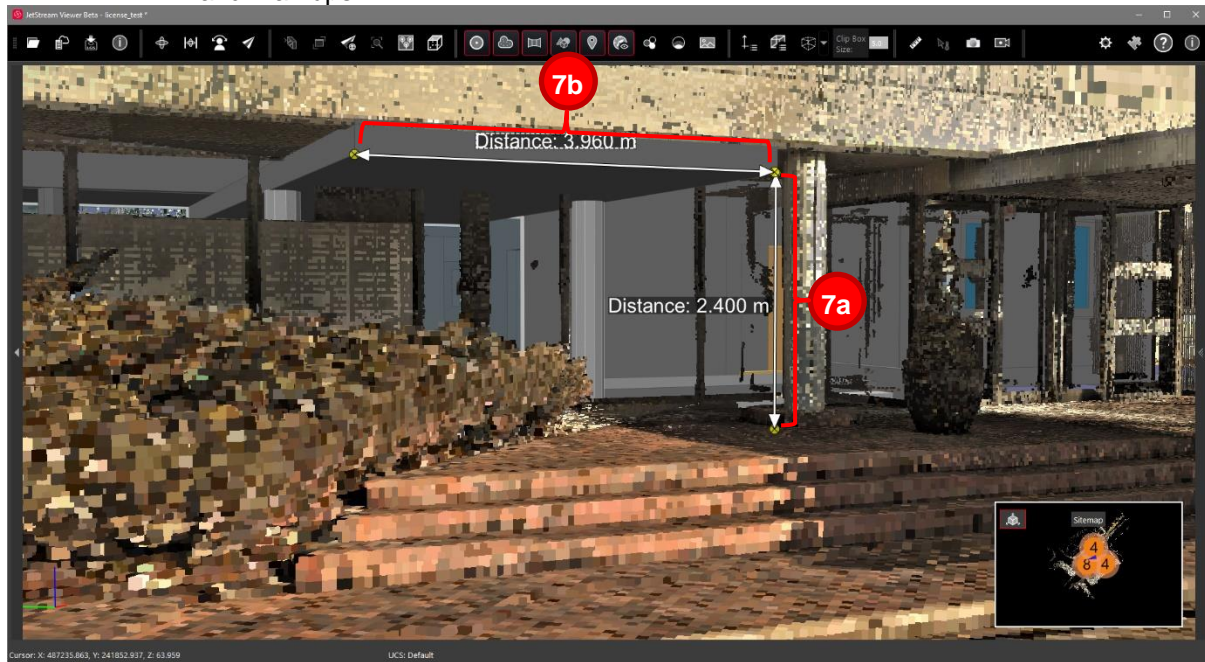


7. To save your model to the LGS file, select **Save Project File** from the toolbar.

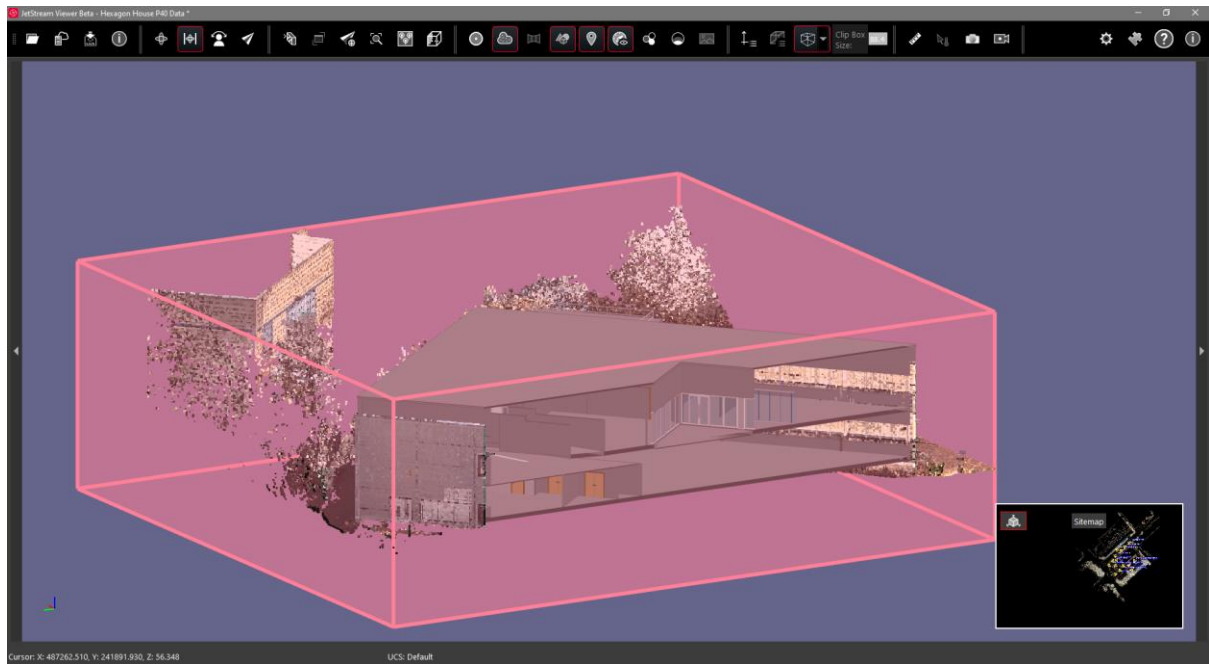


Note: Your model will not be saved to the LGS file automatically. To preserve your work, you must save the model to a new copy of the LGS file.

8. Models can be used in Snapshots and Markups.
 - a. Measurements can be made between surfaces of the model and the point cloud.
 - b. Measurements can be made between surfaces of the model exclusively.
 - c. Please reference JetStream Viewer help for complete information about Snapshots and Markups.

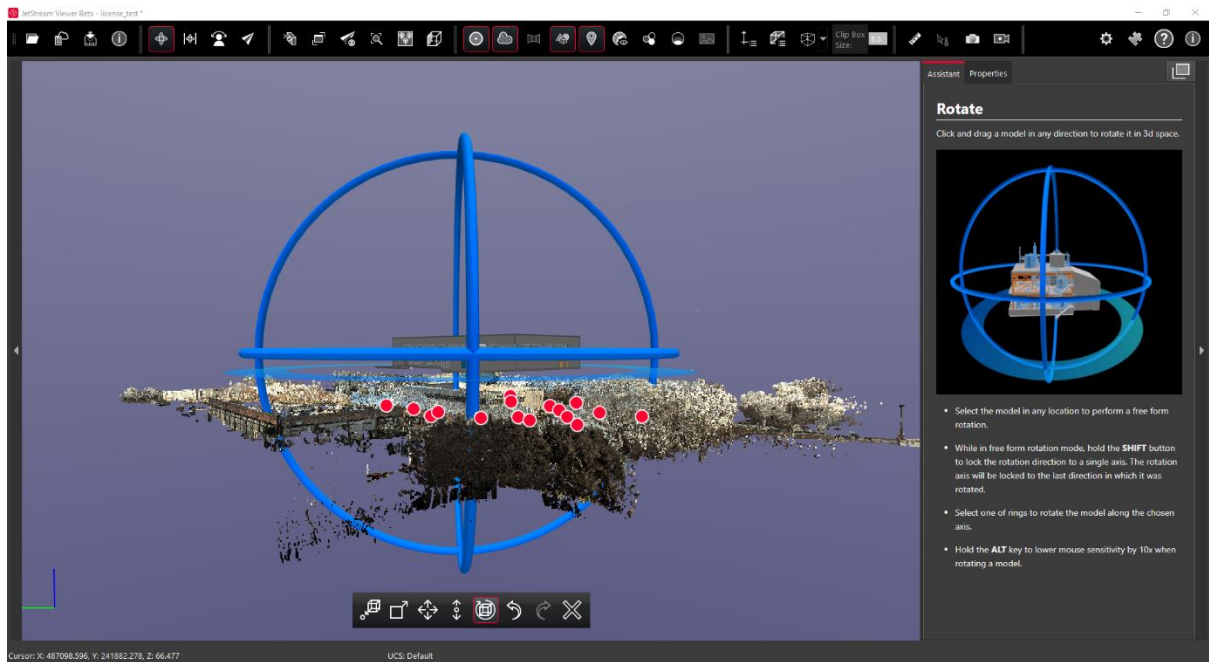


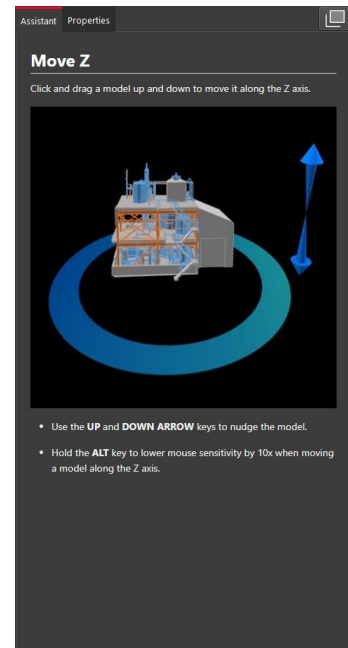
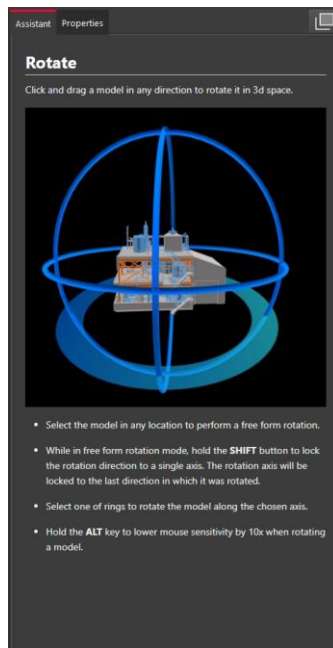
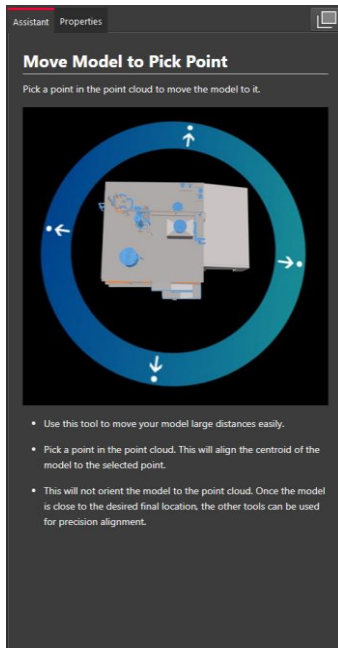
9. Clipping Models
 - a. Models will obey clips created in JetStream Viewer or those created in Cyclone or the Cyclone REGISTER 360 family and published as part of the LGS file.
 - b. Please reference JetStream Viewer help for complete information about Clip Boxes.
 - c. Please reference Cyclone and Cyclone REGISTER 360 help respectively for information about creating and publishing Limit Boxes as Clips.



10. The Assistant Panel in the right popout side panel of the viewing window provides contextual tips and relevant hot keys throughout the model alignment process whenever a model is selected and in active editing mode. The first time a model is added to JetStream Viewer, this panel will automatically open.

- a. Once the Assistant Panel is collapsed, that state will be preserved for the rest of the session and all future sessions.





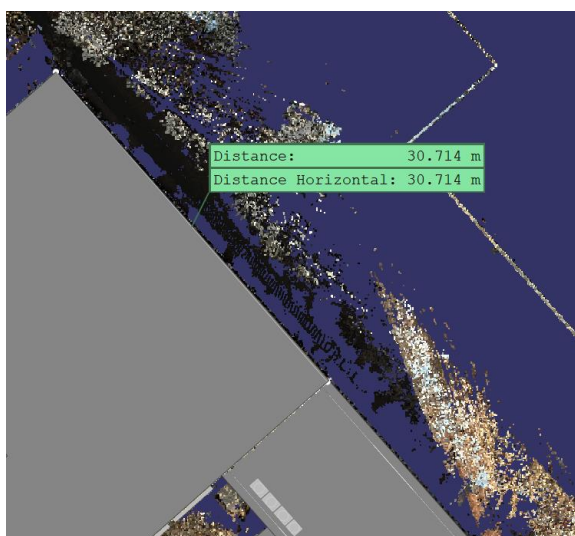
Additional Features

Simplified measurement

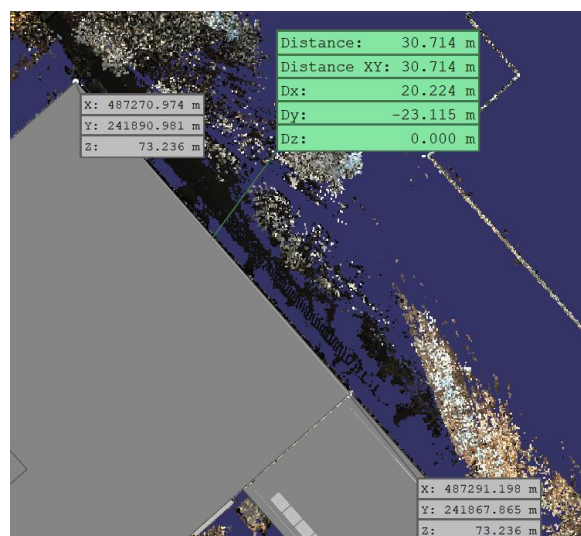
Users now have two options for the measurement annotation style

- Simple
- Advanced

The simplified measurement annotation includes the distance and the X/Y distance only, while the Advanced mode will be familiar to users of previous version of JetStream as the default annotation style including the Distance, the X,Y and Z coordinates of each pick point and the delta between the points along each axis.

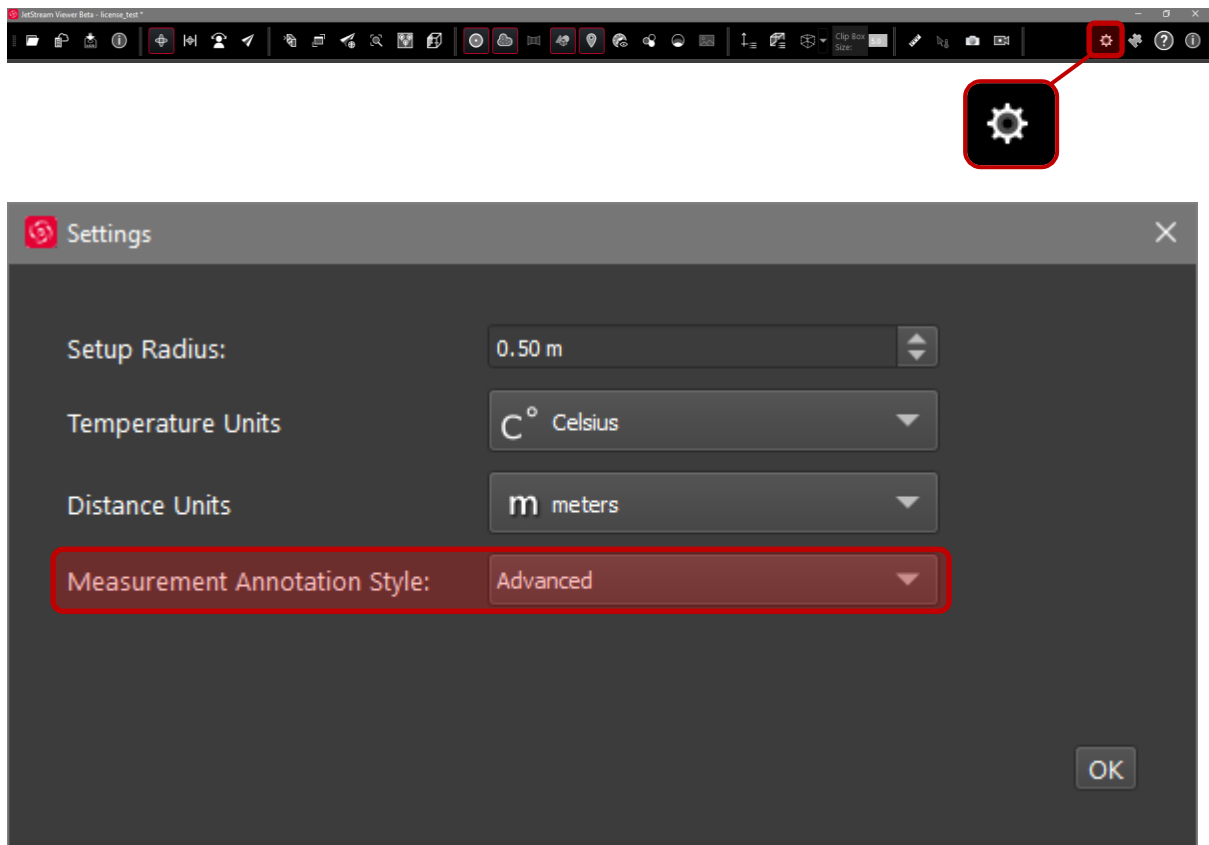


Simple measurement annotation.



Advanced measurement annotation.

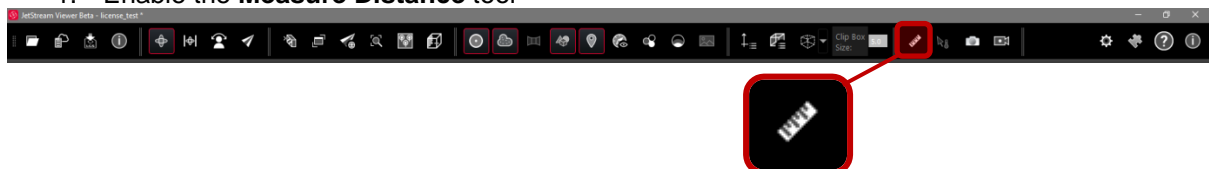
The measurement annotation style can be accessed from the Settings menu. This setting will be preserved for subsequent JetStream Viewer sessions.



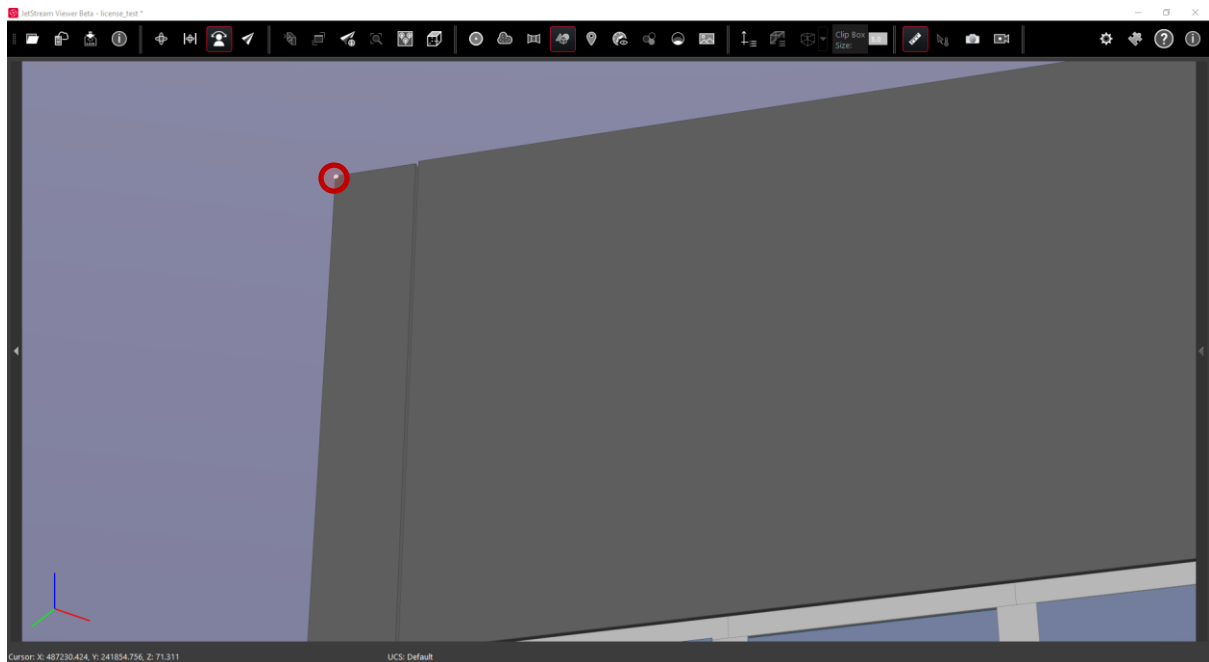
Navigate while measuring

With this release, users may also navigate within the scene while in measurement mode to support precise measurements across larger distances. To do so:

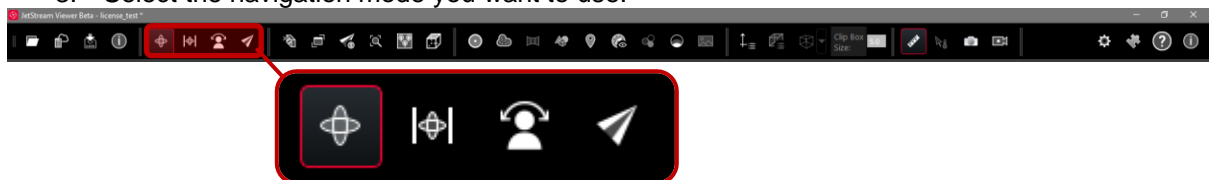
1. Enable the **Measure Distance** tool



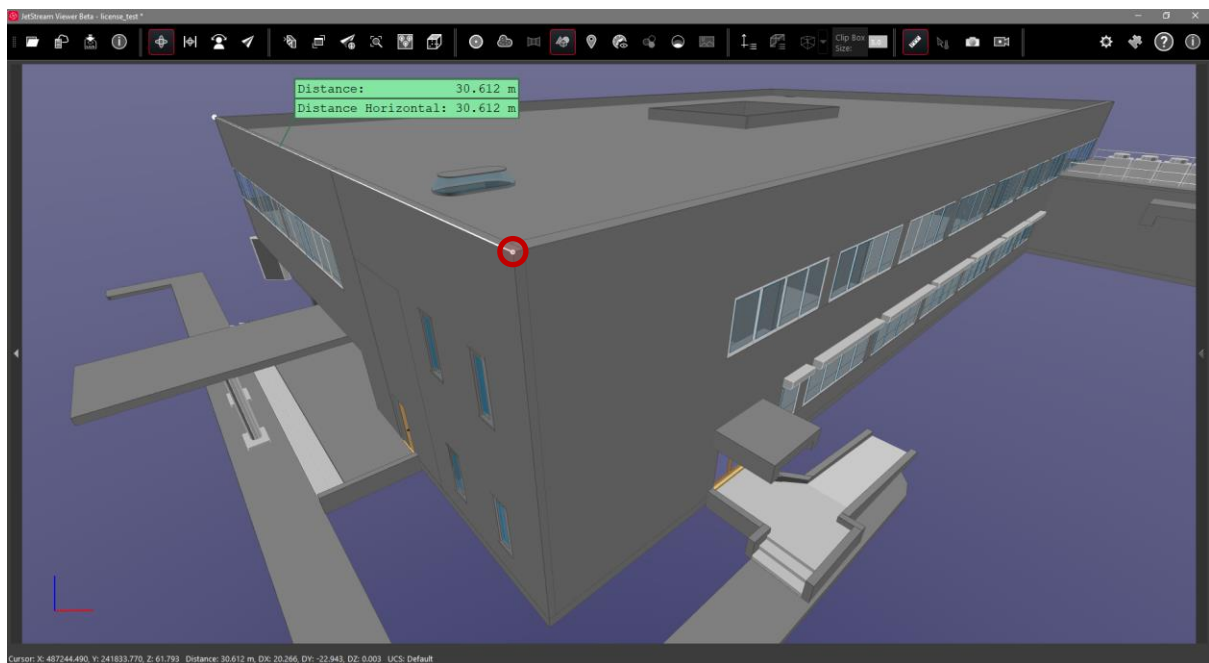
2. Click the origin point of the measurement.



3. Select the navigation mode you want to use.

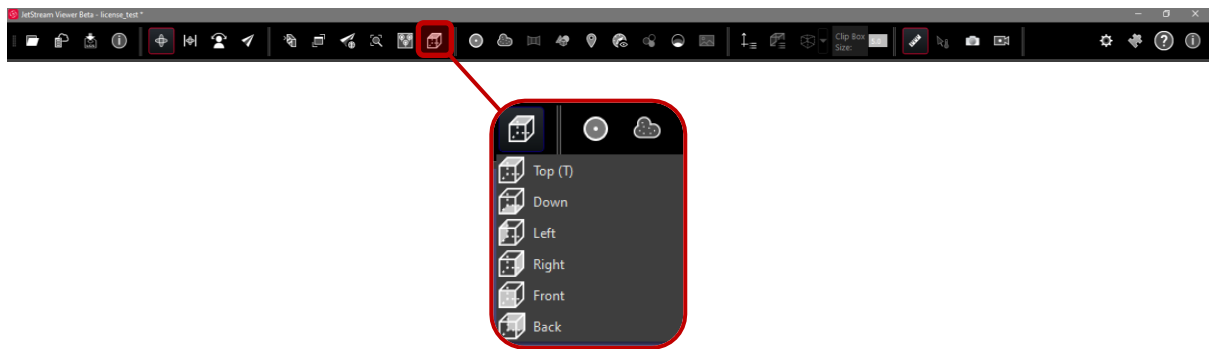


1. Navigate to the view required to select your terminus measurement point by clicking and dragging.
2. Click the terminus point of your measurement.



Directional Ortho Views

With this release, users will now find quick ortho views to support simple navigation and orientation. These views match those found in Cyclone REGISTER 360.



Bug Fixes

UX Bugs

- Corrected a bug which prevented users of JetStream Viewer portable from accessing the help documentation.

Leica JetStream Viewer Compatibility and Upgrades

Compatibility with JetStream Viewer 2020.1 and JetStream Enterprise server

JetStream Viewer 2020.1 requires JetStream Enterprise 1.6 and newer for connected mode to access all features. JetStream Viewer 2020.1 is compatible JetStream Enterprise 1.3 and newer, however non-synchronous versions will result in a limited toolset.

Model Compatibility

JetStream Viewer 2020.1 supports IFC and OBJ models in LGS files only. LGS files must be published from Cyclone CORE 2020.1 or later, the Cyclone REGISTER 360 family 2020.1 or later as LGS or into JetStream Enterprise 2020.1 or later and then re-published as an LGS, with a Cyclone PUBLISHER Pro license*

** Or a Cyclone PUBLISHER Pro equivalent license, which includes Cyclone JetStream PUBLISHER or Cyclone TruView PUBLISHER licenses with active CCP from within the mentioned 2020.1 product versions.*

At this time, models cannot be added to JetStream Enterprise projects.

Reference the following table to determine if models are supported in your LGS file.

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Cyclone 2020.1	PUBLISHER Pro	✓
Cyclone 2020.1	JetStream PUBLISHER (with active CPP)	✓

Cyclone 2020.1	TruView PUBLISHER (with active CPP)	✓
Cyclone REGISTER 360 family 2020.1	PUBLISHER Standard	✗
Cyclone REGISTER 360 family 2020.1	PUBLISHER Pro	✓
Cyclone REGISTER 360 family 2020.1	JetStream PUBLISHER (with active CPP)	✓
Cyclone REGISTER 360 family 2020.1	TruView PUBLISHER (with active CCP)	✓
JetStream Enterprise 2020.1	From any version of the Cyclone REGISTER family with PUBLISHER Standard	✗
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020.1 or later with PUBLISHER Pro	✓
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020 or earlier with PUBLISHER Pro	✗
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020.1 or later with JetStream PUBLISHER (with active CPP)	✓
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020 or earlier with JetStream PUBLISHER (with active CPP)	✗
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020.1 or later with TruView PUBLISHER (with active CCP)	✓
JetStream Enterprise 2020.1	From Cyclone REGISTER family 2020 or earlier with TruView PUBLISHER (with active CCP)	✗
JetStream Enterprise 2020 or earlier	Any license level	✗
Cyclone 2020 or earlier	Any license level	✗
Cyclone REGISTER 360 family 2020 or earlier	Any license level	✗

Disconnected Mode

JetStream Viewer 2020.1 can be installed and used without connecting to a JetStream Enterprise server, thus not requiring a JetStream Enterprise license. The free, stand-alone Viewer can open/read JetStream Viewer (JSV) files as well as LGS files. LGS files are exported from the JetStream Enterprise admin utility or from Cyclone CORE and the Cyclone REGISTER 360 family.

The disconnected mode, when viewing JSV files, does not support access to saved User Coordinate Systems (UCS) nor saved limit boxes, slices, and clips. This project information is stored in and managed by JetStream Enterprise or available in an LGS file.

Portable Mode

JetStream Viewer 2020.1 Portable is a free, no-install version of the Viewer that can be packaged on a thumb drive and run from any PC, no network or Wi-Fi access required. Leverage most of the Viewer's capabilities (all the same capabilities as the Disconnected Mode) in a go-anywhere package that can be navigated by even the most inexperienced point cloud user. Perfect for sharing data with organizations with IT hurdles for new software installation or as a marketing tool for prospective customers. The free viewer can read LGS files published from Cyclone CORE, the Cyclone REGISTER 360 family, and JetStream Admin; JetStream Enterprise projects; and JSV files created before March 2020.

Known Issues

Incorrect password entry

When working with password protected LGS files, if the incorrect password is entered repeatedly, the correct password may fail to open the file. In these cases, re-load the file and enter the correct password. Each time a password protected LGS file is loaded, the user has 3 attempts to enter the correct password.