

# Leica Geosystems Release Notes

- when it has to be **right**

**Leica**  
Geosystems

**Product** Leica Infinity  
**Date** Dec 3<sup>rd</sup>, 2018  
**From** Kevin Hanson



## Table of Contents

1	Installation Details .....	3
2	Welcome to Infinity v3.1 .....	4
3	Point Clouds From Images .....	5
4	Point Clouds .....	6
5	Surfaces .....	6
6	GNSS Processing .....	7
7	Zeno Mobile Workflow .....	7
8	Map Services Feature Info .....	8
9	Field to Finish – Advanced Line Styles .....	8
10	Publish JetStream Projects .....	9
11	Import Data .....	9
12	Export Data .....	9
13	General Application Improvements .....	9
14	Geoid Reader .....	10



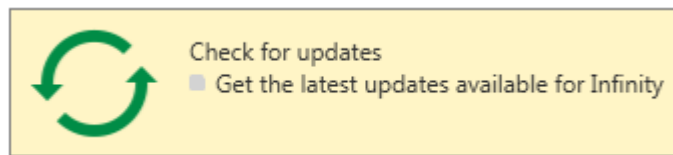
# 1 INSTALLATION DETAILS

<i>INSTALLATION INFORMATION</i>	Leica Infinity v3.1.0	Build	Maintenance end date:
		3188	Dec 3 <sup>rd</sup> , 2018

With an active CCP the users will be able to download and install this new version. Check that the maintenance end data is on or after the date listed above.

New users should download the latest version from the Leica myWorld support website.

*CHECK FOR UPDATES* From Help & About choose **Check for updates**. When a new version is available you will be notified that the update can be downloaded from myWorld



*64BIT SUPPORT* Infinity v3.1 is available only as a 64bit installation.

- MINIMUM HARDWARE*
- Display: 1024 \* 768
  - Input: Keyboard and mouse with wheel
  - Processor: Dual-Core 1.8 GHz
  - RAM: 8 GB
  - Disk storage: 128 GB
  - Graphics: DirectX9 compatible with 512 MB memory

- RECOMMENDED HARDWARE*
- Dual Display: 1920 \* 1280
  - Input: Keyboard and mouse with wheel
  - Processor: Multi-Core 2.4 GHz or greater
  - RAM: 16 GB or greater
  - Disk storage: 1 TB or greater
  - Graphics: DirectX11 compatible 2 GB memory or greater

- RECOMMENDED HARDWARE UAV/UAS PROCESSING*
- Dual Display: 1920 \* 1280
  - Input: Keyboard and mouse with wheel
  - Processor: Multi-Core (i7, i9, Xeon recommended)
  - RAM: 32 GB or greater
  - Disk storage: 1 TB or greater
  - Graphics: DirectX11 compatible 2 GB memory or greater



## 2 WELCOME TO INFINITY v3.1

We are very pleased to announce Infinity v3.1! This release contains many enhancements and improvements through the application and modules. Also new is the support for Leica Aibot UAV sensor data including the geotagging of images and GNSS post processing ability. Please read the following chapters carefully to learn more about all what is new.

Please note that this release is available only as a 64-bit installation.

### OVERVIEW:

#### WHAT'S NEW

- Import Leica Aibot UAV/UAS image data to generate point clouds, surfaces and orthophotos.
- Improved GCP wizard that makes marking images more efficient
- Use Clipping planes to work with point clouds
- Additional editing tools for Surfaces
- GNSS Post Processing adds options to compute residuals or not
- Zeno Mobile import / export including post processing of raw GNSS data
- Map Services with Feature Info for easy querying of data
- Advanced line styles for enhanced field to finish workflow
- Publish to JetStream
- And many more improvements listed in following chapters

### 3 POINT CLOUDS FROM IMAGES

#### LEICA AIBOT IMPORT



By offering the Point Clouds From Images option, users can more readily take advantage of the added value that UAV/UAS data can provide on various work projects, both for data collection and overall awareness of project work.

With Infinity v3.1 we support the import and processing for the new Leica Aibot UAV/UAS sensors. All versions of Aibot can be imported including RTK and GNSS Post Processing options.

Importing an Aibot project file will create an Image group with the geotagged images and a GNSS Tracks group representing the flight, are automatically created.

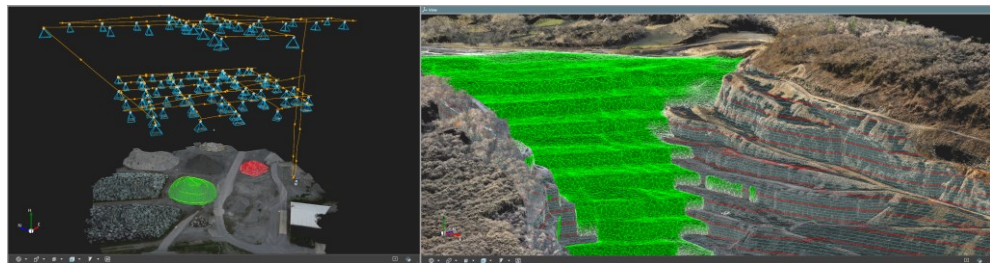
Depending on the Aibot license the GNSS data will indicate if the flight was RTK or Autonomous.

GNSS raw data is logged and with the optional post processing option, can be post-processed in Infinity using a reference station. Once the processing results are stored, the flight track is automatically updated with the position of the images also updated.

For all Aibot imported data the user can view the flight path along with the images.

Additional data exports have been added including GeoTIFF and Tiff for exporting of orthophoto and DSM data, to support users processing image data with Infinity.

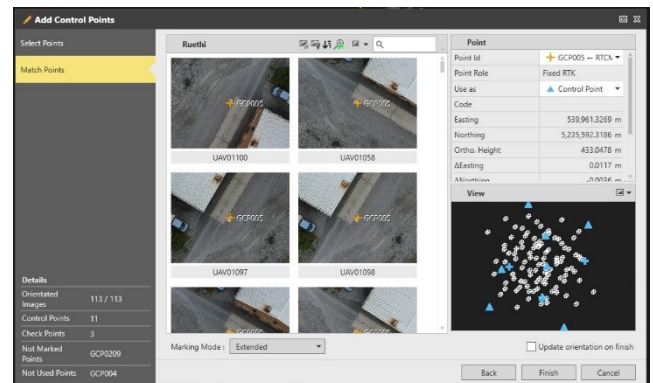
Note, Infinity is also used to import and geotag the images for any Aibot sensor when users need to export the image data for processing with existing software.




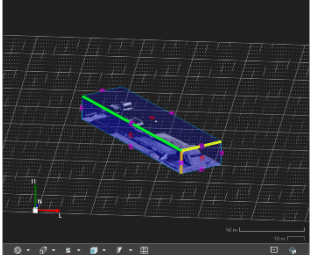

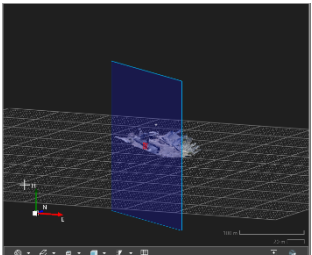

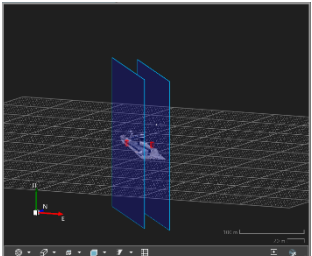
#### GCP WIZARD: EXTENDED MARKING MODE

A new method of marking control points is added that provides an efficient way to work with many images all at once.


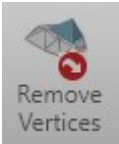
The new method includes several options that allow users a more efficient way to mark images including the filtering of the images to be displayed, an overview display of the image group image locations and control point distribution, including a visual way for easily distinguishing points used as control and as check points.



## 4 POINT CLOUDS

<p><i>CLIPPING PLANES</i></p>	<p>To better work with point cloud data its now possible to use clipping planes. This lets a user define and area to focus on to generate feature data or to better clean unwanted points.</p> <p>Once a user has defined the clip its easy to turn on or off the clip when needed by using the <b>Toggle Clip</b>. Use <b>Reset Clip</b> to return to the complete point cloud view.</p> <p>Each clip method has options for how it is defined, and the clips can be combined to best arrive at the point cloud data the user wishes to work with.</p>
<p><i>BOX</i></p> 	<p>Use this method to define the area you want to limit to work with.</p> 
<p><i>PLANE</i></p> 	<p>Hide points beyond a plane and work with the data from the plane.</p> 
<p><i>SLICE</i></p> 	<p>Define points to view between two planes, creating a slice from the point cloud data.</p> 

## 5 SURFACES

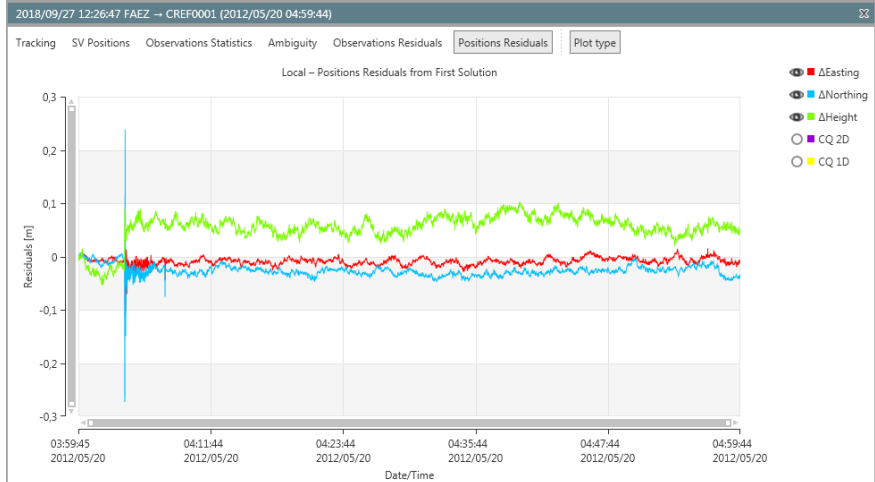
<p><i>TRIM TRIANGLES</i></p>  <p><i>REMOVE VERTICES</i></p> 	<p>Creating detailed 3d or 2.5d surfaces is easy with Infinity. Its now possible to better control the overall surface with the added tools to Trim Triangles and Remove Vertices.</p> <p>Use the Trim Triangles to remove triangles around the edge of the mesh to arrive at a better end surface. This applies to Imported surfaces, 3D surfaces created from Surfaces module, and 2.5D Material Layer surfaces from Infrastructure module.</p> <p>Use the Remove Vertices when spikes or areas of triangles have been created but not wanted such as when generating DSM from UAV data, spikes can easily be removed.</p>
--	--

## 6 GNSS PROCESSING

### PROCESS & ANALYSE SETTINGS

GNSS post processing users can now choose to compute both observation and position residuals for more in depth baseline analysis. From the Advanced Settings the user defines this from the Process & Analyse Output. For the users who only want to process data as quickly as possible, choose None as the output and this disables any residual calculations.

The addition of Position Residuals plots can help to interpret stability of a solution and allows the user opportunity to remove aspects of the data and improve the results.



## 7 ZENO MOBILE WORKFLOW

### IMPORT ZENO MOBILE

Field collected Zeno Mobile projects can be imported to Infinity. The project files contain shape files, GNSS observations, linked images and Coordinate systems. Each import will be visible from the Navigator Source.

When Zeno Mobile data includes raw GNSS observation data use Infinity to improve the Zeno collected positions.

The feature data is stored as Library objects and can be exported as SHP files including all thematic data as was imported.

## 8 MAP SERVICES FEATURE INFO


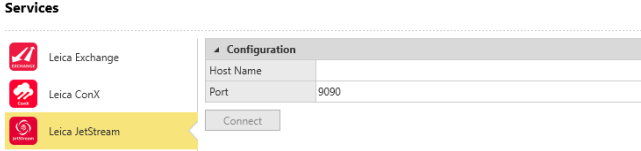
<p><i>WFS SERVICES</i></p>	<p>It is common today that localities provide geospatial data via internet services. A user goes to a webpage, logs in with their credentials and then locates and downloads the data they require. Many of these data providers also allow connectivity via third party applications to access the same data contents. Infinity now allows users to define such services where they are available.</p> <p>With these services its now possible to discover data directly from the Base Map view. Choose the Feature Info ribbon button and then click on the desired area of the displayed map. Infinity will query that location for available data and if data is available will display in the property grid, including street view images.</p>	
<p><i>XYZ TILES</i></p>	<p>It is now possible to use XYZ tile services in Infinity as part of the Base Maps functionality.</p>	

## 9 FIELD TO FINISH – ADVANCED LINE STYLES

	<p>Users can now import their line styles to the Code Table and include the line styles to their existing or new codetables. This lets users have a complete CAD data path where blocks, layers and line styles can be defined in order to minimize the office processing time.</p> <p>The line styles are displayed in the graphic view. There can be some line styles with external references – these are not supported but the line style is correctly written in the DXF/ DWG file and will draw correct when opened where the external references have been defined in the CAD software.</p>



## 10 PUBLISH JETSTREAM PROJECTS

<p><b>JETSTREAM</b></p> 	<p>Users can define the JetStream server and with an existing license can publish JetStream projects. This is a very good way to move UAV point cloud data to Cyclone / Cloudworx users.</p> <p><b>Services</b></p> 
---	--

## 11 IMPORT DATA

<i>RW5 / RAW</i>	TDS format data can be imported including observation and point data. This includes terrestrial setups, traverse and level data, RTK observation and point data and all data measured with point code and attributes are supported.
<i>E57</i>	Easily import point cloud data using the e57 format

## 12 EXPORT DATA

<i>GEOREFERENCED IMAGES</i>	<p>Export referenced images to various formats including TIFF, GeoTIFF, PNG and JPG. Choose the Coordinate type, file format, and unit.</p> <p>When exporting TIFF or GeoTIFF the user can choose to down sample the export to reduce the size of the exported file.</p> <p>For large georeferenced files users can also define to export in tiles, setting the width and height.</p>
<i>GEOREFERENCED DEM</i>	Export surfaces as a TIFF or GeoTIFF. Choose the Coordinate type, file format, and unit. The image resolution can also be defined on export.
<i>PTG</i>	Additional point cloud format PTG is now supported.
<i>GSI</i>	Export GSI format and define the contents of the file including type GSI8 or GSI16, whether to export measurements or points and code information

## 13 GENERAL APPLICATION IMPROVEMENTS

<i>HIDDEN POINT EDITS</i>	<p>Hidden Point application used with GNSS data collection are imported and can be viewed by the Hidden Point Survey Layer.</p> <p>As well, when selecting a hidden point, the user can edit the values which were used to define the computed point.</p>
<i>COGO PROPERTIES</i>	For all Cogo generated point data its now possible when selecting a point to view the properties used to define it.
<i>LINKED IMAGES INDICATOR</i>	It's now possible to view if images are linked to feature objects from the graphic. This is set by a new Survey Layer: Linked Images
<i>GRAPHIC VIEW KEYBOARD SHORTCUTS</i>	Use the arrow keys for panning and use ctrl with +/- to zoom in / out.

<i>UPDATE STATIONS</i>	When using Set Azimuth Setup method and a point is used to define the azimuth direction, when the point coordinates are updated the azimuth/direction is now computed between the Station to BS and applied as the new azimuth/direction.
<i>EXPORTING DBX</i>	Organizing DBX jobs has been improved for the export. When choosing Create Subdirectory, all DBX files will be written in to a subfolder. When choosing not to Create Subdirectory on export, then each DBX job is stored in a folder at that location. This makes it easier to copy the data direct to the sensor.
<i>EXPORTING ASCII</i>	When exporting TPS or GNSS observation data, when the station is using a point role such as a measure point from another station, the Setup Point is now ignored on export. It could be that the Setup Point was exported even if it was not being used as the source for the observations.

<b>14 GEOID READER</b>	
<i>CREATE GEOID FIELD FILE</i>	<p>Added to Coordinate System Manager, the user can import and create a Geoid GEM file from locally provided geoid model data, usually provided in ASCII format.</p> 