- when it has to be **right**

Leica Geosystems

Release Notes

Product	Leica Infinity
Date	April 20th 2022
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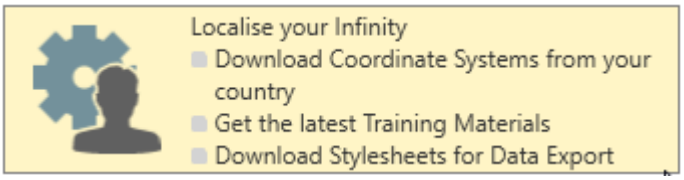
1 WELCOME TO INFINITY

LEICA INFINITY V4.0	We are pleased to announce Leica Infinity 4.0. With the ability to process data from digital levels, total stations, GNSS sensors, and **now even scanners,** Leica Infinity 4.0 is your **indispensable bridge between field and office**. Please read the following chapters carefully to learn more about what is new.
OVERVIEW	▪ New Point Cloud Registration: import and register scan setups with targets using TPS, GNSS and user-created points. ▪ Support for BLK360 and RTC360 scanner data, including Field360 ▪ Support for AP20 pole with TPS tilted measurements and auto height information ▪ Point Clouds from Images add improved filter options that significantly improve the quality of the generated point cloud. ▪ New Local-to-Local transformation tool, users can transform local or grid coordinates from one system to a second system. ▪ Scale imported DXF and DWG files to better work with local or grid coordinates. ▪ And many more additional features and improvements.
GETTING STARTED – HELP & SUPPORT	Getting started, users have access to information and useful data including coordinate systems, stylesheets, tutorials and sample data, all available from the *Localisation Tool*. From the ***Help*** menu, click on the ***Localise your Infinity*** button to access this data and the tutorials to help you get started with Infinity. 
ORDERING INFINITY	Infinity has flexible ordering options. Users can purchase a one-time permanent perpetual license or can now also buy into a subscription plan. On top of our existing Leica Infinity – Basic package, users can also purchase additional packages depending on their needs. One of them now covers the new Point Cloud Registration option. All packages and their features can be found on the Leica Infinity data sheet. Contact your local Leica representative to discuss what options are best for meeting your project and workflow needs.
YOUTUBE VIDEOS	Check the Leica Infinity YouTube page to see our playlist of videos about new features and and how-to-videos.

2 INSTALLATION DETAILS

INSTALLATION INFORMATION

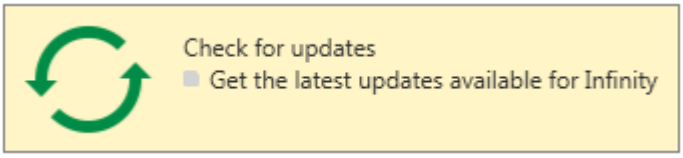
Leica Infinity v4.0	Build	Maintenance end date:
	44003	April 20th 2022
Leica Infinity is available as a Windows 64bit only application		

With an active CCP or Leica Infinity subscription license, users will be able to update to this new version. Confirm that the maintenance end data is on or after the date listed above before installation.

New users can download the latest version from the Leica Geosystems 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.



OPERATING SYSTEM REQUIREMENTS

The following Microsoft® Windows™ operating system editions are supported:

- Windows 8
- Windows 10
- Windows 11

Note: you must have administrative privileges on your computer to successfully install Leica Infinity.

MINIMUM HARDWARE

- Display: 1024 * 768 px
- Input: keyboard and mouse with wheel
- Processor: multi-core 2.4 GHz
- RAM: 8 GB
- Disk storage: 100 GB
- Graphics: DirectX9 compatible

RECOMMENDED HARDWARE

- Dual Display: 1920 * 1280 px
- Input: keyboard and mouse with wheel
- Processor: multi-core 3.5GHz or greater
- RAM: 32 GB or more
- Disk storage: SSD of 1 TB or more
- Graphics: DirectX11 compatible, 4 GB memory or more, CUDA capable

RECOMMENDED HARDWARE FOR IMAGE PROCESSING, POINT CLOUD REGISTRATION

- Dual Display: 1920 * 1280 px
- Input: keyboard and mouse with wheel
- Processor: 8 Core 3.5 GHz or more
- RAM: 128 GB or more, XMP enabled
- Disk storage: SSD of 2TB or more
- Graphics: DirectX11 compatible, 8 GB memory or more, CUDA capable

3 NEW: POINT CLOUD REGISTRATION OPTION

POINT CLOUDS

Bring BLK360 and RTC360 laser scanner data to your surveying and geodetic workflows. A new option can be purchased with Leica Infinity that supports the importing and register of scan setups.

Use the *Register Tool* to easily integrate scanner data with data from Total Stations, GNSS devices or other instruments, and use imaging workflows to combine point clouds from scanners with your project work.

The *Register Tool* provides an easy-to-use registration workflow with three steps to easily organize, align and add targets with scan setups to produce a unified point cloud.

IMPORTING SCANNER DATA

With the new Point Clouds Registration option, import scan data from the BLK360 and RTC360 to your project work. Data import options support the scan registration workflow including extracting black & white targets and performing AutoCloud which automatically searches to align all scan setups.

Note that with the Cyclone Field360 application, the pre-registering of scan setups during field collection, will be imported to Leica Infinity and will provide the most efficient workflow for completing scan setup registration.

4 TOTAL STATIONS: AP20 AUTOPOLE

AP20 SUPPORT

Leica Infinity 4.0 supports the Leica AP20 AutoPole, a productivity-boosting smart system for Leica robotic total stations.
Import and easily identify all your tilt-compensated measurements that were used for Survey and Stakeout applications. Know which measurements used the *PoleHeight* functionality from the field or if the height of the pole was entered manually. In the office, Leica Infinity supports the reprocessing of AutoPole measurements.

5 IMAGING OPTION: ENHANCED POINT CLOUD FILTER STRATEGIES

POINT CLOUDS FROM IMAGES

New dense point cloud filter options allow the user to optimise the quality output of the point clouds generated from images.

For details about how to use the filter settings, we refer to the *Help and Imaging Dense Point Cloud* settings.

Remember that the image acquisition and image overlap are important to consider. It can improve or impact the quality of data output tremendously.
See below an example of the improvements in point cloud quality when applying the new filter settings:

Dense Point Cloud	
Noise Reduction	☑
Local Filtering	☐
Max. Sigma Threshold	0.0500 m
Min. Images per Point	10

Infinity 3.6.1

Infinity 4.0.0

6 CAPTIVATE: MEASURE TO REFERENCE APPLICATION

IMPORT MEASURE TO LINE

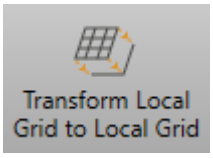
Easily view Captivate and SmartWorx Measure to data in your Leica Infinity projects. The *Navigator and Inspector windows also* group the Measure to Reference data. This lets users quickly select data to view properties or to generate reports for complete field measurement transparency.

7 GNSS: Enhancements

Import Rinex 3.05	Support of GNSS data RINEX v3.05.
Import GNSS Formats	Additional GNSS raw data support for Novatel *.JOB-files and ublox *.UBX-files.
Import Static as Kinematic	When importing GNSS data, users can choose to import the track as moving data. This helps in cases where users have collected data while moving but not configured the receiver to kinematic or moving mode.
PPP Measured Points	When importing data from Captivate, the properties of GNSS points measured with PPP will show the reference frame and epoch information. This information is also shown in GNSS point reports.

8 New: Local to Local Transformation

Transform Grid Coordinates



Easily transform local grid coordinate data from system a to system b. Do this by choosing the *Transform Local Grid to Local Grid* tool from the Home tab. This allows you to compute a transformation between two sets of local coordinates. Use this as a method to move total station data measured in arbitrary local coordinates to grid coordinates.

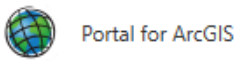
9 Services: Additional Data Services

Connect to Cyclone Enterprise

Customers who work with the Cyclone Enterprise services, can define the server configuration settings in the backstage settings. This lets the users push point cloud data from Leica Infinity to Cyclone Enterprise to be used with Cloudworx products.

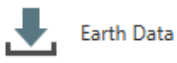
For customers who have not upgraded to Cyclone Enterprise, the Jetstream configuration settings are also available.

Portal for ArcGIS



Connect with ESRI ArcGIS Enterprise solutions for complete feature mapping solution. Collect, combine, and process all features with attribute data and publish as ArcGIS Web Map.

Earth Data Downloads



A new data service is available. The service is used for accessing precise ephemeris for GNSS post-processing and downloading height data used with *Terrain Mode* to drape base maps in the graphic view.

10 General Application Improvements and Fixes

Shift Rotate Scale	The ability to scale the DXF and DWG files is also part of this release. This will help in cases where it's needed to bring the CAD data to a grid or ground coordinate frame.
Coordinate Systems	Czech negative projections added.
Export NGS GVX	For US customers, export GNSS observations to the NGS GVX format. This provides the users' ability to bring data to OPUS or related NGS online services to complete their GNSS related project work.
Graphic View	Added Two-finger pan support for trackpads without action buttons added.
Line Features	Fixed an issue where 3D lines in some cases were not accessible in Captivate Stake or Measure to Line applications.
Code Attributes	Fixed in property grid where points with an empty attribute list could cause a crash when opening the flyout to view the attributes
Code Attributes	Fixed setting the attribute to zero when changing a block symbol assigned to a point code
WFS Services	Improved the viewing of attributes when using the Get Features for downloading data.
Rinex Merge Intervals	Improved the Merge Intervals functionality when import many RINEX files at the same time.
GNSS Observations	Added Quality and Position Count columns in the Inspector GNSS Observations view.
GNSS Tracks	Now possible to export the GNSS kinematic track to DXF, DWG and SHP file
Level Lines	Improved the export to XML for level lines that have been reversed and then processed.
Time Series Plots	Fixed an issue where E and N axis could be switched depending on units and coordinate system settings