Leica Geosystems – Mobile Mapping Release Notes

Product	**Version** 2024.1.1.84 **Leica Pegasus OFFICE**
Installer	**LeicaPegasusOffice-v2024.1.1.84.zip**
Date	**27th June 2024**
From	**Mobile Mapping Software Product Management Team**

Content

1   Introduction

1.1   Availability

The new **2024.1.1.84 release of Leica Pegasus OFFICE** will be available for download in myWorld **from the first week of July** 2024 onwards.

Users with an active Customer Care Package maintenance as of May 1st, 2024, are entitled to install and run the new software release for free.

1.2   What's New

Leica Pegasus OFFICE 2024.1.1.84 is a major release that includes new features and improvements to the product.

In addition to the enhancements, the main new features are:

- New split track tool
- Export of LGSx format
- Support of Novatel Inertial Explorer version 9.0
- Selectable reference point cloud for visual and manual link tool
- Multi-return values for TRK Neo models are now supported in LAS and E57 export formats

2   New features

2.1   New track splitting tool

2.1.1   General
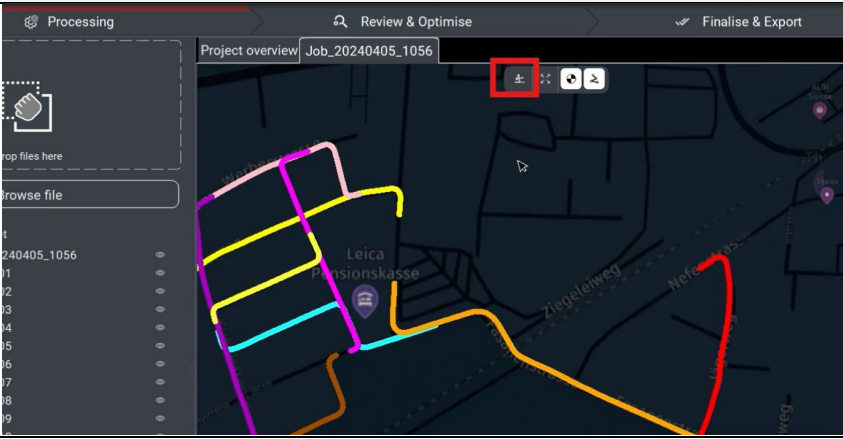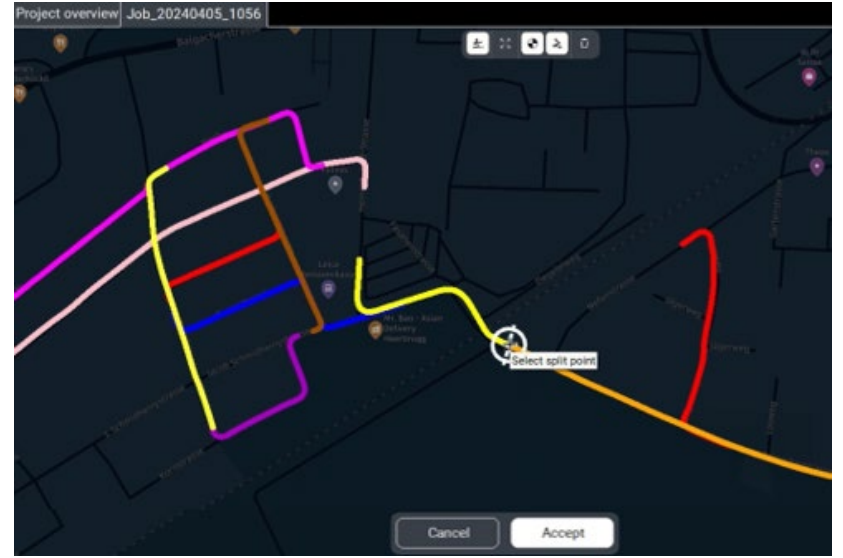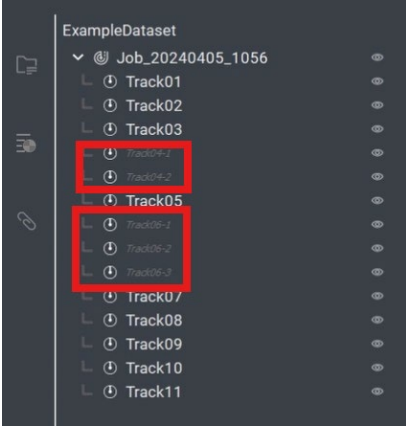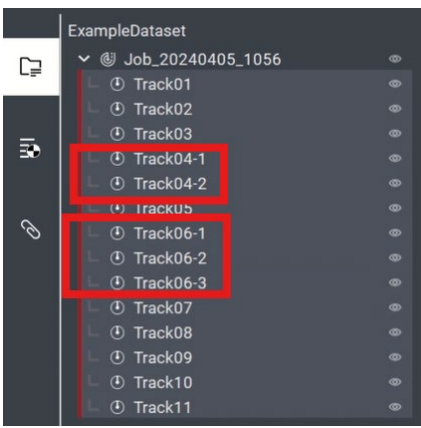
The new track splitting tool provides the users the ability to divide tracks before and after processing. Users can focus on specific sections of a dataset, processing only the needed parts. It allows users to remove sections of tracks that were not properly acquired or present issues during processing.

By processing only the relevant parts, users can manage their data more effectively. This offers flexibility and efficiency in managing and analysing complex data sets, saving processing time and disk space.

For highway data capture, users no longer need to repeatedly start and stop the capture. They can perform a single, continuous data capture and conveniently split the track later at the office, eliminating gaps.

2.1.2   Detailed table of user interactions

See below the detailed list of user interactions available:

Selection using key	Result
Click "Split tracks" button	
Select one or more split points and click "Accept"	
During the split point selection, the preliminary tracks will be shown in the left panel. Once the action is confirmed, the captured track will be replaced and converted into the newly split tracks. Please note that this action is irreversible.	BEFORE „Accept" After „Accept"

2.2   Support of LGSx format export

LGSx is the latest version of the popular LGS file format, Leica Geosystems Universal Digital Reality file format. The update provides a next-generation solution that includes significantly faster writing (publishing), higher compression, a new visualisation experience, and a new core data architecture. Its inclusion in Leica Pegasus OFFICE ensures that reality capture projects published from the Pegasus suite remain fully interoperable with the rest of the reality capture portfolio.

The data architecture change is instrumental in allowing Leica Geosystems to build out exciting new capabilities and features in the future to meet the growing needs of the reality capture industry.

2.3   Support of NovAtel Inertial Explorer version 9.0

2.3.1   NovAtel Inertial Explorer v 9.0 Compatibility

There are <u>important compatibility changes</u> between the Inertial Explorer versions and the Leica Pegasus OFFICE.

To use the new version 2024.1.1.84 of Leica Pegasus OFFICE a NovAtel Inertial Explorer license for version 9.0. is needed.

That means:

- The current license for Inertial Explorer version 8.9 will not be compatible with Leica Pegasus OFFICE versions from 2024.1 onwards.
- A NovAtel Inertial Explorer license upgrade from v 8.9 to v 9.0 needs to be organised, contacting the local Selling Unit.
- For the upgrade to take place, an active NovAtel maintenance contract (PCS) is needed
- NovAtel Inertial Explorer version 9.0 is not backwards compatible. If the customer still uses Pegasus Manager, updating to v9.0 will cause "Navigation Preparation" to stop working. To use Pegasus Manager with a trajectory from v9.0, please directly process the trajectory in Inertial Explorer v 9.0. The user can then import the *.cts file in the "Import Trajectory" step. The rest of Pegasus Manager is not affected.

2.3.2   Inertial Explorer v. 9.0. license upgrade process

- If the PCS is valid, contact MMS support for the license upgrade.
- If the PCS has expired, an extension can be ordered via Leica Geosystems. The license upgrade can be requested in the same product order. A license upgrade will then be issued.
- The relevant NovAtel Inertial Explorer maintenance article numbers are:

PCS Articles *	Description
954733	NovAtel Inertial Explorer Maintenance 1yr
954734	NovAtel Inertial Explorer Maintenance 2yr
954735	NovAtel Inertial Explorer Maintenance 3yr

* When ordering maintenance renewals, the maintenance start date is automatically set to the end date of the previous contract (PCS date) to avoid gaps in the maintenance period!

2.4   Selectable reference point cloud for visual and manual link tool

This feature allows users to set a specific point cloud as the reference when measuring manual or visual links. Setting the reference point cloud is particularly beneficial in situations where one track demonstrates superior accuracy over others. By enabling users to select this more precise track as

the reference point cloud, the software ensures that the analysis is based on the highest quality data available. This approach provides a significant improvement over relying on an average result, which would be the preferred choice if all tracks would show the same level of accuracy.
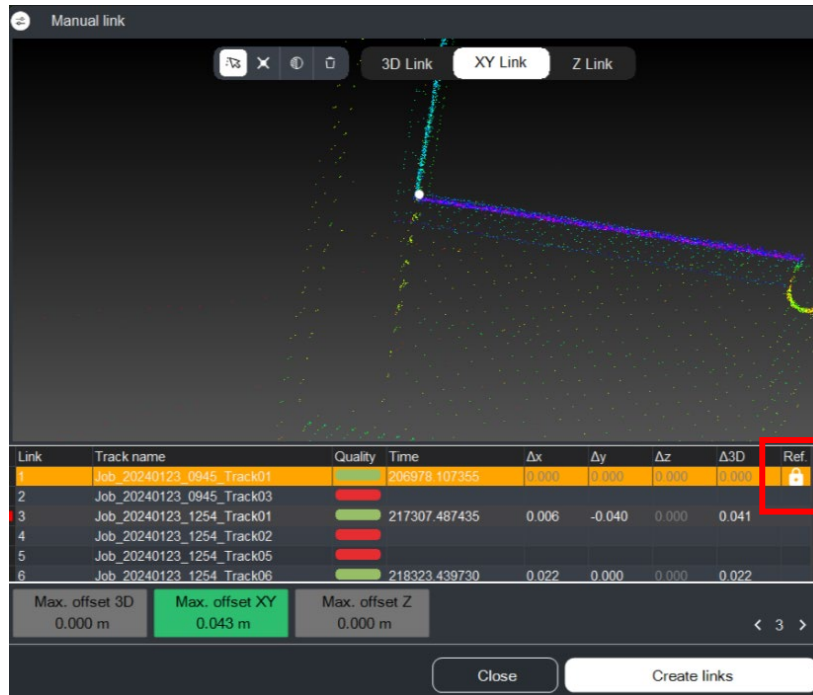
2.5 New 1D and 2D manual link creation options

Users can now add 1D and 2D links for adjustment, allowing for flexible data linking in areas where full 3D picking isn't feasible. For example, if the ground wasn't captured in some tracks but the feature was, they can still connect the data accurately. Similarly, when only the ground is present without distinct features, 1D links can be used to align the Z-dimension, ensuring consistent elevation data across tracks. This feature enhances the versatility and accuracy of data adjustments in challenging conditions.
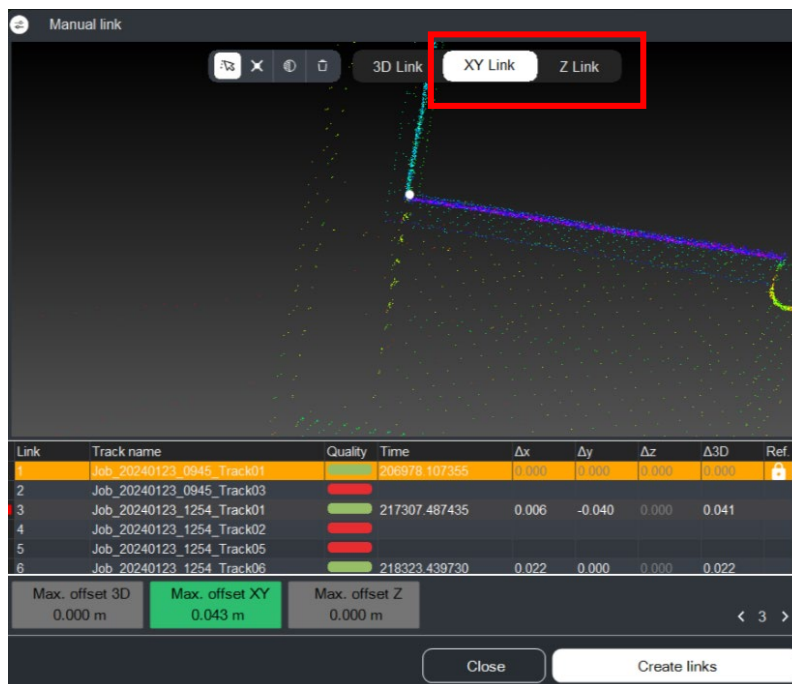
2.6   Multi-return values for TRK Neo models are now supported in LAS and E57 export formats

The LiDAR technology Pegasus TRK Neo models use support of up to 4 returns for the same laser beam. This feature allows the scanner to distinguish between first, last, and intermediate signals, making it easier to isolate surface information and filter out vegetation. This is particularly useful in densely vegetated areas, enabling users to see structures behind the foliage. Applications include surveying road and rail embankments, identifying houses behind trees, and examining vegetated quarry walls.

With this new software version, users can now export this information in LAS and E57 formats.

2.7   Basemap scale and north arrow are now displayed

In the latest release, the scale is now displayed in all windows, and the north arrow is included in the report map.

3   Improvements

3.1   Leica Pegasus OFFICE supports new CLM and HERE Maps versions

Pegasus OFFICE updated the support of CLM to version 2.14 and HERE Maps to version 3.

3.2   Automatic link measurement robustness increased

The robustness of the automatic link measurement feature has been enhanced. Users will now notice fewer disabled links, ensuring a smoother and more productive experience.

3.3   L1 ARP offset from the reference GNSS in US Feet

In previous versions of Leica Pegasus OFFICE, it was not possible to enter the L1 ARP offset from the reference GNSS antenna in US Feet. With the latest update, this capability has been added,

3.4   Fixed processing issues with jobs longer than 8 hours

The error that occurred during trajectory processing when jobs were longer than 8 hours has been addressed and resolved in the current update.

3.5   Enhanced anonymisation for vehicles

The performance of the anonymisation algorithm has been significantly improved for vehicles, making it more efficient and reliable in safeguarding sensitive information. This improvement ensures that the algorithm is now more successful at identifying and blurring vehicles within the data.

3.6   Fixed Cam08 issue for Pegasus:Two and Pegasus:Two Ultimate datasets

The problem where the camera 8 would not be physically mounted but the configuration in MDA was not modified generated an empty folder in the project structure that caused some processing issues. This has been addressed and resolved in the current update.

3.7   Fixed several classification issues

- The error of the VRAM Maximum during the point cloud classification process that led to Pegasus OFFICE to crash has been addressed in the latest update.
- In some cases, with Pegasus TRK Evo models the manual classification failed. This bug has been fixed with the latest release.
- Updated classification .xml file for E57 export format is now available.

3.8   Fixed layout when importing Pegasus:Backpack Pure SLAM dataset

Leica Pegasus OFFICE has successfully resolved a layout issue that occurred during data imports. Previously, importing a Pegasus:Backpack Pure SLAM dataset caused disruptions to the layout. With this update, users can now import data seamlessly without any impact on the layout.

3.9   Enhanced report: CSV file export

When generating the reports, the software now creates and exports automatically CSV files, with all relevant data associated with the link list.

3.10   Several other minor user experience improvements, interface, and bug fixes

In this release, several minor bug fixes, user experience improvements, and interface improvements, such as text enhancements, were included.

4   Important Notes

4.1   Note on PC-GPU requirements

Image anonymisation and point cloud classification depend entirely on the hardware used on the PC. If the graphic card requirement does not match, the process is stopped with a notification:
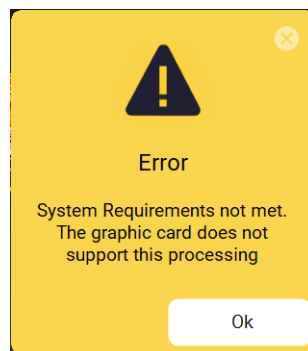
The graphic card computing capability needs to be 7.5, 8.6 and 8.8.

Compare the listed computing capabilities for each Nvidia chipset here:

https://developer.nvidia.com/cuda-gpus

Computation capabilities, other than the listed above, need to be checked by Leica Geosystems R&D department to make sure the image anonymisation works according to the expectations. If the graphic cards should be used with higher computation capabilities, the users should contact the Leica Mobile Mapping support team to verify if the hardware can function accordingly.

4.2   Compatibility

With the 2024.1.1.84 release, Leica Pegasus OFFICE is supporting these versions of the following Hexagon/Leica Geosystems software products:

- Leica Infinity v4.1.1.45440
- Inertial Explorer SDK 9.0
- Leica CLM 2.14.0

4.3   Support of Virtual machines

Please note that running the software on virtual machines is not supported.

Leica Geosystems AG, Heerbrugg, Switzerland, 2024