

What's New

Leica Photogrammetry Suite (LPS) 9.2

LPS CORE

- New sensors supported in Leica Photogrammetry Suite (LPS) 9.2 include:
 - ALOS PRISM rigorous and RPC
 - EROS-B
 - GeoEye-1 rigorous and RPC
 - Worldview-1 rigorous and RPC
 - THEOS
 - FORMOSAT
- LPS 9.2 supports additional camera formats and parameters, including SMAC, AUSTRALIS, and ORIMA extended parameters. During project setup, LPS now has options for users to directly import camera parameters from an Australis camera calibration report and ORIMA's adjusted camera parameters output file. It is also possible to directly enter camera parameters from USGS SMAC reports. These parameters can be saved in the new LPS camera file format. This enhancement promotes higher accuracy for the images captured by medium format digital cameras.
- The new camera file contains headings describing the various camera parameters. The new camera file format is a user-friendly interface for camera file information, describing each of the parameters associated with camera files.
- The DPPDB model type has been merged into the standard NITF RPC model.
- There is now an average elevation option for RPC models to improve the initial vertical load point position for stereo models.
- Exterior orientation data from the Position and Orientation System Exterior Orientation (POSEO) software can be directly imported into an LPS project.
- The underlying algorithm for RPC triangulation has been improved. Users now have more flexibility in parameter and weight selection, and output reporting has been improved with more information. These changes have made the process better suited for larger blocks and improved accuracy.
- Users can now create a Rational Polynomial Coefficient (RPC) model for any type of imagery. This can be used internally or exported with imagery into a NITF file that can be ingested by numerous software packages. This provides a near universal interchange mechanism for oriented imagery.
- USB support is now available for the TopoMouse.

LEICA MOSAICPRO IMPROVEMENTS

- The annotation created from MosaicPro will display both the seamline polygon and its corresponding image name.
- Memory allocation has been improved in MosaicPro, enabling a larger number of input images to be handled effectively.
- The new **Set Max # of Rasters to Display** setting speeds the viewing refresh rate by loading into memory only those images within close proximity to the viewed image. The number of rasters can be set manually, or by allowing the program to determine the number based on the image file sizes. The program starts from the center point of the viewer and loads into memory only the number of images selected. The center point changes as the

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user pans and the program resets the viewable region on-the-fly. This innovative new feature minimizes load time and decreases overall user management responsibilities.

- Image dodging now has the option of using pyramid levels for processing, which can speed up the image dodging process. The **Skip Factor** options are available only when selecting full (1:1) resolution.
- The image dodging user interface has been updated to provide full functionality with a simpler layout.
- Statistics generation when using image dodging can now be deferred until the final mosaic process is run, saving production time.
- An improved **Feathering** function gives each overlapping image equal weight when determining the best choice for the pixel value. Also within the feathering distance, the new process gives less weight to the pixels farthest away from the seam line and more weight to pixels close to the seam line. This new process creates superior results.
- As a mosaicking alternative, MosaicPro includes the ability to script mosaicking as a batch process to support automated workflows.
- There is now an **Undo** button for seam polygon editing. This new feature automatically returns a seam to its original state, thereby replacing the previously time consuming procedure of re-editing a seam when necessary
- MosaicPro includes an option to make a temporarily generated DEM permanent. This is useful if users need to re-process data or would otherwise like to keep the DEM.

TERRAIN PREP TOOL (DTM SPLIT AND MERGE TOOL) IMPROVEMENTS

- The output DTM generation is automatically validated by ensuring all rows and columns are present.
- DTMs can be produced in ASCII file format. Users may now use point codes to model breakline data.
- LAS format is supported as an input format in the **Terrain Prep Tool**. This enhancement streamlines LIDAR workflows.

ATE FEATURES AND IMPROVEMENTS

- There is a new adaptive ATE which uses an advanced algorithm to adaptively fine tune the correlation algorithm as it extracts the elevation information, resulting in higher accuracy.
- Improvements have been made in ATE in adapting scale, rotation compensation and epipolar constraints automatically based on sensor types. These improvements provide better results for ADS40 datasets.
- A Global DEM is provided to set min-max elevation and is stored in the folder “..etc\globalterrainsources.” Users can also select other raster DEMs to set the min-max search range. It is important to note that the Global DEMs **cannot** be used in LSR projects. The search range may be entered manually in LSR projects.
- Correlation can be halted at a user-specified pyramid level to speed up the DTM generation process in adaptive ATE.
- The DTM Extraction Properties interface has been updated – the new interface is more accessible and intuitive.
- ATE includes a new **Object Filtering** feature for tree and building removal.
- An RGB image and a Pan image can be used as an image pair in Adaptive ATE.

TE FEATURES AND IMPROVEMENTS

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- Performance has been improved when zooming in and out when editing large datasets.
- Performance has been improved during the editing process in TE when operating in full resolution mode.
- Icons for offline images and image pairs are grayed out and therefore immediately recognizable as “missing.”
- Display settings for DTM and reference DTM are correctly remembered and restored.
- The display settings dialogs can be accessed before a DTM is loaded.
- The visible state of the terrain layers (points, mesh, breaklines and contours) is now persisted and restored for both DTM and reference DTM.
- Terrain Edit Operators now work correctly for multiple selected regions.
- In the Terrain Editor module, the new terrain-following cursor mode automatically tracks to the surface of the terrain model, simplifying editing and quality control. The height can be adjusted using the mouse wheel. The cursor will then float over (or under) the terrain with the current bias. Toggling off and on will reset the bias to zero, snapping the cursor back onto terrain level. This new feature works together with digitizing breaklines, i.e. if enabled; the elevation is adjusted while breaklines are drawn, even in stream mode. **Terrain Following** is temporarily suspended when editing points (on single points and breaklines) so that points are not moved while you are editing. The users can toggle on and off using the space bar as an alternative to clicking the button.
- The new **Toggle Image Display** can be used to visualize terrain data without imagery as a backdrop. This can be useful for examining mass point distribution. Note that terrain edits may still be performed while **Image Display** is off. Closing the terrain or loading a new image will automatically turn the **Image Display** back on.
- In the Terrain Editor module, users can now move to a specific point without entering all three coordinates (X, Y and Z). The missing coordinates are picked up from the current location. If the new point is outside the current view, the image is re-centered over the new point. The Tab key switches the focus among the three edit fields.

STEREO POINT MEASUREMENT TOOL

- Point symbols can be turned off when re-measuring in the Stereo Point Measurement tool.