

Highlights

Better looking mosaics

New color balancing methods improve automatic results and provide more manual control. Improved cutlines and blending reduce touch-ups, and enhanced image controls like dodging remove the need for post-mosaic editing in 3rd-party software.

More accurate aerial and satellite projects

Updated workflows now include:

- New multi-image GCP collection
- Improved airphoto bundle adjustment
- Improved error detection for flight line orientation

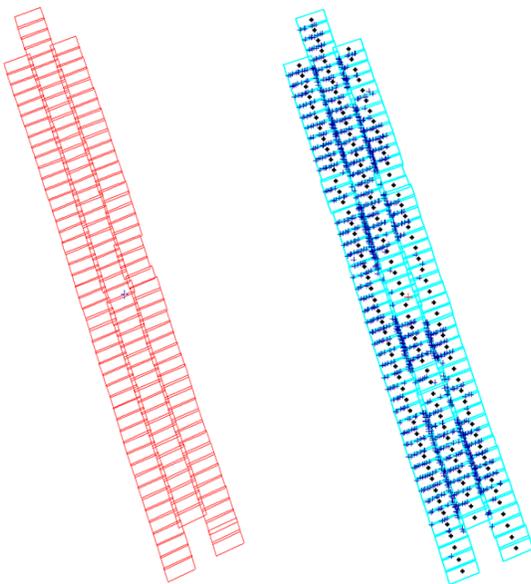
Better, faster atmospheric correction

Much faster processing and interactive handling of spectral plots, plus four new sensors.

More powerful platform

The Geomatica Platform now handles arrays, which means direct access in Python to rasters and bitmaps for custom workflows and applications. We've also improved speed and the variety of readable segments.

New sensors, and more...



Figures (left to right): Project layout, tie point distribution for airphoto bundle adjustment, and a mosaic with improved color-balancing using our new automatic 'bundle' method



Details on improvements and new capabilities

Color Balancing

Improved color balancing methods provide you with consistently good results automatically, and with easier editing in newly expanded manual tools. Improvements to the interface and overall workflow remove the need for post-mosaic editing in other software, so your projects can remain georeferenced and at full bit-depth.

Improvements to automatic mosaic preparation

- Introduction of new “bundle” color balancing technique
 - This technique applies a global adjustment whereby each image's mean and sigma is computed using a "bundle" method. The result is calculated first between each overlapping image, then again using smaller local adjustments using dodging points between pairs of images
- New functionality for post-mosaic editing of enhancements
- New, “Simplify Cutlines” option along with a Simplification Level, which runs the Douglas-Peucker algorithm on the generated cutlines

Updates to OrthoEngine’s manual mosaicking tools

- Extended to support the editing of the bundle results (above), including:
 - Altering the mean and sigma value for each image (large scale balancing)
 - Editing dodging points created by the bundle method. (localized adjustments)

Focus updates

- New post-editing capabilities via a new contrast and brightness editing panel
- Smart GeoFill updates:
 - Real-time preview of data being copied which makes the process more efficient and productive
 - Improved manual editing tools to match new data and surrounding area

New exposure correction

Brightness is lowered on over-exposed pixels only, improving the visibility of details in these areas without sacrificing overall mosaic quality.

- The DESATUR function was developed specifically to create better-looking mosaics, but it can be used to adjust overly bright areas in any image. It is suited ideally to large image mosaics as a post-processing step

New LUT2 function

- You now have the ability to use enhancement curves from different files as well as control the type of the output image data



Aerial Projects

Multi-image GCP Collection

Faster and more convenient methods improve relative and absolute accuracy of your aerial projects:

- Automatic GCP collection now includes the ability to generate multi-image GCPs
- AUTOGCP2 function now includes the ability to generate multi-image GCPs

Bundle adjustment

- A free-network bundle adjustment option is now available in OrthoEngine

Bingo integration improvements

- More information is now included (e.g. timestamp, standard error values)
- This ensures the workflow is compatible with Bingo at multiple points in your project

Gross error detection

- EOIMPORT function now generates a flight line report that highlights potential gross errors

Analog self-calibration

- Analog projects in OrthoEngine now include the ability to use self-calibration

Residual panel upgrades

Significant improvements have been made to the OE Residual report that is generated, including:

- Automated point selection based on residual value
- Ability to select and delete multiple points by reviewing a report on the selected points

Atmospheric Correction

In Geomatica 2015, the linkages between the atmospheric correction capabilities and the spectral plot have been improved. This includes the following enhancements:

- Processing speed and output quality have been increased
- You are now able to properly view and compare active imagery to library signatures
- The spectral plot panel is now linked to the atmospheric correction panel, so you can see the changes in the spectral signatures based on changes made in the ATCOR parameters

Atmospheric correction support has been added for the following sensors:

- Worldview-3
- ZY-3
- GF-1
- FastSAT Charlie



Geomatica Platform

The platform now includes more direct file handling included in Python, specifically the ability to access new layer types:

- **Arrays (i.e. raster layers):** Including bitmaps and metadata. Geomatica now provides fast access to and execution of low-level functions for rasters, bitmaps and all other arrays. This allows easier raster math. The installation now includes NumPy by default.
- **Masks:** Provides easier access to bitmap masks when building applications. Vector masks are not yet supported.
- **DEMs:** Direct support for elevation models, including auto-interpolation and projection.
- **Improved metadata tags:** Handles more tags to aid in cataloguing, sorting, filtering etc.
- **Improved function calls:** Parameters can be specified in any order and omitted parameters will use default values.
- **Segment handling:** Control point, coordinate system and math model segments in .pix files can now be opened and read directly.

Sensor Support

Support for the following sensors has been added:

- Worldview-3: 30cm resolution and 8-bands make this well suited for classification.
- KazEOSat 1: PCI is the first software suite to support this new sensor for commercial use.
- Cartosat-1
- DubaiSat-2
- Kompsat-5
- Risat-1
- Sentinel-1
- Spot-7: Improved model
- ZY1-02C

The following sensors have had upgrades in support:

- Cosmo-SkyMED: Calibration fixes

User Feedback and Requests

As a standard part of any PCI software release, we have spent a great deal of time modifying the Geomatica environment and its processes based on direct customer feedback. Over 100 customer-requests have been addressed in the Geomatica 2015 release.