UNMATCHED ACCURACY

ABOUT UNLIMITEDAERIAL™
Holistic Imaging and Euclidean Teams associate vision and cutting edge technology for our new product UnlimitedAerial™, a software solution developed to produce automatically high resolution digital surface models and true orthophotos.

Our True-MV® multi-view processing pipeline uses all available camera views in one go to generate groundbreaking DSM models and True-Orthophotos. Our award-winning matching pipeline combines the robustness of global smoothing with the crispness of local pattern matching to minimize post-processing editing effort.

UnlimitedAerial™ is our State of the Art Solution for refining camera orientations and camera self-calibration. Compatible with a wide range of digital aerial camera systems, it incorporates GPS, INS, Ground-Control Point and Digital Image Information to align camera poses with highest accuracy.
COMPLETE SYSTEM
HARDWARE & SOFTWARE

ADVANTAGES

- Create DSMs and True Orthophotos in unmatched accuracy
- Handling of thousands of images in a highly optimized way
- No need to look for best hardware – package includes hardware and software
- Modular design allows to adapt our package to the specific needs of our clients
- Visualize and share your data around the globe using Euclidean’s UnlimitedDetail® Technology
SCALABLE AND COST-EFFECTIVE

AERIAL TRIANGULATION
- Support of a wide range of digital aerial cameras.
- Arbitrary flight patterns are supported.
- Automated Tie-Point generation and matching.
- Self-Calibration supports a variety of intrinsic camera models (5 Parameter Standard Model, 12 Parameter Model, 44 Parameter Model).
- Supports GPS, IMU, Ground-Control-Point information, GPS shift and drift correction.
- Advanced inspection of results: error analysis, connectivity analysis, 3D inspection, camera footprint inspection.
- High-performance, multi-threaded bundle block optimization.
- **Accuracy: up to 0.1 pixels**
- With a wide range of supported input formats, Unlimited Aerial easily reads information from your existing AT solution, or generates its own AT solution by large-scale bundle-block adjustment.

TRUE ORTHOPHOTO GENERATION
- Fast production of True Ortho-photos - **processing times below 5min per frame**
- Fully automated mosaicking of True Orthophotos.
- Newest mosaicking methods for seamless transitions between adjacent images.
- Fully automated overlap identification and True Ortho-photo processing.
- Award-winning True-MV® multi-view processing method.
- Optimized to handle shadow areas and moving objects.
- Supports additional DTM models for improved performance.

DSM GENERATION
- Dense digital surface models (DSM) using all available camera views.
- Award-winning matching pipeline combines the robustness of global smoothing with the crispness of local pattern matching to minimize post-processing editing effort.
- Fully automated production of DSMs.
- 10 years of research in advanced computer vision algorithms.
Reconstruct the world using Unlimited Aerial™

True orthophoto and digital surface model

Images are courtesy by City of Graz - Stadtvermessung
INPUT FORMATS
- Support of wide range of aerial cameras
- Supports a wide range of image formats: TIFF, JPG, JPEG2000
- Supports a wide range of orientation file formats:
  - Bluh, Parb, Bingo, CSV, TIFF header info
- Supports GPS, IMU, Ground-Control-Point information, GPS shift and drift correction
- Supports DTM data for guided matching:
  - GeoTIFF Supports DTM models for improved performance
- Supports local and global coordinate reference systems

KEY FEATURES
- Arbitrary flight patterns are supported.
- Automated Tie-Point generation and matching
- Self-Calibration supports a variety of intrinsic camera models
  - (5 Parameter Standard Model, 12 Parameter Model, 44 Parameter Model)
- Calibration of camera orientations and intrinsics
  - (focal length, principal point, lens distortion).
- Image display, 3D scene display, image footprint display
- Advanced analysis features:
  - 3D scene inspection, including tie-point analysis, connectivity analysis, GPS deviations, camera orientations
- Quality Reports
- Automated production of geo-referenced DSM data (GeoTIFF) and TOP images (GeoTIFF)
- Interactive 3D planning of processing project
- Mobile monitoring of processing progress
- Hassle-free system, consisting of processing device and software.
  - Seamless integration into existing intranet architectures
- International 3-day replacement warranty on processing hardware.
- Optional large-volume data storage solution available
OUTPUT RESULTS

- Geo-referenced True Orthophotos in GeoTIFF output format
- Geo-referenced DSMs in GeoTIFF output format
- Point cloud in LAS output format
- Optimized camera position, external orientation and internal parameters, undistorted images
- Accuracy: up to 0.1 pixels
- Processing time: 5 seconds per frame
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