

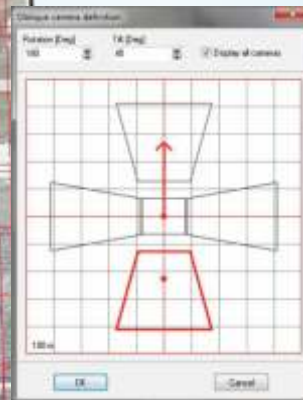
# AeroTopoL

## Mission Planning and Flight Management for Aerial Cameras, Lidar, Scanners and Multi-Sensor Systems



### NEW:

- x Mission cost evaluation module
- x Enhanced oblique planning for OIS S/M/XL
- x Interface for the MMC
- x Track-up display on moving map
- x New Interface for Flir thermal multi-sensor camera (OTS)
- x Improved smooth installation
- x User-friendly wizard
- x GIS-based mission planning
- x Vector and raster operations
- x River & meta projects
- x DTM adjustment
- x Analysis for placing GCPs
- x Accuracy computation
- x Avionic instrumentation
- x Moving map
- x Interaction with AeroStab
- x Scanner missions



More than 100 installations worldwide make AeroTopoL one of the most popular GIS-based Mission-Planning and Flight-Management systems. Beside its full GIS functionality it uses a wizard to make planning and navigation easy and straight forward.

Planning of areas, multiple areas and corridors with Lidar, frame camera or scanner is supported as well as special multi-sensor systems like the OIS (Oblique Imaging System). Sensor combinations e.g. Lidar and camera can be jointly planned and performed.

AeroTopoL supports frame based analog or digital cameras and calculates the accuracy of the project. With AeroTopoL-DTM the terrain is evaluated in order to compute adjusted footprints and ensure proper coverage and overlap as well as the desired range of GSD. Analysis of image overlaps supports the planning of GCPs.

AeroTopoL's oblique option enables planning and navigation of oblique missions using set-ups with single or up to 10 sensor heads (OIS).

The Scan Option supports planning and navigation with scanning sensors e.g. Riegl Lidar Sensors.

The virtual avionic instruments enable precise navigation and keep an overview about the covered imagery on a moving map. In real-time AeroTopoL computes the image coverage using terrain height, flight altitude, camera parameters and rotation angles. Analysis of the overlaps provide information on the proper coverage.

AeroTopoL supports full heading compensation using AeroStab(ilizer). AeroTopoL outputs a detailed log of the mission, as well as recalculated data set for photogrammetric processing.

# Details: AeroTopoL

## GIS

TopoL XT, hybrid topological GIS based on OGC, reading and editing vector & raster data

## Vector formats

Read-Write: TopoL block, Shapefile, DWG, DXF, DGN  
Read: DGN, DWG, DXF, MapInfo, Geomedia, OpenGIS  
Import: ASCII, ArcInfo, DXF, MP, TOP50 OVL, KML  
Export: Shape, DGN, DXF, Geomedia, OpenGIS, ArcInfo, DWG, KML, GPX, MP

## Wizard

Assists step-by-step in defining the coordinate system, creating or importing vector data, designing a project area, mission planning, defining the buffer parameters, navigating and controlling of camera and/or platform, analysing the overlaps.....

## Planning functions

- Using areas or a set of lines with a defined buffer
- Height of terrain or run based average
- DTM adjustment in DTM version
- Overlap between images within a strip
- Sidelap between strips
- Computes the above-ground level
- Computes ground image length
- Computes distance of image centres
- Computes the GSD
- Computes the expected accuracies



## Planning editing functions

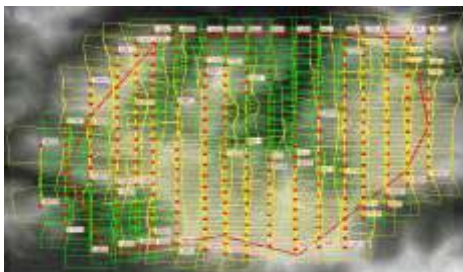
- Moving image-blocks
- Enabling, disabling or deleting images
- Adding strips and extending or adding photos
- Displaying image frames
- Planning of oblique mounted cameras
- Editing terrain height for each image
- Planning additional strips (perpendicular or free)
- Adjusting to terrain model by Scale/GSD hysteresis, persistence of minimum overlap, min. flight altitude over ground, max. absolute altitude, ramping, savezone diameter
- Disabling images by a second layer (small-areas function)

## Planning outputs

- Direct plot function
- Create TopoL Block for further analysis or export to shape file
- Export ASCII format to any coordinate system
- Computes a layer with overlaps to locate best places for GCPs

## External devices - GPS/Camera

- Uses any GPS with NMEA output
- Triggers snap box to release a camera
- Direct connection to AeroNav products
- Direct connection to AeroStab
- Connection to NovAtel Span
- Connection to PosAV
- Full interface to AeroDiDOS
- Direct interface to Microsoft UltraCam, Dimac, Jenoptik JAIR
- Interface to Riegl RiAquire
- Event confirmation (mid exposure pulse)



## Predefinitions for flight management

- Accuracies of GPS (and IMU)
- Antenna offset
- Orientation of camera
- Strip sequence and run direction automatic or manual
- Distance of navigation point
- Height buffer, inner & outer buffer
- Name of output file
- Camera confirmation on/off (event signal)
- Full heading compensation on/off (only with AeroStab)
- Hold-on release on/off (only with AeroStab)
- Continue launched projects
- Communication with RiAquire, Ultracam, Dimac and JAIR
- Auto-zooming levels and interval

## Navigation instruments

- Artificial horizon (adjustable by scale, roll-alert)
- Guidance (auto-scaling and colour coded) displays as crosshairs height & side clearance to planned track
- Guidance above (auto-scaling & colour coded) displays side clearance and direction of movement with relation to track plus the distance to next image
- All instruments are adjustable in size, font size, colour...
- 2 navigation panels e.g. for dual monitor systems
- Free definable text windows e.g. number of remaining images in run...
- Control of IMU health with Span system

## Additional touch icons

- Manual image release
- Parking/Start mission
- Interrupt camera
- Corridor filter On/Off
- Strip selection
- On/Off auto-zoom



## Display on moving map

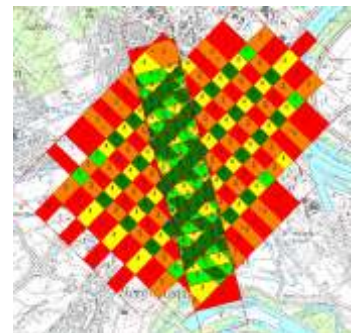
- Track up option
- Position and orientation of the aircraft
- Strips with next target
- Recorded image centers
- Auto-zoom
- Footprint (image frame using x, y, z, and roll angles)

## Output files

- Rawtxt file with mission meta data,
- Aerotxt file with recomputed photogrammetric values
- TopoL block with image centers and frames
- TopoL block with overlap analysis

## Additional functions

- Raster transformation
- 3D output in Google KML
- Numerous editing tools
- Geo database
- ....



## Requirements

- Windows 2000/XP, Vista, Win7-10
- 1200 Mhz CPU
- 1Gbyte Ram
- AeroTopoL supports touch-screens
- 

## Versions

AeroTopoL Plan (for mission planning only)  
AeroTopoL (complete package)  
Option DTM (planning and navigation over DTM)  
Option Oblique S (planning 1 oblique camera)  
Option Oblique XL (planning 1-10 oblique cameras)



**GGG - Geotechnik, Geoinformatik & Service GmbH**  
**Kämmererstraße 14, D- 67346 Speyer / Germany**

Tel.: +49 6232 629271 Fax: +49 6232 629274 Mobile: +49 171 3588546  
www.aerotopol.com / www.ggs-speyer.com

*Every effort has been taken to ensure that this information is correct at the time of printing. GGS reserves the right to make changes to specifications*