



# AeroSys»AT

Aerotriangulation Software

## AeroSys»AT

Runs on *Microsoft Windows XP/2000/NT(tm)* operating systems and is a 32-bit software program optimized for maximum adjustment speed for today's PCs. It's GUI's are Windows® compliant for intuitive program navigation and ease-of-use. It operates on both aerial and close-range data and includes configurable options for self-calibration, surveying observations and GPS / IMU photo centers and drift parameters. It also has integrated pre & post-adjustment data checking and blunder detection reporting. The training slides are comprehensive and very readable; the "Getting Started..." section leads the new user through the system to get them up & running without delays or frustration. Best of all it is the most cost effective aerotriangulation package in the industry;

*Get complete bundle adjustment capability within budget !*

## AeroSys»AT is:

- 32-bit optimized for speed;
- operationally robust;
- Windows® GUI driven;
- very intuitive;
- easy-to-use & navigate;
- powerful and flexible;
- plugs-in to many softcopy systems;
- statistically rigorous;
- supports Applanix POS / EO data format;
- fully documented in Adobe PDF format; and
- ***Cost Effective AT.***

## Price Matrix

Product ID	Photo Limit	List Price (in US \$)
<b>OEM</b>	<b>15</b>	<b>FREE</b>
GIS	25	400 \$
Intro	100	1,000 \$
Pro	2,000	2,000 \$
Ultra	10,000	4,000 \$
<b>AeroX</b>	<b>configurable</b>	<b>call us</b>
s/w support subscription	12 month	365 \$

The **AeroX pak** is intended for softcopy developers that need a low cost COM based (GUI-less) bundle adjustment engine to perform frequent bundle block runs in real-time situations. This component is suitable for software development with Borland Delphi & C++ and Microsoft VC++, VB and .Net/C#.

The **GIS pak** is intended to serve to growing market of the GIS and Engineering community who are producing their own spatial data products such as digital Orthophoto mosaics.

The **Intro pak** has had its max photo limited increased to a level that will meet the needs of small photogrammetric firms worldwide.

The **Pro pak** maintains its 2,000 photo limit, but has had a price increase commensurate with V6.0 new features.

The **Ultra pak** is intended for those high-end product firms who are performing AT on very large photo blocks which are becoming increasingly more common with the advent of the usage of small format digital aerial camera systems applied to aerial resource mapping. Recommended for use on high-end work stations minimally equipped with AMD Opteron / Athlon 64 cpu(s), 2 GB RAM and high-speed SATA hard drives.

### Upgrade pricing from previous AeroSys versions to v6.0

Older vx.x	Pro vx.x to Pro v6.0	Intro vx.x to Pro v6.0	Intro vx.x to Intro v6.0	Intro vx.x to GIS v6.0
V 3.x	750\$	1750\$	750\$	250\$
V 4.x & v5.x	600\$	1600\$	600\$	100\$

# Feature Matrix

<b>Bundle Solution Engine</b>	
Least Squares Sparse Matrix methodology	<input checked="" type="checkbox"/>
Reduced Normal Equations	<input checked="" type="checkbox"/>
Optimized Banded – Bordered Code	<input checked="" type="checkbox"/>
<b>Data Handling</b>	
Supports many photocoordinate formats	<input checked="" type="checkbox"/>
No restrictions on number of observations	<input checked="" type="checkbox"/>
Supports AB- GPS & IMU observations	<input checked="" type="checkbox"/>
Supports surveying angle, distances & height differences	<input checked="" type="checkbox"/>
Independent weighting of all 6 EO parameters	<input checked="" type="checkbox"/>
Supports Lake points	<input checked="" type="checkbox"/>
Supports multi-camera blocks (aerial & close-range)	<input checked="" type="checkbox"/>
<b>Operational Modes</b>	
AB- GPS drift parameters	<input checked="" type="checkbox"/>
Self-calibration	<input checked="" type="checkbox"/>
Free Net adjustment	<input checked="" type="checkbox"/>
Earth curvature & atmospheric refraction	<input checked="" type="checkbox"/>
Auto balancing of photocoordinate observations	<input checked="" type="checkbox"/>
<b>Statistics &amp; Graphics</b>	
Predicted sigmas for all solution unknowns	<input checked="" type="checkbox"/>
Standardize residuals for all observations (data snooping)	<input checked="" type="checkbox"/>
Traditional residuals, RMS, Means & distributions	<input checked="" type="checkbox"/>
Quick summary dialog	<input checked="" type="checkbox"/>
Complete formatted text output log	<input checked="" type="checkbox"/>
Graphical error ellipse DWF diagram	<input checked="" type="checkbox"/>
Graphical photo & model footprint DWF diagrams	<input checked="" type="checkbox"/>
Model checking of AO's	<input checked="" type="checkbox"/>
Control point space intersection analysis	<input checked="" type="checkbox"/>
Projected ray of nearest proximity residuals	<input checked="" type="checkbox"/>
<b>Data Pre-Processing</b>	
Photocoordinate parsing	<input checked="" type="checkbox"/>
Interior Orientation / photocoordinate refinement	<input checked="" type="checkbox"/>
Relative Orientation (independent models)	<input checked="" type="checkbox"/>
Strip Formation (in model space)	<input checked="" type="checkbox"/>
Block Formation (in model space)	<input checked="" type="checkbox"/>
Polynomial Strip Adjustment (model to terrain)	<input checked="" type="checkbox"/>
Hybrid 2D/3D Transformation (model to terrain)	<input checked="" type="checkbox"/>
Space Resection for EO approximations	<input checked="" type="checkbox"/>
Space Intersection for additional tie points	<input checked="" type="checkbox"/>
Flexible data merging	<input checked="" type="checkbox"/>
Ray intersection checking	<input checked="" type="checkbox"/>
No black box, all files are formatted text and readable	<input checked="" type="checkbox"/>
Auto identification & logging of data outliers	<input checked="" type="checkbox"/>
Complete statistical log for all intermediate steps	<input checked="" type="checkbox"/>

## Support Options

AeroSys Consulting is committed to providing quality technical support, and we offer several support options designed to meet the needs of our customers. Free, unlimited technical support by e-mail is available for thirty (30) days from the date of purchase for any installation or production issues related to the licensed product. After 30 days, the customer may continue to use the free technical support options that are available or purchase a paid support option. If you have any questions about purchasing support or the support options available to you, please contact us.

## Free Technical Support

### Forum

The AeroSys»AT support forum can be used to post questions and interact with users and our technical support staff. (Available 3<sup>rd</sup> Qtr 2004)

### FAQs

Frequently asked question will be posted on-line in the Aerosys Web site in the support area.

## Paid Support Option

### Standard Support Subscription - [\\$365/year](#)

\* Unlimited technical support by email (or telephone within North America) for any installation or production issues.

\* A 10% renewal discount if purchased within 30 days of subscription expiration.

## AeroSys»AT brings features to you:

- Standard bundle block adjustment mathematics.
- Operates for both Aerial and Close Range
- Pre-processing to automatically compute approximations of unknowns:
  - Project Setup
    - Camera Data Base Editor
    - Image Coordinate Format Translations
      - ABC (tri), ALBANY (mea), ADAM (pco), ATP, BINGO, BLUH, Triada (BlockMsg & Raw), CPM1, Intergraph\_IMA, IIS Alpha 2000, ISBBA, JFK, Kern DSR, PAT-B (plus, and plus-plus variants), RWEL (cp), USGS CPM, WIS-DOT, Zeiss and more....
  - Image Coordinate Refinement
  - Independent Model Relative Orientation
  - Strip and Block Formation in Model Space
  - Classic Polynomial Strip Adjustment
  - 3D-2D Hybrid Rigid Body Coordinate Transformation
  - Space (Photo) Resection
  - Space (Point) Intersection
  - Pre-Adjustment Image Rays Checking
  - Quite possibly the fastest sparse matrix solution of the Reduced Normal Equations in the industry.
  - Robust mathematics completely integrated with error checking and error (gui) messages.
  - Blunder detection methods employing data-snooping and standardized observation residuals.
  - Self-calibration with addition parameters (CFL, Xo, Yo, K0, K1, K2, K3, P1, P2)
  - Airborne GPS solutions supporting:
    - Applanix POS/EO data format;
    - Independent Photo-center observation weighting (omega,phi,kappa,XL,YL,ZL)
    - AB-GPS Drift Parameters

- Complete Error logging and Statistical output
- Post-Adjustment analysis and Quick Summary GUI to easily evaluate the solution.
- Easy to manage Text Output , including PAT-B formatted files and many others..
- Model Checking tool with both graphical and text file output.
- Complete text file output of adjusted data ready for import into many softcopy and analytical orientation systems.
  - DAT/EM Summit Evolution
  - DVP-GS
  - Autometric KDSP & Softplotter
  - Supresoft VirtuoZo
  - PhoTopoL
  - IPS OrthoMapper & SurfaceMapper
  - R-WEL Desktop Mapping System
  - AMSA
  - VR-Two
  - Z/I Imaging station
  - ADAM Technology Promaps / 3DD system
  - BAE Socet Set
  - Carto Instruments AP190
  - GCS ABC32
  - Softmap AP32
  - Sigma Precision products & equipment
- Flexible Operation with parameter settings via Windows GUIs
- Windows / COM messaging to softcopy systems
- Many photogrammetric utilities
  - stereoplotter settings
  - stereopair orientation
  - camera calibrations
  - coordinate transformations
  - data format conversions
  - coordinate rotations and more ....!

# AeroSys»AT Easy Data Setup

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Data files for AeroSys programs consist entirely of FREE-FORMAT ASCII (text) files that can be easily prepared or modified using most window's-based text editors. AeroSys automatically creates most of its own data files for fast, efficient progression from start to finish throughout the system. Input data text files are structured as free format and freely viewable.

## Simple Operation

AeroSys's user-friendly programs are entirely menu driven at the click of a mouse. The intuitive graphical user interface (GUI) environment allows the user to easily repeat the usual RUN-ANALYZE-EDIT sequence quickly and efficiently.

## System Requirements

AeroSys runs on most Intel class or AMD cpu based computers configured with at least 256 MB RAM (512 MB recommended) running under Win XP/2000/NT.

## Comprehensive Documentation

An easy-to-read, printable on-line user's manual is provided along with sample data files. The "Getting Started" chapter gives the user a step by step introduction. PDF & PPT formats.

## Great Versatility

AeroSys bundle adjustment can be used to solve networks of aerial blocks as well as close-range designs. It can simultaneously employ multiple cameras within a block, has self-calibration capability, can incorporate surveying observations and kinematic airborne GPS coordinates and IMU values.

## Technological & Speed Advantage

Mapping professionals can fully utilize their state-of-the-art PC workstations. Small companies needing aerotriangulation capability can perform in-house AT, affordably. AeroSys is compiled into optimized 32-bit exe's for top performance.

Good  
Value

## **AeroSys\_AT is the best valued AT package on the market!**

Packages include documentation in PDF & PowerPt format and sample data sets Purchase provides license for use of the program system on a stand-alone PC workstation.