



# inBLOCK

## Block adjustment with a new level of reliability.

**inBLOCK is a new-generation bundle block adjustment software. It combines advanced mathematical modelling and adjustment techniques with user-friendliness and excellent interactive graphical analyzing capabilities.**



*inBLOCK is designed to take best benefit from state-of-the-art and future sensor observations.*

The advanced adjustment engine of **inBLOCK** is impressively flexible and highly configurable, comprising full GPS and IMU support with optional shift and drift correction, self-calibration with additional parameter sets, and effective multi-phase blunder detection.

Complete statistical information including variance components, precision, internal and external reliability measures, among others, is available for a thorough analysis of the block.

Excellent graphical tools make the monitoring of the block adjustment results easy. Traditional views (vectors, ellipses etc.) are complemented by new types of visualization (e.g. traffic lights) for highly comfortable inspection of the data.

**inBLOCK** is suited for adjusting aerial blocks of any shape and overlap, ranging from small projects to the most challenging ones.

The highly flexible parametrization of the adjustment makes **inBLOCK** an ideal tool for the calibration of digital aerial frame cameras.

**inBLOCK** is part of INPHO's modular system. It is delivered with ApplicationsMaster, the core of the system, providing a comprehensive collection of essential tools. For details see pages 32ff.

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## Features

- Multi-sensor concept supporting film cameras, digital frame cameras, GPS and IMU.
- Robust computation of initial values for fully automatic block set-up; no need for any schematic block information.
- Powerful adjustment engine:
  - Free block adjustment available
  - Flexible weighting schemes
  - Sparse matrix technology
  - Bandwidth minimization
  - Reduced normal equations
- Multi-camera support in one block and camera-specific self-calibration:
  - Three optional parameter sets: physical (5), Brown (16) or Ebner (12)
  - Optional focal length & principle point calibration
- Advanced methods for gross error detection:
  - Effective blunder elimination prior to adjustment
  - Robust estimation (automatic)
  - Data snooping (interactive)
- GPS data handling:
  - Drift and shift compensation (global or strip-wise)
  - Optional antenna eccentricity calibration
- IMU data handling:
  - Preprocessed GPS/IMU data from POS AV/POSEO by Applanix and AEROCtrl by IGI
  - Attitude data are used as constraints
  - Drift and shift compensation (global or strip-wise)
  - Boresight misalignment calibration
- Comprehensive statistical information available:
  - Traditional values like residuals, RMS and standard deviations
  - Variance components
  - Internal and external reliability values for all observations and unknowns
  - Sensitivity analysis for undetectable gross errors, and their possible influence onto the block

- Sophisticated graphical block analysis:
  - Visualization of all results and statistical information
  - Interactive editing of observations (renaming, deactivating, reactivating, deleting, change of weighting)
  - Zooming, panning and rotation of data in 3D
  - Data classification and color-coding

## Benefits

- Processes blocks of any shape and overlap.
- Well-suited for calibration of digital aerial frame cameras.
- Easy to use intuitive graphical user interface.
- State-of-the-art computation algorithms.
- Full statistical information available.
- Sophisticated block visualization.
- High precision & high reliability.
- Easy integration into any third-party workflow.

## Recommendations

- High-end PC workstation
- 4 GB RAM
- Windows Vista/XP/2000, 32 or 64 bit

