What's new in Inpho 5.4

About

With Inpho 5.4, Trimble has significantly improved Inpho's performance, workflow integration and result quality.
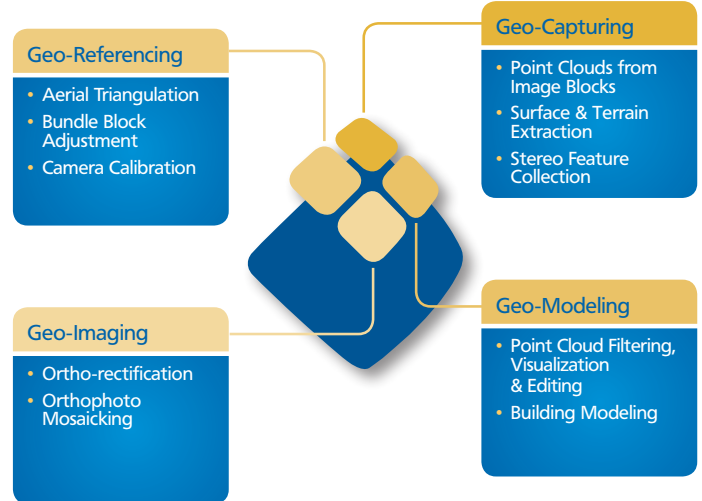
Key to the software release is the introduction of "cost-based" image matching: an advanced technique for extracting point clouds with a density of up to one point per pixel, created solely from aerial images. This method provides very dense, accurate and complete digital terrain models suitable for true orthophoto production and automatic feature extraction, offering a cost-effective alternative to laser scanning.

Inpho 5.4 also achieves performance improvements through the introduction of parallel processing along with new filtering and tiling strategies for point clouds. As a result, orthophoto generation, image adjustment, global tilting, seam line detection and ortho-mosaicking significantly outperform earlier versions.

In addition, the version includes new graphical analysis, point cloud viewing and interactive image enhancement tools designed to enrich data visualization and manipulation for large projects. Inpho suite 5.4 delivers vastly improved performance, workflow integration and result quality.

Availability

The Inpho 5.4 software suite is available now through Trimble's Inpho distribution channel. Customers with a valid maintenance contract for Inpho software will receive the upgrade.

Geo-Referencing
- Aerial Triangulation
- Bundle Block Adjustment
- Camera Calibration

Geo-Capturing
- Point Clouds from Image Blocks
- Surface & Terrain Extraction
- Stereo Feature Collection

Geo-Imaging
- Ortho-rectification
- Orthophoto Mosaicking

Geo-Modeling
- Point Cloud Filtering, Visualization & Editing
- Building Modeling

All software modules are delivered together with the ApplicationsMaster control center which includes basic sensor definition, image preprocessing and DTM tools.

High Density Point Clouds from Images

Cost based image matching
- Point clouds from images with a density of up to one point per pixel
- Low cost alternative to LiDAR data

Increased downstream quality
- True orthophoto production benefits from higher point cloud accuracy
- Automatic feature extraction yields better results due to increased point density

Better performance
- Higher point density results in faster data interpolation

Large Data Handling

Parallel processing
- Essential workflow steps feature vastly improved performance

Point cloud filtering
- Substantial performance improvements in filtering processes
- Simplified selection of filtering and classification parameters

New data formats
- Support of BigTiff image format
- TPIX format support for OrthoMaster and OrthoVista

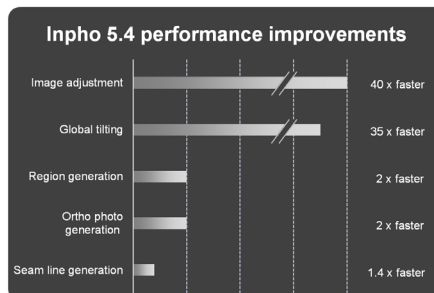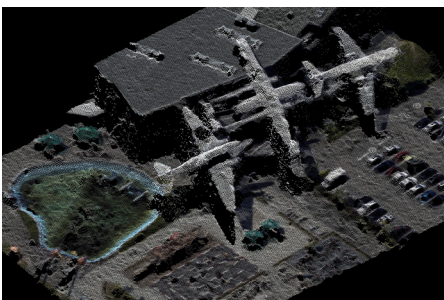## Usability & Workflow

Graphical analysis
- Easier visualization and inspection of aerial triangulation results
- Increased efficiency for interactive quality assurance workflows
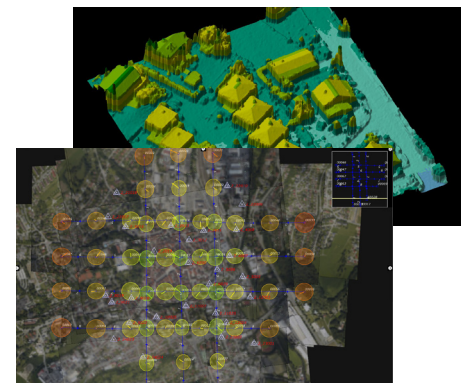
Point cloud viewing
- Higher resolution for graphical visualizations
- Easier detection of data errors

Interactive editing processes
- Increased efficiency
- More intuitive to use

Inpho 5.4 performance improvements

Image adjustment	40 x faster
Global tilting	35 x faster
Region generation	2 x faster
Ortho photo generation	2 x faster
Seam line generation	1.4 x faster

* Performance measured using 10cm resolution RGB airborne imagery

Inpho 5.4 at a Glance

Inpho Module	Functionality	Benefit
Match-T DSM	Cost Based Image Matching	• High resolution point clouds from imagery • Low cost alternative to LiDAR • Improved downstream accuracy
	Fast point cloud filtering	• Substantial performance improvements in filtering processes • Simplified selection of filtering and classification parameters
	TPIX export	• Increased automation • Improved workflow
Match-AT	Enhanced visual aerial triangulation analysis	• Easier visualization and inspection • Increased workflow efficiency
DTMaster	Improved point cloud viewing	• Higher resolution for graphical visualizations • Easier detection of data errors
	Enhanced editing workflow	• Increased efficiency • More intuitive to use
OrthoMaster	Parallel processing support	• Improved performance
	TPIX support	• Enhanced large data handling • Improved performance
	OrthoVista project export	• Streamlined workflow
OrthoVista	Parallel processing support	• Improved performance
	GUI improvement	• Increased efficiency • More intuitive to use
All Modules	BigTiff data support	• Enhanced large data handling
	E-mail notification	• Remote process monitoring • Fast problem response

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