


MATCH-T



MATCH-T automatically generates digital terrain models with high accuracy, reliability and productivity.



MATCH-T stands for automation and precision in DTM generation.

MATCH-T is inpho's automated DTM generation environment providing highly precise digital terrain models derived from aerial and satellite imagery. MATCH-T is part of inpho's digital photogrammetric system.

MATCH-T automatically generates digital terrain models interpolated from extremely dense 3D point clouds which are extracted from the imagery.

Best accuracy is achieved by applying advanced algorithms for image matching and data filtering.

A vast variety of organizations from all over the world rely on inpho's experience in automatic DTM generation.

MATCH-T is available stand-alone, or as part of complete solutions for photogrammetric DTM generation:

DTM Box combines **MATCH-T** with DTMaster Stereo, inpho's powerful photogrammetric DTM editing station.

Summit Evolution & MATCH-T fully integrates **MATCH-T** into the advanced digital stereo plotter Summit Evolution from DAT/EM Systems International.

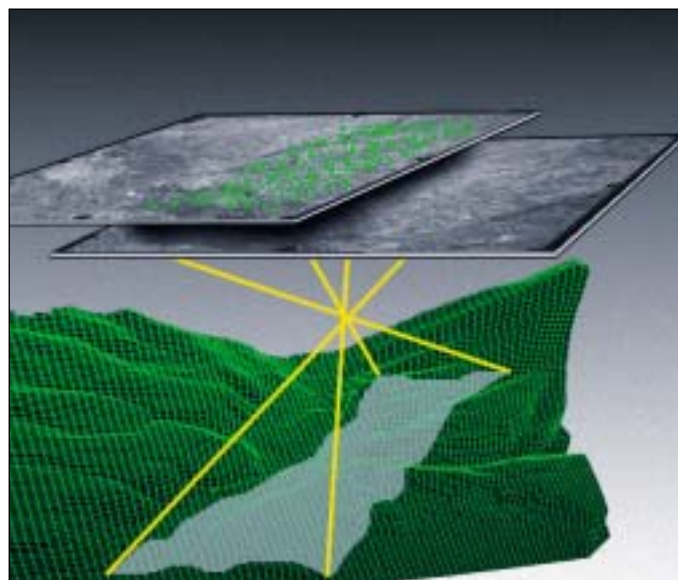
Image Capture

Aerial Triangulation

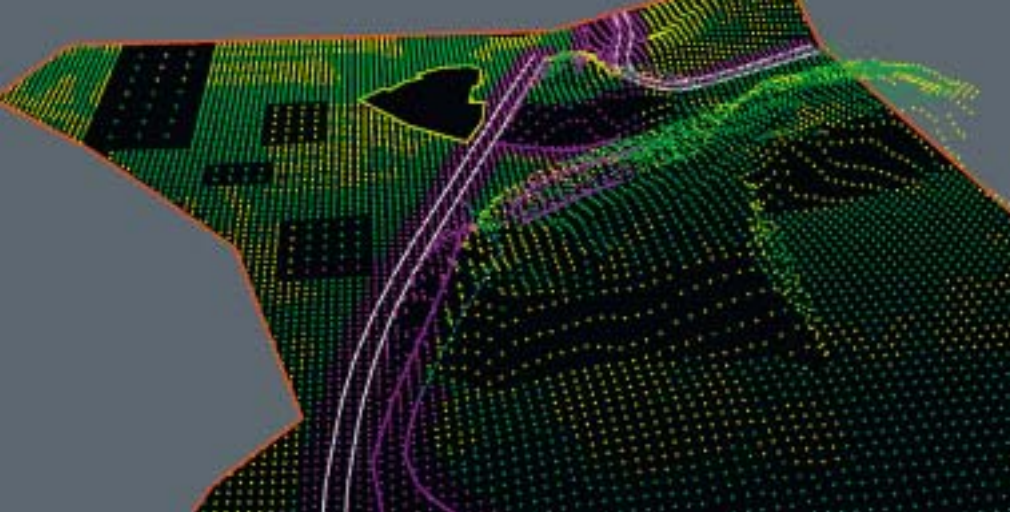
Data Capture

Terrain Modeling

Orthophoto Processing



Automatic digital terrain model extraction is done through extremely dense feature-based matching techniques, guaranteeing reliable and accurate results.



Features

- Automatically derives digital terrain models from aerial and satellite imagery.
- Extremely dense DTM by using feature-based matching techniques.
- Automatic adaptive DTM grid width depending on the surface curvature.
- Considers pre-measured morphological data (breaklines, 2D and 3D exclusion areas, borderlines).
- Eliminates outliers, e.g. trees, houses, by robust finite element interpolation.
- The project area may be subdivided into polygonal areas with individual, appropriate parameter settings for terrain type and terrain coverage.
- Optimized point extraction by dynamic filtering of sensor noise.
- Increased number of points in poorly textured image areas through local auto-optimization of parameter settings.
- High quality terrain representation near breaklines by adaptive parallax bound strategy.
- Numerous functions for internal quality control.
- On-line epipolar image resampling:
 - No extra processing step
 - Necessary disk capacity reduced, no intermediate storage
- Several DTM exchange formats:
 - XYZ, SCOP RDH
 - Several other DTM formats are supported if MATCH-T is combined with DTMaster or Summit Evolution
- Support of analogue and digital frame sensors:
 - Flexible custom sensor definition
 - Predefined DMC and UltraCamD sensors
 - RPC formats for IKONOS and Quickbird
- Image formats supported:
 - TIFF, TIFF JPEG
 - 8-12-16 bit
 - ECW (ER Mapper)
 - Plug-in technology for third-party proprietary image formats

Versions

- MATCH-T
 - Offered stand-alone or as part of DTM Box, including DTMaster Stereo
- MATCH-T Evolution
 - MATCH-T functionality fully integrated in Summit Evolution

Benefits

MATCH-T is well-proven and production-oriented, and offers its users significant benefits:

- Superior productivity through:
 - High processing speed (average 3-5 min. per image pair)
 - High level of automation
 - Minimized user interaction for project set-up
- Superior quality through:
 - High accuracy by leading-edge matching techniques
 - High reliability by internal quality control
- Easy integration into any third-party workflow.

MATCH-T generates regular or adaptive grid widths depending on the surface curvature. Pre-measured morphological data is rigorously considered. Millions of automatically matched points are used for the robust interpolation of the DTM grid. Grid codes help to analyze quality and morphology.

Recommendations

- High-end PC workstation
- 512 Mbyte RAM or more
- High-capacity disk system
- Windows XP/2000

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DTM borders may be defined covering multiple images of a photogrammetric block.

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