



MATCH-T DSM

INPHO SOFTWARE

Automatically generate dense point clouds and digital terrain and surface models (DTM/DSM) from aerial and satellite image blocks.

Create exact colorized surface models and terrain models from imagery:

- ▶ Acquire very dense point clouds and high quality surface models directly from stereo imagery using image matching techniques
- ▶ Advanced multi-image matching creates point clouds as dense as one point per pixel at a lower cost than aerial laser scanning
- ▶ Point clouds from image matching provide excellent results for orthophoto generation and city modeling applications
- ▶ Remove non-ground objects and achieve bare earth digital terrain models (DTMs) using robust filter methods
- ▶ Expand production capabilities using state-of-the-art multi-threading and distributed processing

Multi-layered matching takes all locally overlapping images into account, achieving dense point clouds – even in urban and forested areas.

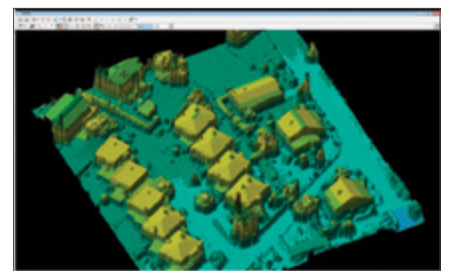
In DSM mode, even narrow urban streets can be detected with image overlap of at least 60/60 percent. Surface models from MATCH-T DSM with their LiDAR-like characteristics are well-suited for applications like city modeling.

Feature Capabilities

- ▶ DTM and DSM generation from aerial images (frame and pushbroom sensors), and from various types of satellite imagery
- ▶ Seamless DTM or DSM generated for user definable areas, which can be any sub-block or polygon area, or the entire image block
- ▶ Dense matching technique produces point cloud density up to 1 point per pixel, providing rich detail and sharp edges with sub-pixel accuracy
- ▶ Specialized noise filtering strategies
- ▶ Different filter techniques for DTM and DSM extraction for obtaining optimized point clouds
- ▶ Automatic tiling for simultaneous grid and point-cloud output
- ▶ Tight integration into point-cloud editing workflows e.g. with DTMaster Stereo

Key Features

- ▶ MATCH-T DSM generates regular grids or extremely dense point clouds, and guarantees for reliable and accurate results:
- ▶ High speed batch processing and optimized hardware utilization for excellent productivity
- ▶ Extensive automation features for minimal user interaction
- ▶ Advanced dense matching techniques with internal quality control deliver a high standard of project quality
- ▶ Point cloud coloring from aerial image blocks or orthophotos
- ▶ Easy integration into any third-party workflow



TECHNICAL SPECIFICATIONS

FEATURES OVERVIEW

- Consideration of pre-measured morphological data (breaklines, 2D and 3D exclusion areas, borderlines)
- DTM generation with elimination of outliers, e. g. trees, buildings, by robust finite element interpolation
- Subdivide the project area into polygonal areas with appropriate parameter settings for the terrain type and coverage
- Optimized point extraction using dynamic sensor noise filtering
- Regular point distribution in poorly textured image areas through auto-optimization of local parameters
- Adaptive parallax bound strategy for high quality terrain representation near breaklines
- Extensive internal quality control functions
- Integrated DTM Toolkit provides flexible DTM postprocessing with functions like merging, splitting or tiling of DTMs, batch-filtering/classification, gap-filling, grid interpolation, mapping-grade contour generation, datum transformations and format conversions
- Filtering methods to thin-out DTM or DSM data
- Output into grid files or irregular point clouds with automatic tiling
- Optional distributed processing in combination with DPMaster

OUTPUT FORMATS

- SCOP DTM
- LAS
- And others

VERSIONS

- MATCH-T DSM Lite:
 - Restricted to projects up to 250 images
 - No sub-block support
 - Only one output area per process
 - No multithreading
 - Restricted to 12 satellite scenes
 - Restricted to 12 ADS images

OPTIONS

- MATCH-T DSM (DPL):
 - High-volume extension using distributed processing technology
 - Efficiency increase by using MATCH-T DSM in a multi-core and multi-computer setup
 - Requires DPMaster (included) for organizing the additional computer pool and one full license of MATCH-T DSM
- Monthly rental and upgrades from lite versions or updates from previous versions available
- Maintenance (1st year included in software price) includes support and version updates
- Network licensing available

SYSTEM REQUIREMENTS

- Multicore PC workstation (1 license supports up to 16 cores)
- 8 GB RAM
- High-capacity disk system
- Windows 7, 64 bit

BUNDLE

DTM Box:

- Bundle of MATCH-T DSM, DTMaster editing for a complete workflow from point cloud generation through visualization and editing to postprocessing (quick filtering, classification, gap-filling and mapping grade contour generation)

SUPPORTED SENSOR TYPES

- Imaging sensors:
 - Analogue and digital frame sensors
 - Panchromatic or multichannel
 - ADS Pushbroom sensors
 - satellite sensors (including SPOT 1-7, Plejades, Quickbird, IKONOS, ALOS, ASTER, CARTOSAT, IRS, GeoEye, Landsat, OrbView, RapidEye, WorldView, Resurs-P...)

SUPPORTED FORMATS

- Supported image formats:
 - Georeferenced orthos: GeoTIFF, TiffWorld (tfw), ADS+tif/tfw
 - TIFF, JPG, BigTiff
 - JPEG2000, TIFFjpeg
 - EXIF
 - 8/12/16 bit
- Height model / morphology data formats
 - Grid-operations:
 - ◊ *.dtm *.rdh *.bil *.fit *.tol *.grd *.tif *.tiff *.smti *.tpix.shp, BIL, BWNP, BXYZ, DTM, DXF, DXF_TIN, FLT , GRD, LAS, LASZip, SHP_TIN, TIFF16, TIFF32, VRML, VRML_TIN, WNP, XYZ
 - Point-cloud operations:
 - ◊ LAS, LASZip, XYZ, BXYZ

For prices and distribution partner information please contact: sales@inpho.de



NORTH AMERICA

Trimble Navigation Limited
10368 Westmoor Dr
Westminster CO 80021
USA

EUROPE

Trimble Germany GmbH
Am Prime Parc 11
65479 Raunheim
GERMANY

ASIA-PACIFIC

Trimble Navigation
Singapore Pty Limited
80 Marine Parade Road
#22-06, Parkway Parade
Singapore 449269
SINGAPORE