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New Features in TNTmips 2010

A tileset is a collection of small image files called tiles in a predefined file size, format, and directory structure. It is designed for efficient viewing of very large images or maps over the Internet. Labels and geometric features, such as roads, polygons,... are rendered into tiles with appropriate styles and transparency for each zoom level at which they will be viewed.

TNTmips for 2010 focuses on new features designed to assist you in publishing geodata via the Internet. This newest release continues to provide you with all the extensive geodata preparation and analysis tools released in TNTmips 2009 and over the past 25 years. But now you do not have to buy, set up, and maintain a complicated WMS or other special service on your own or a leased web site to present, use, and provide public Internet access to your project results. You simply use new TNTmips 2010 processes to convert your geometric, map, and image layers into tileset structures and copy them to your web server. These web standard geodata tilesets can then be linked to any web page and immediately accessed from any location by anyone in Google Maps, Bing Maps, Google Earth, NASA World Wind, and of course, in the view of any TNT 2010 product.

No other *commercial* software package *at any price* provides this powerful, easily used, comprehensive set of tools to publish your project materials of any size and resolution via the Internet. The several new comprehensive tileset processes provided by TNTmips 2010 and outlined in this summary start with your current raster or geometric materials and project results. They manage and transform your geodata into standard tilesets that can be copied and used *without further effort or modification* to the web site you or your company maintains or leases.

To show you how well this works, MicroImages has used these new TNTmips 2010 processes to convert some very large public geodata sets into tilesets and then copied them to our web site. These include a global 10-meter Landsat tileset (circa 2000), tilesets of various USA 1-meter state orthoimages (2008 or 2009), and coverage of sample cities at very high resolution (up to 10 centimeters). You can view these in Google Maps and Bing Maps (a common standard tileset is used for both). All these tilesets can also be added to the 2D view in any TNTmips 2010 product to provide a base or reference layer, for georeferencing, in edit to interpret or update geometric features, in stereo using the global and USA DEMs provided free with every TNT product, apply spatial filtering, and for other image enhancements.

Projecting your geodata onto the Internet is not the only powerful new feature in TNTmips 2010. TNT Job Processing has had extensive testing and new features added to help you exploit your multiprocessor computers at no additional cost. For example, all the new processes used to build and manage tilesets for use on the Internet can be mixed and managed by Job Processing as well as in the TNT geospatial scripting language. Various TNT interface components have also been redesigned including the windows used to select geodata layers. New features are also available for interactive query building in display, image band correlation, LAS point class assignment, and cascading picklists.



Summary of New Features in TNTmips 2010

Easy Web Publication of Your Geodata

*(no special web service required, **only TNTmips!**)*

- new Geomashup process
 - available now for Google Maps and Bing Maps
 - available soon for Google Earth
 - creates complete HTML/JavaScript web page
 - instant preview of page in any browser
(Explorer, Safari, Firefox, Opera, Chrome, ...)
 - add Google or Bing Proprietary layers¹
 - add your tilesets as base or overlay layers
 - Google Maps Tile Overlays
 - Microsoft Bing Maps Custom Tile Layers
 - Google Earth Super-Overlays *[pending]*
 - add KML graphic overlays
 - add Google, Bing, and custom gadgets
(layer controls, layer transparency slider, zoom box, address lookup, ...)
 - your tilesets can be located on your web site
 - add tilesets located anywhere on the Internet
 - zip entire mashup as ready-to-go web page
(packages mashup, tilesets, KML, gadgets, ...)
 - unzipping installs geomashup on web site
- [¹ A Google or Microsoft license is required to use their proprietary map and image tilesets outside of a browser. Since the Geomashup process assembles them for use in your browser, their use in this fashion - as part of a web mashup - is permitted.]*

Redesigned Geodata Selection Dialog

- completely new layout
- more efficient controls
- choose detail or list form
- select/add tilesets, files, objects, folders
- open each folder using directory tree
- create list of favorite folders
- select multiple items in list
(shift-click for range, control-click for items)
- delete selected items in list *(tilesets, files, or objects)*
- smart 'add-all' folder search
(finds specified item type, even subfolders)
- sort by name, date, size, type
- displays number of items listed/selected

Interactive Query Builder for Display

- automatically builds query as components selected
- opens input table in tabular view
- builds queries using numeric or string fields
- select from comparison operators for string fields
- select from numeric operators for computations
- pick constants and other modifiers from lists
- interactively builds nested query expressions
- automatically checks query syntax

Create Tilesets for Popular Geoviewers

- TNTmips creates/uses these tileset structures
 - Google Maps Tile Overlays
 - Microsoft Bing Maps Custom Tile Layers
 - Google Earth Super-Overlays
 - NASA World Wind Tile Layers
- mosaic directly into these tilesets
- export to tilesets
- merge tilesets
- render geometric layers to tilesets
- manage tilesets

Immediately View Any Tileset

- Every tileset process creates these HTML files
 - Google Maps Tile Overlays
 - Bing Maps Custom Tile Layers
 - Google Earth Super-Overlays
- click each HTML file to view tileset in your browser
- every tileset process also creates a TNT link
- select TNT link to add tileset to a TNT view
- all processes create or update all these links

Directly Use Tilesets in Any TNT View

- select and add as a single entity
- use same as any other reference layer
 - interpret in TNT Spatial Editor
 - add control points in georeferencing
 - 3D viewing in Stereo (e.g., *anaglyph*)
- control panel applies enhancements
 - (*transparency, shaded relief, filtering, ...*)
- select any TNT supported tileset structure
- select anyone's standard tileset
 - (e.g., *the OpenStreetMap tilesets are standard*)
- build and save a TNT link to anyone's standard tileset²
- select from local or network sources
- select TNT link to any Internet tileset

[² A Google or Microsoft license is required to use their proprietary map and image tilesets outside of a browser. Creating and using a TNT link to these tilesets is easy, but these link files are not provided by MicroImages.]

Add OpenStreetMap Tilesets to View

- use fast, publicly available Google/Bing street tilesets
- overlay street map on any view and location
 - (*Mapnik, Osmarender, or Cycle Map tilesets*)
- set street map transparency level
- set street map background to be transparent

Add 10-meter Global Landsat to View

- circa 2000 enhanced imagery
- uses MicroImages' fast Google/Bing tilesets
- add any area at any zoom as a layer
- georeference any medium-resolution image
- extract geometric features by editing

Add 1-meter USA Orthophotos to View

- 2009 or 2008 imagery via fast Google/Bing tilesets
- USDA/NRCS state coverage orthoimages
- add any area at any zoom as a layer
- georeference any high resolution imagery
- extract geometric features by editing
- view any area/scale in stereo

Auto Mosaic Tilesets

- assemble many images into a tileset for
 - Google Maps Tile Overlays
 - Google Earth Super-Overlays
 - Bing Maps Custom Tile Layers
 - NASA World Wind Tile Layers
 - MicroImages raster object tileset
- use Job Processing to process many in parallel
- input mixed CRSs and cell sizes
- select overlap method
- clip each input using a region with buffer
- limit output to a region with buffer
(*e.g., clip to an irregular province outline*)

Export Tilesets

- convert any size orthoimage to tileset
(*grayscale, composite, or multiband*)
 - for Google Maps for browser or iPhone
 - for TNT and Google Earth
 - for Microsoft's Bing Maps
 - for NASA's World Wind
- use Job Processing to process many in parallel

Merge Tilesets

- efficiently build a very large tileset for
 - Google Maps Tile Overlays
 - Google Earth's Super-Overlays
 - Bing Maps Custom Tile Layers
 - NASA World Wind Tile Layers
- maintain different resolutions of inputs
- clip each input tileset using a region with buffer
- limit output to a region with a buffer
(*e.g., use to extract a tileset from a tileset*)
- use Job Processing to process many in parallel

Render to Tilesets

- from CAD, vector, or shape objects
- control elements to draw
(*select by query, interaction, region, scale, ...*)
- draw into files using styles, symbols, ...
- specify tile zoom levels to draw

Tileset Manager

- add new zoom levels
- edit link to a tileset
- delete selected zoom level or tileset
- validate a tileset's contents/structure
- link to tilesets produced by other products
- delete or copy tileset

Reclassify Points in LIDAR LAS File

- select points by any TNT selection method
(by interactive tools, query, current class(es),...)
- select points from layer in 2D or profile view
- assign new class from class menu

Image Band Correlation

- rewritten using new 2D correlation plots
- view plot of any 2 bands
- view all possible 2 band plots at once
- highlight points in plot from image in display
- select point or group of points in plot
- highlight matching cells in display from plot
- directly displays correlation statistics
- select group of points in 2D view
- make a mask for points selected in plot
- automatically use bands from color composites

Job Processing

- auto mosaic provides job processing
- use in every tileset creation/management process
- new job management features
- schedule jobs to repeat in background
- run scripts repetitively to refresh results

Cascading Picklists

[currently under development]

Geocatalogs

- update catalogs automatically
- include geocoded photos (*JPEG with EXIF*)
- include GeoPDF and Adobe's georeferenced PDF
- include tilesets

SML

- create LAS file
- reclassify LAS records
- read any supported tileset structure
- create any supported tileset structure
- merge tileset structures
- render geometric geodata into tilesets