

Publish New Imagery in Google Maps

New, local image coverage of any size area anywhere in the world with any image detail can be transformed into a standard Google Maps Tile Overlay using the TNTmips Auto Mosaic process. Any visitor to your web site can then view this imagery Tile Overlay in Google Maps. The familiar Google Maps controls can be used to toggle the various layers (your Tile Overlay and native Google Maps

A **Tile Overlay** is a map or image tileset that can be displayed in Google Maps. Its structure exactly matches, tile-for-tile, the multiresolution tileset structure that Google uses for their global map and image layers in Google Maps.



- Local Tile Overlay alone (no Google layers)
- Local Tile Overlay with superimposed Google roads and labels
- Local Tile Overlay over Google maps layer
- Local Tile Overlay over Google satellite image layer
- Local Tile Overlay with superimposed Google roads and labels, over Google satellite image layer

New 30-centimeter orthoimage Tile Overlay for Tuusula and Kerava, Finland, added as a local layer to Google Maps. The default HTML produced by the TNTmips Mosaic process creates a Local menu that provides various combinations (mashups) of the local Tile Overlay with native Google Maps layers, as annotated above. The default mashup overlays the local image over Google's map layer, as shown in the illustration.

layers) on and off and view combinations (mashups) of local and Google maps layers to examine detailed local changes in use of land or existing facilities. You can add tools and capabilities to your Google Maps mashups, including address lookup, drawing polygons or lines, adding points, measuring, and other features as desired. In this example new (2006) high-resolution orthoimagery of the cities of Tuusula and Kerava, Finland, has been converted in TNTmips to a Tile Overlay that can be used to map *dramatic land use changes* compared to Google's older map and image coverage. Try viewing this Tile Overlay in Google Maps at www.microimages.com/geodata/tilesets/googleMaps/Tuusula.html.

(over)



Views of the same residential area in Google Maps older Satellite image layer (left) and the Local Tile Overlay created from 2006 orthoimagery of Tuusula and Kerava (right). A group of buildings under construction in the Google layer is completed in the Local Tile Overlay. Two additional clusters of new buildings in the Local layer replace areas of forest in the older Google Satellite image layer.

Viewing your Tile Overlay from your web site or from local media including DVDs is fast because the overlay has the exact tile structure specified by Google for use as overlays in Google Maps. You can publish a Tile Overlay on your web site by simply posting and linking to the sample HTML file produced with the Tile Overlay by the TNTmips Auto Mosaic process. You can add tools, capabilities, and mashup combinations using HTML and/or JavaScript.



Views of the Sinebrychoff brewery and warehouse complex in Kerava, Finland, in Google Maps older Satellite image layer (left) and the Local Tile Overlay created from 2006 orthoimagery (right). The newer local image shows a new building and parking lot at the southwest corner of the complex and expanded warehouse structures in the northern part.

The TNTmips Auto Mosaic process provides controls for setting the range of Google Maps zoom levels to include in your Tile Overlay. A set of tiles is created for each of these zoom levels. Tile layers can be built for any zoom level that Google defines and provides. Mosaic automatically determines and sets an appropriate default range of Google maps zoom levels from your collection of input images or maps. The maximum zoom level in the default range is automatically set to capture the full detail of your imagery or maps. If the resulting levels are of higher resolution than Google's, these additional higher-resolution tile levels are automatically used in Google Maps when you zoom in to higher detail. The default minimum zoom level is the level at which the image area in your overlay is no larger than that of a single 256 by 256-pixel tile. You can also change the minimum and maximum zoom levels manually to cover a single level or your desired range of zoom levels.

You can also convert your high-detail imagery to Google Earth tilesets using the TNTmips Auto Mosaic process (see the TechGuide entitled *Mosaic: Mosaic to Google Earth Super-Overlay*). You can view a Google Earth tileset prepared from the Tuusula-Kerava orthoimage at www.microimages.com/geodata/tilesets/googleEarth/Tuusula.kml.

Tuusula-Kerava, Finland 2006 Orthoimagery

Mosaic of over 600 images acquired in 2006 by Mr. Hannu Vallas, Lentokuva Vallas Oy, summer 2006.

Images acquired with a Nikon D1X digital camera from altitude of approximately 1500 meters.

Each Nikon image is 1960 by 3008 pixels with a ground resolution of about 25 cm.

TNTmips used by Mr. Pentti Ruokokoski, WSP Finland Oy, for georeferencing, mosaicking, and conversion to a Tile Overlay.

Tile Overlay has Google Maps zoom levels 10 to 20 for a total of 385,221 tiles and 7.4 GB.

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