

# Introduction to the GeoConvert tool

The GeoConvert tool allows you to get your own aerial images into Aerofly FS 2. GeoConvert so far supports aerial images in WGS84 coordinates and PNG, TIF and BMP image format.

**Important note:** This tool is not a simple plug and play solution, it requires some work on your side and you need some basic understanding on how earth coordinates work. It's also your responsibility to obtain aerial images, GeoConvert does not perform this step for you. We have added some tutorials however that show you some ways on obtaining aerial images.

## How Aerofly renders aerial images

Aerofly FS 2 uses images with a varying coverage to render the earth. For this Aerofly FS 2 uses a level technique with different resolutions per level to render aerial images. At the base there is level 0. Level 0 consists of a single square image that covers the whole earth. This image would be used if viewing earth from very far away. Next is level 1. Level 1 consists of 2x2 images covering the whole earth. Then for level 2 we have 4x4 textures and so on. Aerofly FS 2 currently supports the maximum level of 15 which gives you roughly a resolution of 50cm per pixel.

Its recommended that your aerial images are converted to level 9, 11, 12, 13 and 14 to give a good coverage. Level 14 corresponds to roughly 1 meter per pixel. Please do not go below level 9 unless you convert a really large area with your images as Aerofly already includes those levels.

## Installation

After you have downloaded the GeoConvert tool, unzip the ZIP file to any place you like, preferably to a harddisc with enough free storage.

Here is the folder structure of the tool

```
aerofly_fs_2_geoconvert
  input_aerial_images      // put all your aerial images you would like to
  use here
  scenery
  images                   // if GeoConvert was sucessfull you will find the
Aerofly FS 2 compatible aerial images here
  images_raw
  shader_dx11
  texture
  aerofly_fs_2_geoconvert.exe
```

GeoConvert cannot be started by its own, it must be called with a configuration file that tells GeoConvert what region it should create Aerofly FS 2 compatible aerial images. You can either open a console or the Windows Powershell or create a small batch file right next to the aerofly\_fs\_2\_geoconvert.exe executable. Here is an example

```
.\aerofly_fs_2_geoconvert.exe your_config_file.tmc
```

## General steps

1. All your input aerial images have to be in the folder 'input\_aerial\_images'. Currently, the image formats TIF, PNG and BMP are supported.
2. Each aerial image must have an accompanying configuration file with the extension AIC that tells GeoConvert how to source this image. As a convenience function, GeoConvert will automatically convert TFW and INF files to AIC files, but it's strongly recommended to check the AIC files after conversion. INF files are not standardized and TFW files do not support enough options for all cases. So please get used to the AIC file format, here is a sample

```
<[file][][]
  <[tm_aerial_image_definition][][]
    <[string8][image][your_aerial_image.bmp]>           // the image
  this configuration file refers to
    <[string8][mask][]>                                 // optional
  alpha mask / GeoConvert also
                                                         // supports Tiff
  images with alpha channel
    <[string8][coordinate_system][lonlat]>             // the
  coordinate system of the image, currently
                                                         // only lonlat
  is supported
    <[vector2_float64][top_left][-81.8330883979797 24.5659098029137]>
  // the coordinates of the top
                                                         // left corner
  of this image
    <[vector2_float64][steps_per_pixel][3.57627868652344e-06
-2.68220901489258e-06]> // this tells
                                                         // GeoConvert
  the pixel size in the x and y direction
    <[bool][flip_vertical][false]>                   // set to true
  if image is saved bottom to top
  >
  >
  >
```

3. aerofly\_fs\_2\_geoconvert.exe is a command line tool that expects another configuration file that tells where to generate aerial images and in what resolution. Here is a sample that generates aerial images for the Key West Florida region:

```
<[file][][]
  <[tmcolormap_regions][][]
    <[bool] [write_ttc_files][true]>
    <[string8][folder_destination_ttc][./scenery/images/]>
    <[bool] [always_overwrite][true]>
    <[list][region_list][
      <[tmcolormap_region][element][0]
        <[uint32] [level] [9]>
        <[vector2_float64] [lonlat_min] [-81.84 24.52]>
        <[vector2_float64] [lonlat_max] [-81.71 24.60]>
      >
    >
```

```
<[tmcolormap_region][element][0]
  <[uint32] [level] [11]>
  <[vector2_float64] [lonlat_min] [-81.84 24.52]>
  <[vector2_float64] [lonlat_max] [-81.71 24.60]>
>
<[tmcolormap_region][element][0]
  <[uint32] [level] [12]>
  <[vector2_float64] [lonlat_min] [-81.84 24.52]>
  <[vector2_float64] [lonlat_max] [-81.71 24.60]>
>
<[tmcolormap_region][element][0]
  <[uint32] [level] [13]>
  <[vector2_float64] [lonlat_min] [-81.84 24.52]>
  <[vector2_float64] [lonlat_max] [-81.71 24.60]>
>
<[tmcolormap_region][element][0]
  <[uint32] [level] [14]>
  <[vector2_float64] [lonlat_min] [-81.84 24.52]>
  <[vector2_float64] [lonlat_max] [-81.71 24.60]>
>
>
>
>
```

4. Once you have the input images along with their AIC files in the folder `input_aerial_images` and your TMC file you can start up GeoConvert either using the shell or a batch file as mentioned above.

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Last update: **2017/11/12 17:30**

