aerofly FS 2: Rodeo's Tutorial
Object Import into Sceneries

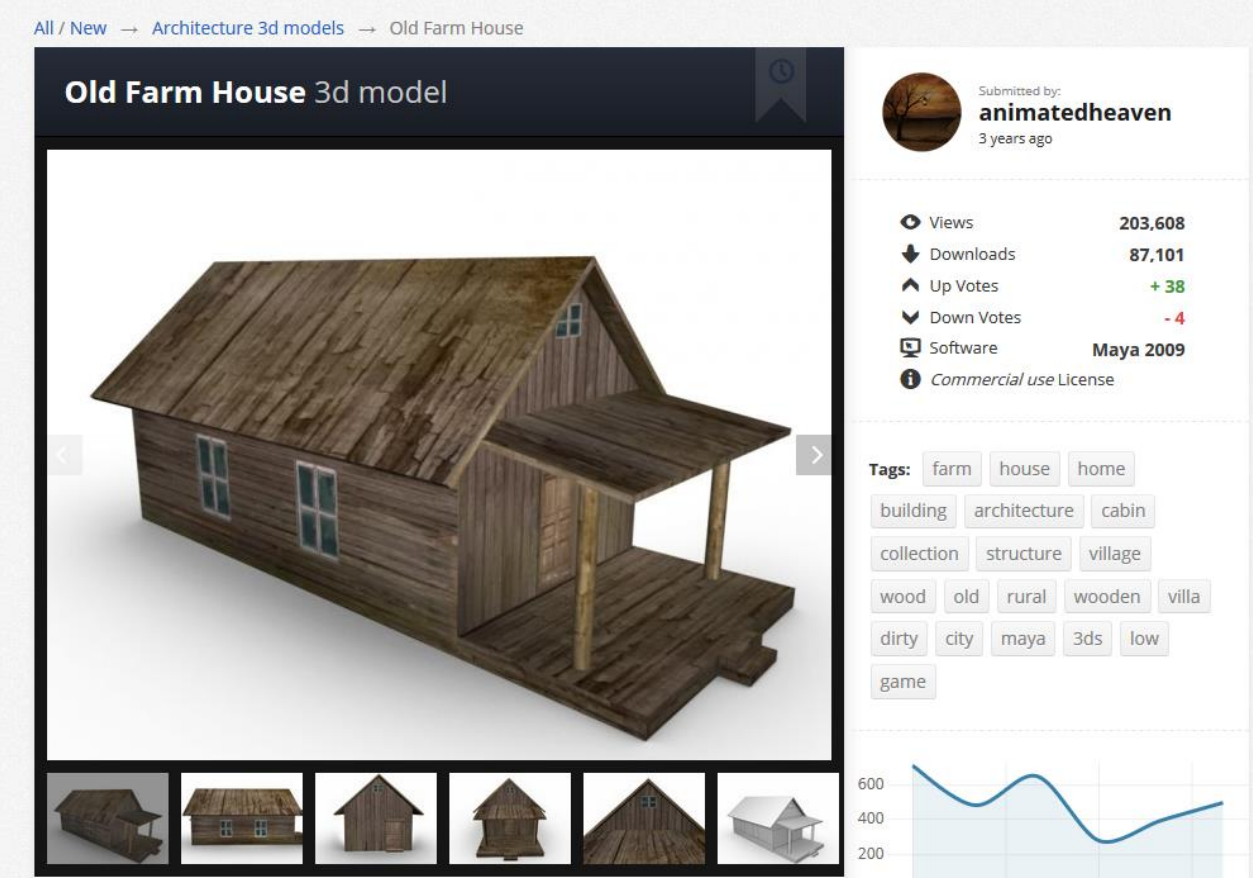
v1: 2017-03-10

You are interested to import objects into aerofly FS 2 sceneries? This the way to do it.
Of course you can use this tutorial for creating your own objects as well!

Prerequisits:

aerofly FS 2 simulator	Must be installed.
AC3D 8.0.50a	Needed for 3D work and IPACS export.
aerofly SDK package.	Download it from https://www.aerofly.com/aerofly_fs_2/sdk/

In this example we will use a small farm house. To give credits to the author please visit this site:
http://tf3dm.com/3d-model/old-farm-house-91130.html



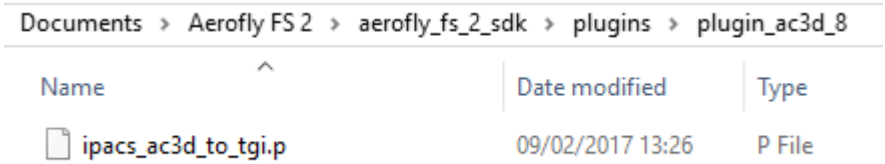
For your convenience the object is included in my tutorial package.

Additionally we need the OBJ importer plugin for AC3D. You find the download here:
http://www.inivis.com/forum/showpost.php?p=31428&postcount=3

Again, the plugin is included in my tutorial package.

Unzip obj_import.zip to any location.
Move the obj_import.p to the appropriate directory of AC3D, this is:
C:\Program Files (x86)\AC3D 8.0.50a\plugins

The SDK package comes with an IPACS export plugin for AC3D.



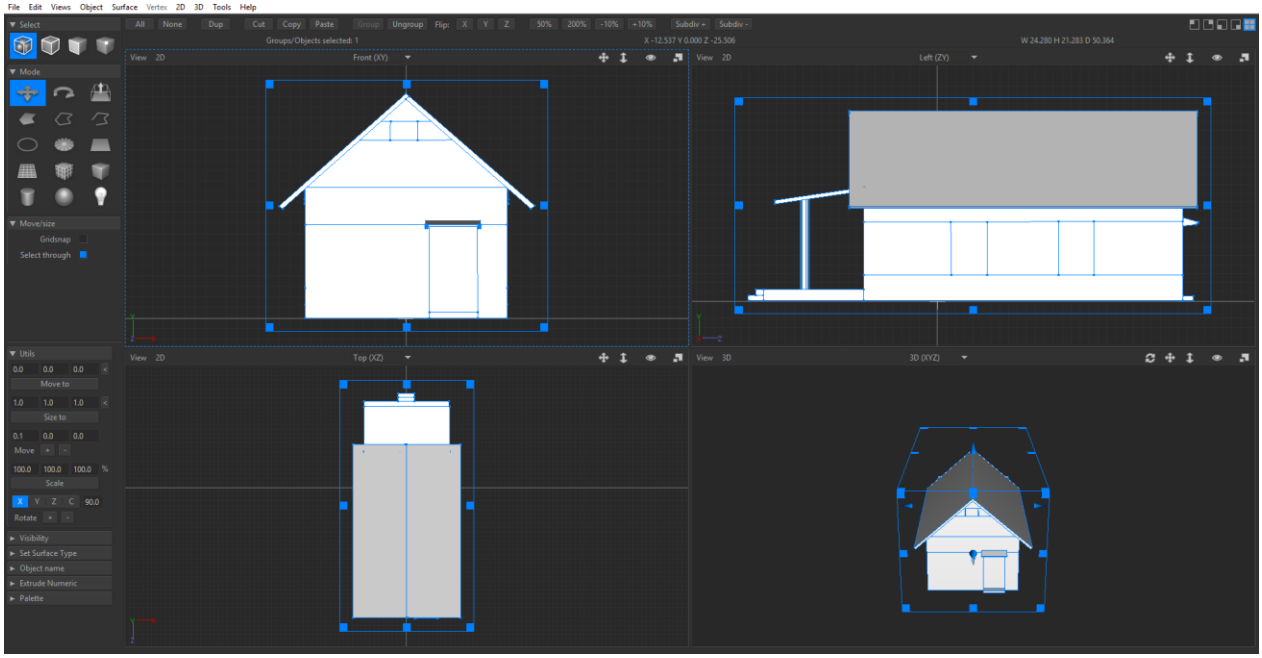
Copy the ipacs_ac3d_to_tgi.p to the appropriate directory of AC3D, this is:
C:\Program Files (x86)\AC3D 8.0.50a\plugins

Preparing the texture files:

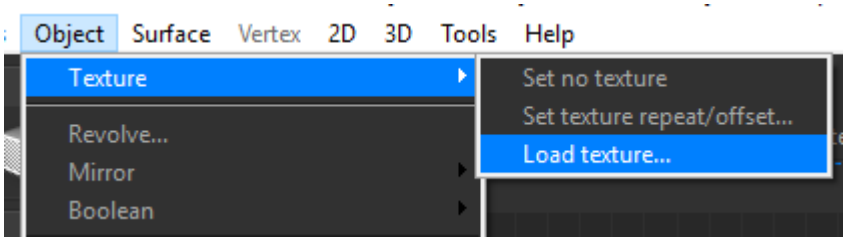
Unzip ***2l9281qs868w-Model.zip*** to any location. Now start any graphics program.
Open the file *Farmhouse Texture.jpg* and save it as BMP to the file name ***farmhouse_color.bmp***.
Open the file *Farmhouse Texture Bump.jpg* as well and save it to ***farmhouse_bump.bmp***.
Move both BMP files to your destination directory of the sdk scenery_workshop.
In my case this is …\Documents\Aerofly FS 2\aerofly_fs_2_sdk\scenery_workshop\farmhouse.

Use AC3D:

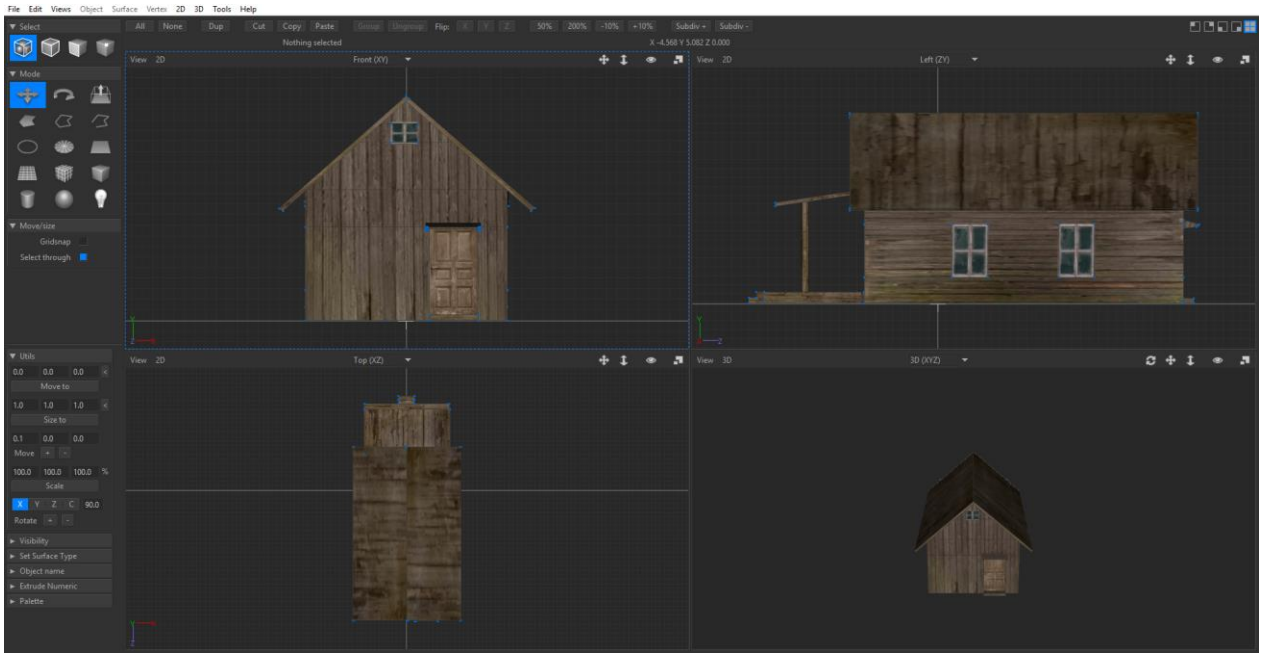
Start AC3D and select the function File –Import : Farmhouse OBJ.obj
You may get an error message: Can't open mtl file 'Farmhouse' for reading, default material will be used.
Just go on with import. Next save it: File – Save as – farmhouse.ac
to …\Documents\Aerofly FS 2\aerofly_fs_2_sdk\scenery_workshop\farmhouse.



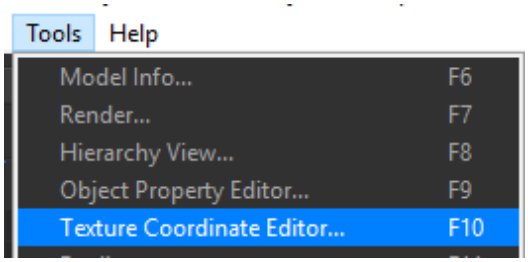
Reattach our BMP texture file to the 3D model.
Object – Texture – Load texture: Select the farmhouse_color.bmp in our destination directory …\Documents\Aerofly FS 2\aerofly_fs_2_sdk\scenery_workshop\farmhouse



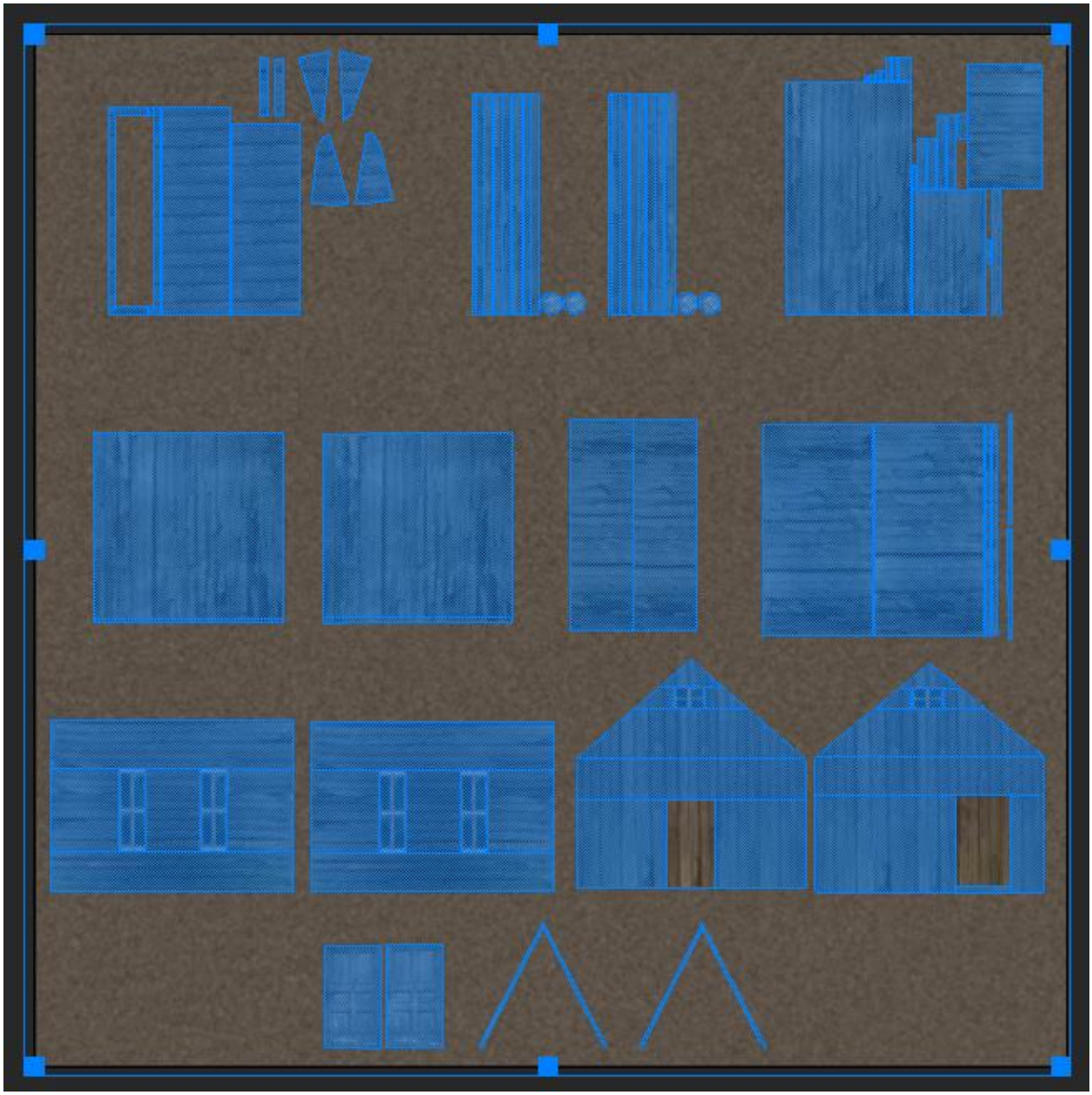
The result is immediately visible.



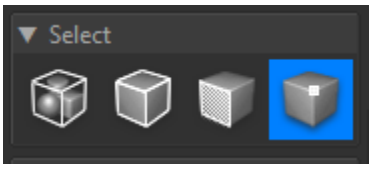
Control the texture fitting by selecting all, then Tools – Texture Coordinate Editor (or just F10).

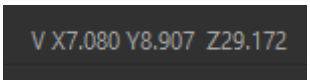


This image shows, that the texture position is still correct.

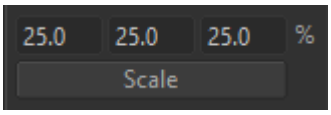


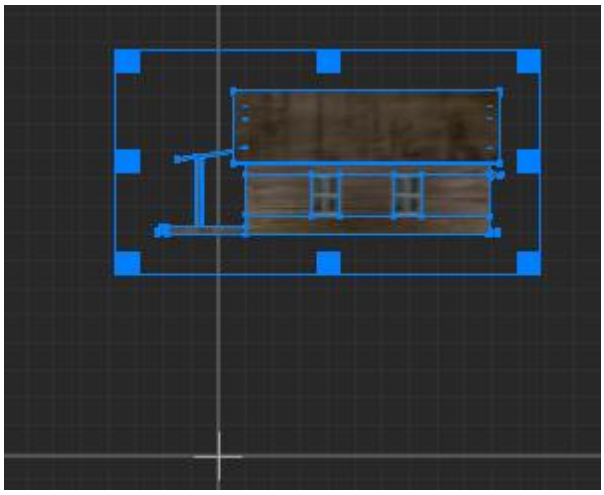
We have to calculate the size of the object.
Select Vertex , click to the vertex point above the door and note the coordinate values.



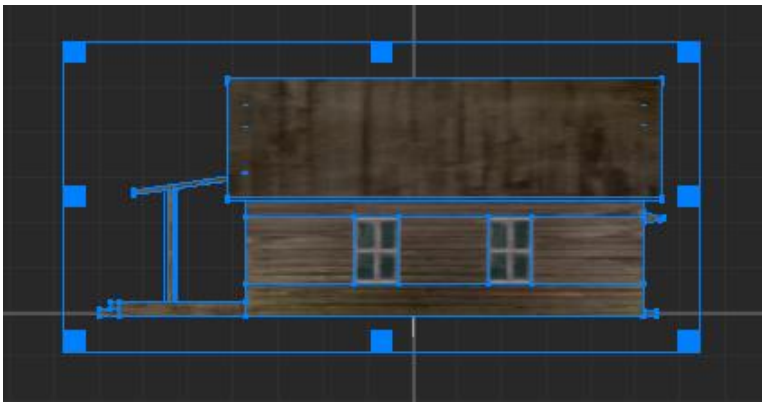


aerofly FS 2 uses metric measurements. This means, the height of the door is now 8.907 meters.
We will scale it to 25% for a realistic door height. Select the whole model and set scale to 25%.
(Note: 1 meter = 1.09361 yards; very similar).

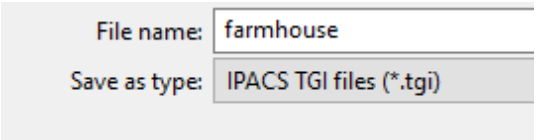




Next we shift the whole model back to the ground line.



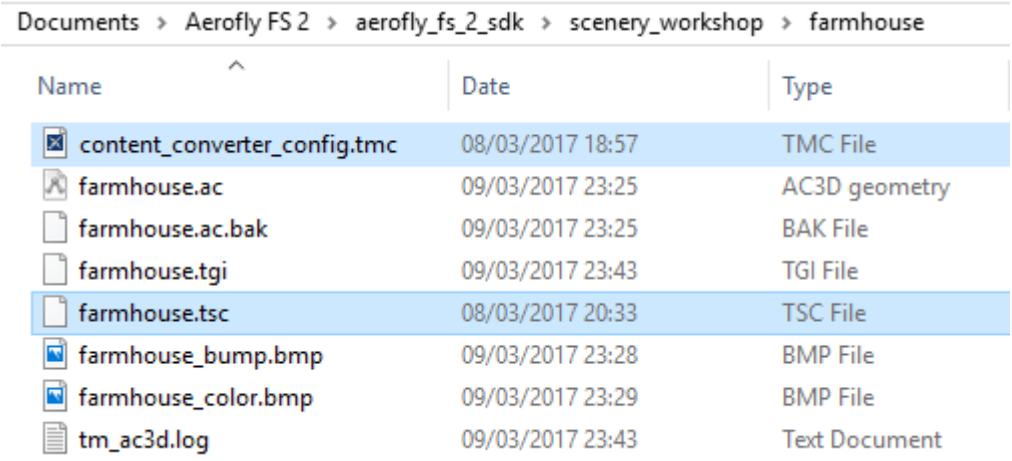
Save your file again, then use the export function. File – Export – Ipacs TGI files (.tgi)
Enter the name farmhouse and select again our destination directory
…\Documents\Aerofly FS 2\aerofly_fs_2_sdk\scenery_workshop\farmhouse



Important notes:

Please use for your file names only small characters without blanks.
  IPACS suggests this to avoid problems with crossplatform data transfer.
The BMP files have to be squares as in our example.
  If this is not the case, you have to create a square and perhaps remap the texture position.
The BMP file requires the addition _color.bmp for the texture file.

We need 2 more files: content_converter_config.tmc and a farmhouse.tsc file.
I have them already included in my package, copy them to the directory.
This is the final content of our directory.



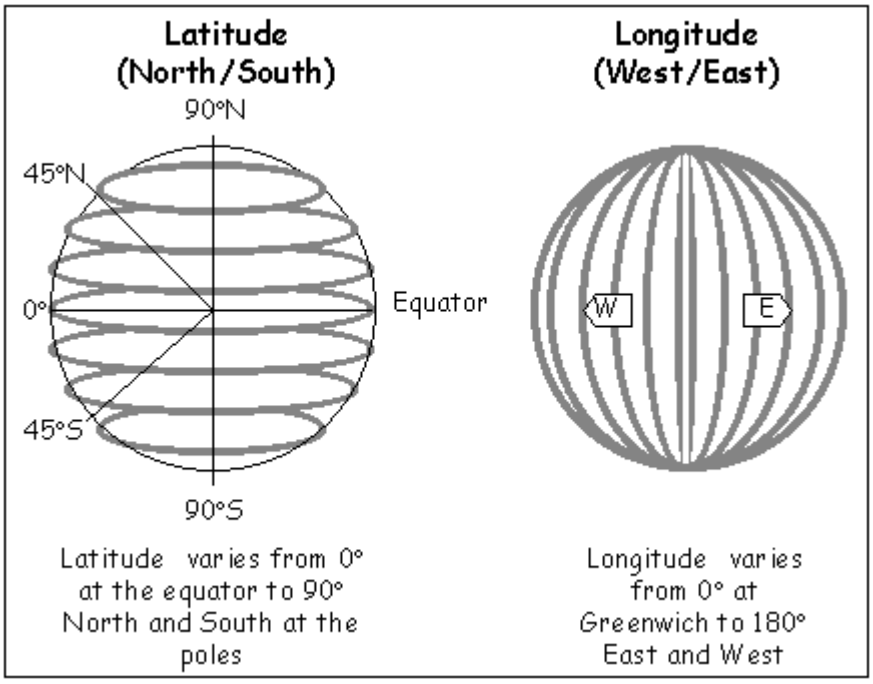
Before we run the final conversion, we have to calculate the position.

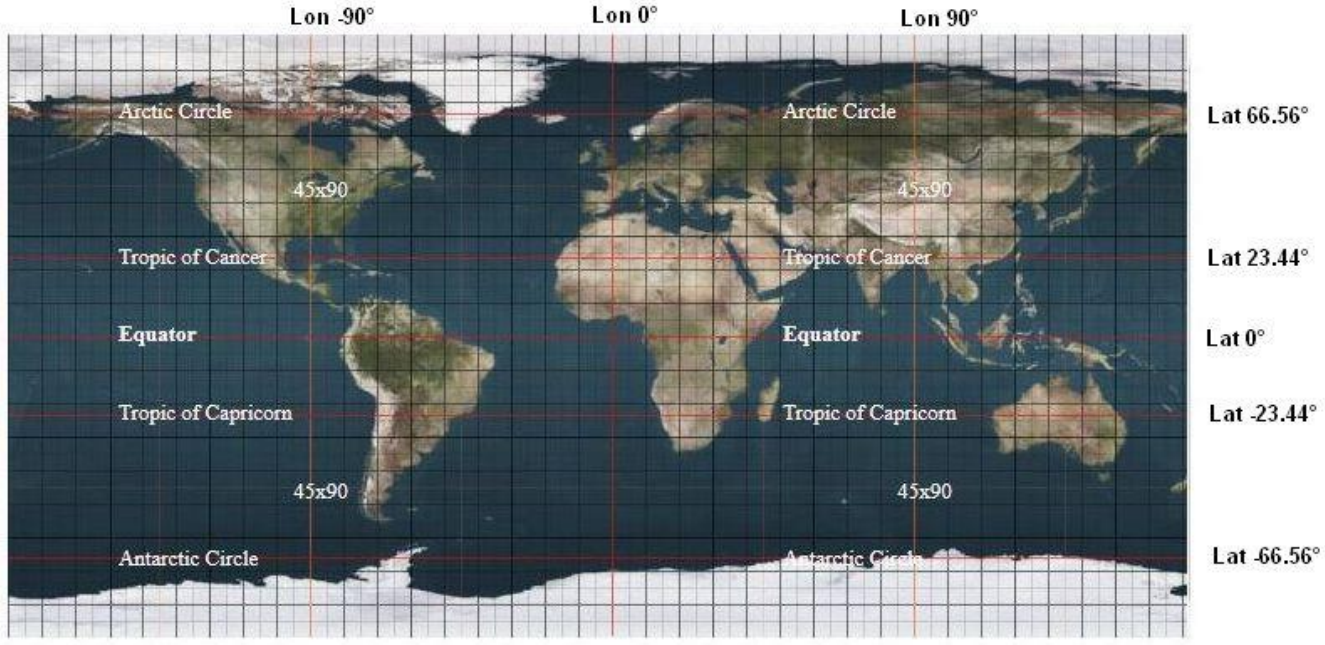
Small excursion to geographic coordinates

If you want to describe any position on earth in a unified system you may use geographic coordinates (as aerofly FS 2 does).

We need 360 degrees to do a full circle, so the earth simplified as a bowl consists of 360 longitude lines.
Longitude 0 is defined through Greenwich, negative to the west and positive to the east.
They meet again at the opposite side of the earth at -180/+180 degrees.

It is half of a circle going from north pole to south pole.
So lat +90 is the north pole, 0 is the equator line, -90 is the south pole.



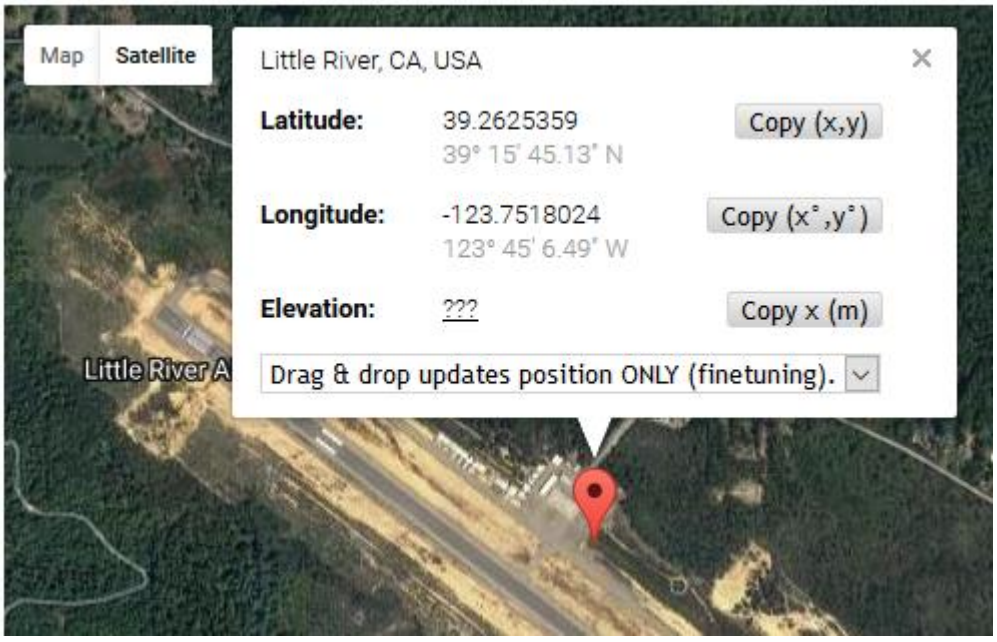


Both images from Wikipedia, modified by Rodeo.

That's it, but take the sequence into account: Both ways Lat/Lon as well as Lon/Lat are common.
aerofly FS 2 uses Lon/Lat.

If you want to place an object at a certain position you may use this page for calculations:
http://en.mygeoposition.com/
Search for Little River, California. We get the first approach to our target position.

It displays Google map worldwide, so we can move and zoom into our desired position. Switch to Satellite, then click with the mouse to the favoured point. This opens a window with the appropriate coordinates.



Open the file farmhouse.tsc with a text editor.

```
<[file][][]
<[tmsimulator_scenery_place][][]
////////////////////////////////////////////////////////////////////////////////
//
// general information
//
////////////////////////////////////////////////////////////////////////////////
<[string8]    [type]           [object]>
<[string8]    [sname]          [farmhouse]>        // shortname, not important for this objecttype
<[string8]    [lname]          [farmhouse]>        // longname, not important for this objecttype
<[tmvector2d][position]        [-123.751802 39.262536]>
<[float64]    [size]           [500]>                    // size estimation, not important f. this objecttype
<[bool]       [autoheight]     [true]>                   // important, to place object on ground
<[string8]    [coordinate_system][lonlat]>
////////////////////////////////////////////////////////////////////////////////
//
// objects
//
////////////////////////////////////////////////////////////////////////////////
<[tmsimulator_scenery_objecttmslist][objects][]
  <[tmsimulator_scenery_object][element][0]
    <[string8][type][object]>
    <[string8][geometry][farmhouse]>
    <[tmvector3d][position][-123.751802 39.262536 -0.2]> // lon lat, height -0.2 shifts slightly into ground
  >
>
>
>
```

We have to enter the object name on 3 positions.

We have to enter the coordinates on 2 positions.

Please compare the values with the coordinates from mygeoposition.

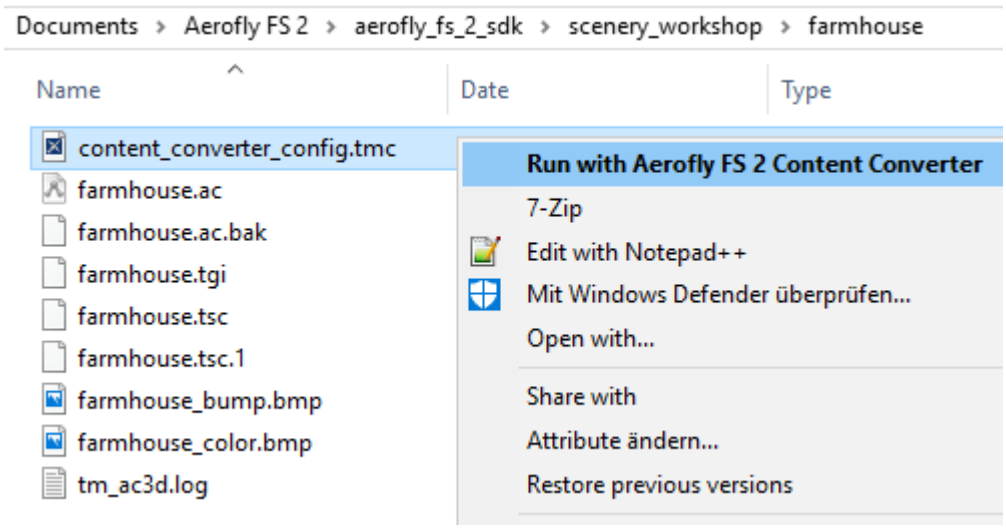
We have to change the order of the coordinates, and I restricted the input to 6 positions after decimal point.

Open the file content_converter_config.tmc tsc with a text editor.

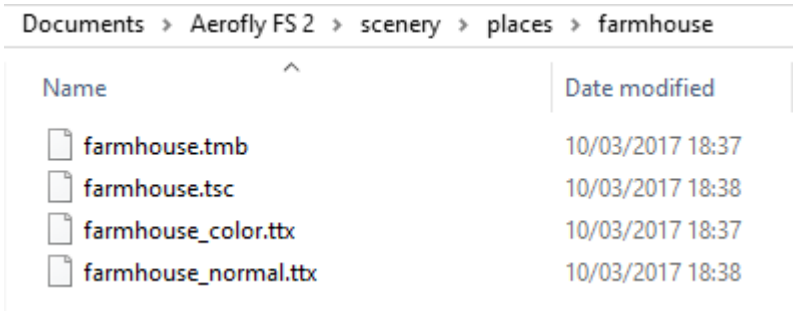
We have to enter our object only once.

```
<[file][][]
    <[tm_config][][]

        <[string8][base_output_folder][]>  // if empty, default "C:/Users/USERNAME/Documents/Aerofly FS 2/"
        <[string8][texture_base_type][ttx_dxt]>

        <[list_tm_config_folderpair][folder_pairs][]

            <[tm_config_folderpair][element][1]
                <[string8][input_folder][./]>
                <[string8][output_folder][scenery/places/farmhouse/]>
                <[string8][type][place]>
                <[uint32][recurse_level][0]>
                <[list_string8][file_types][tsc tgi jpg bmp tif png ]>
                <[list_tm_texture_settings][texture_settings][]
                    <[tm_config_folderpair][element][0]
                        <[list_string8][regex][.*]>
                        <[bool][compressed][true]>
                        <[bool][compress_file][true]>
                        <[bool][flip_vertical][false]>
                        <[bool][mipmaps][true]>
                        <[uint][max_size][2048]>
                        <[bool][make_square][true]>
                    >
                >
                <[tm_config_geometry_settings][geometry_settings][]
                    <[float32][collision_mesh_quality][0]>
                >
            >

        >
    >
>
```

Last step: Run the converter. Click file with right mouse button, select Aerofly FS 2 Content Converter

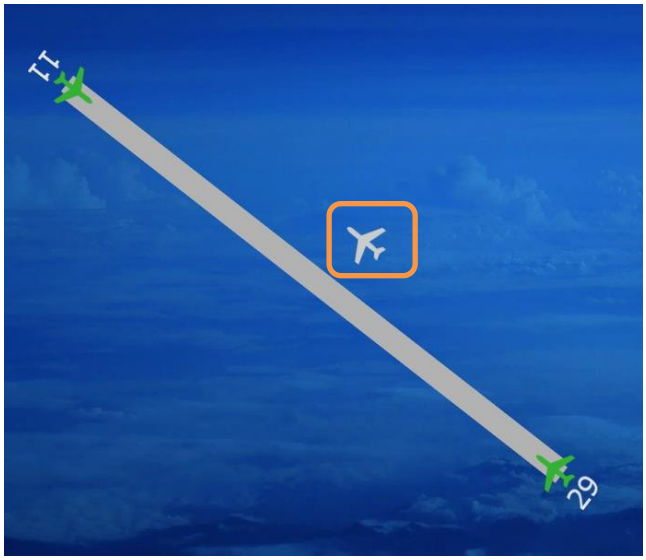


Do not interrupt the black shell window.
After the process is finished, the tm.log documents the result of the conversion.
Now there is a new subfolder farmhouse in the scenery places.



Start aerofly FS 2, open Location menu, move the map to the north of San Francisco.
Select the airfield Little River

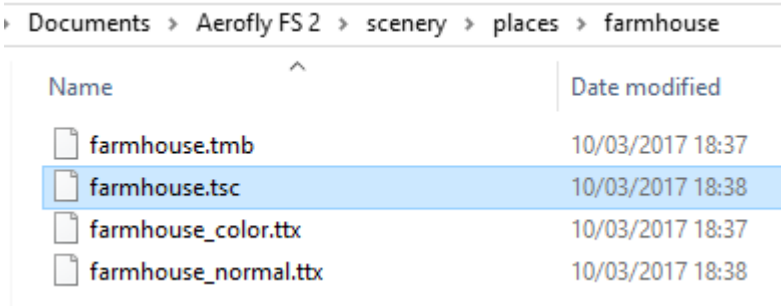
Select the park position in the middle of the runway.



The position fits very well to our selection in mygeoposition.
Be careful not to burn down the farmhouse with your afterburner.

Important notes:

Rotation of the object has yet to be done in the 3D model. IPACS is aware of this point.
You can display coordinates inaerofly FS 2 by Strg – F1.
It shows only 2 decimal places, IPACS may provide another tool for coordinate readout in future version.
You can fine tune the coordinates in the resulting file farmhouse.tsc without need for new conversion.



If you find something unclear or even wrong, please contact me
karlheinz.roeder@online.de

Hope you enjoy this tutorial and you can succeed with object importing.
Karl-Heinz (Rodeo)