

## **Photoreal Scenery - Basic Instructions for FS9/FSX/P3D (For FSET version 1.1 and above)**

FSET allows for the creation of photo scenery with proper water masking, nights and seasons textures, and autogen data for FS2004, FSX, P3D, and MSFS (please see separate readme for instructions for MSFS).

The results depend largely on the quality of 1.) the satellite images and 2.) the OpenStreetMap (OSM) data.

The below is how to create the scenery.

Note that the FSET manual is the file called UserDocu.pdf inside the Docs directory. But this is from the original FSET which did not have automatic water masking nor MSFS support. Scenproc also comes with its own manuals. Please consult these if any questions arise!

### **1. FS Earth Tiles**

1. In this zip file you will find FSET (stand-alone application), already set up and ready to go. Water masking, night textures, and the summer season are enabled by default. The parameters are set as I am using them at the moment, with Bing (aka Virtual Earth) as provider by default.

Note: Be aware that the actual server number might expire one day and will have to be updated. If you can't connect to the server anymore, you will have to look for the new server number in forums and change/add it in the .ini file.

2. Please download resample.exe (for FS2004 for FSX or P3D), as well as imagetool.exe for FS2004. These have been placed at this link for convenience: <http://www.ta4ksim.com/FSET/> Please download all of the files at that link, and place them inside the main FSET folder (the folder from which you started the FSET program). If you download the programs from that link, they will be named appropriately and this step is done. If you rename imagetool, resample for FS2004, or resample for FSX/P3D, or download the files from elsewhere, you will need to provide the correct names to these programs inside of FSEarthtiles.ini (please see the main FSET manual for how to do this).

\* Note: if you want to use the imagetool for FS2004, and resample for FSX/P3D from their respective SDK's, see addendum below.

3. Set the working folder (where temporary files used by FSET are placed) as well as the Add-on Scenery folder (where the Add-on Scenery folder that will be placed in the sim will be put) in the top of the FSET window.

4. Next, click on FSEarthTiles.exe. Maximize the window. Find the area you would like to create a scenery for. Click on "Draw" and draw the area on the map.

5. You can select which server to download from with the “Earth Service” dropdown and the download resolution using the “Download Resolution” dropdown. Choose which sim to create scenery from by using the “Scen. Compiler” dropdown.
6. Once done, click “Start”. The scenery will automatically be created.
7. The number of simultaneous downloads can be controlled with MaxDownloadThreads in FSEarthTiles.ini. Increase this number to increase the speed of downloads (up to a certain point. It depends on your own computer and download speeds, as well as the speed of the download server). The default value is 16 threads.
8. The number of simultaneous calls to resample.exe at a time is controlled with MaxResampleThreads in FSEarthTiles.ini. Increase this to increase the amount of resample.exe processes (the black windows with text which pop up) that can run at a single time. The default value is 8 at a time. Increase/decrease this value depending on how many CPU cores/threads your computer has. It will result in faster creation of scenery, but only up to a certain point. Increase it too much, and the length of time to create sceneries might paradoxically increase.
9. The number of image post processing and masks creation instances that can run at a time is controlled with MaxImageProcessingThreads. Increase this to increase the number of image processing + fsearthmasks instances that can run in parallel at a time. The default value is 8 at a time. Increase/decrease this value depending on how many CPU cores/threads as well as RAM your computer has. It will result in faster creation of scenery, but only up to a certain point. Increase it too much, and the length of time to create sceneries might paradoxically increase. Also, the more this value is increased, the more RAM will be required per scenery as image processing + masks creation can take up significant amounts of RAM.
10. By default, the program will create water masks (so that water bodies and coasts appear properly in the sim). It will also download data from OSM and call Scenproc on this data (if a path to Scenproc is set in your .ini and “create scenproc” is set to “yes”- more on this later). Night and summer textures will be created by default (for creation of other textures, please see the main FSET manual).
11. Now, wait until the process is finished. FSET will download the imagery at the resolution corresponding to whatever zoom level you choose. For Flight Simulator 2004, the screen will flash black for certain portions, and the computer might not be usable. This is completely normal. Please wait for the process to finish, and don’t interrupt it (it is a quirk of using the imagetool.exe program from the FS9 SDK). Same when the black CMD window appears. Don’t click on it or it will stop the process.
12. When finished, you will see at the left bottom the notification "Done".
13. The scenery you have created can be found in whichever directory you set the Add-on scenery folder to. It contains a scenery and a texture folder.

Note: Don't draw too big areas or you will have to wait an extremely long time for

all the data to download and be resampled for use inside the sim. You also might have to take into consideration the creation of autogen, which can take a long time with huge areas. Experiment with it.

Furthermore there is a limitation in FS2004's SDK which will cause the resample.exe program to crash if it is passed too much data to process (these limitations aren't found in FSX or P3D's resample.exe, so the below info is not needed for those sims). By default, night and summer textures will be created. If you want to make huge areas, there are two possibilities:

- 1) Disable creation of seasons and night masks (set the corresponding lines to No in FSEarthTiles.ini - please see the main FSET manual for this).
- 2) Use the auto reference button.
  - 1) Basically, click the "edit ref" button that is on top of the map inside FSET.



- 2) Resize the blue square in the map to the smallest size possible. Then, press "go back".



The size of this tile is the size that FSET will subdivide the whole area that is being created into. This will allow even large areas to be made for FS2004 successfully, because each individual sub area will be small enough so as to not crash FS2004's resample.exe.

## 2.) Automatic autogen creation using Scenproc

If “create scenproc” is set to “Yes” inside of FSET (it is by default), the program will attempt to automatically download data from OSM and run Scenproc on this data to create autopen automatically. For this to work, certain things must be in place:

1. Download ScenProc from here: <https://www.scenerydesign.org/development-releases/> Either the x86 or x64 version, depending on whether your operating system is 32 bit (x86) or 64 bit (x64).
14. Extract ScenProc to the location of your choice.
15. Make sure to run scenProc.exe at least once, and set the path to your sim. Do this by running scenProc.exe, accepting the message box which appears, and then selecting the sim you are using along with the path to the sim in the window which shows up.
16. Set the path to scenProc.exe in FSEarthTiles.ini, like this:  
scenproc\_loc=C:\path\to\ScenProc\scenProc.exe
17. OPTIONAL: You can create more scripts to guide ScenProc in creating autogen. They MUST be placed inside the ScenProc\_configs folder (inside the main FSET folder). You can select which script for ScenProc to utilize by changing the following line in FSEarthTiles.ini: FSX\_P3D\_scenproc\_script=default.spc, where default.spc is the name of the script you wish to use inside the ScenProc\_configs folder (or change FS9\_scenproc\_script=default.spc if creating scenery for FS2004).\*

\*IMPORTANT: MAKE SURE to include the @0@ and @1@ in the same locations in your custom ScenProc scripts as are found in the default provided ScenProc scripts. Namely, the first and last lines: ImportOGR|@0@|\*|building;landuse;natural;leisure| NOREPROJ and ExportAGN|FSX|@1@ Everything else can be changed, just not @0@ and @1@, as ScenProc needs these so FSET can tell it where to load the OSM data from and where to output the autogen files to, respectively.

## 3.) Manual autogen creation using Scenproc

If you have set “create scenproc” to “No” inside FSET and want to create autogen data manually, do the following:

1. In order to obtain the necessary data go first to: <https://www.openstreetmap.org>
18. Click on "Export", then "Manually select a different area", draw the desired area and then click on "Overpass API". After a while you will be asked to save a file called "map" on your hard drive. Do so. Once downloaded, rename the file to "map.osm" and put it into the root folder of Scenproc.
19. Next step: Create an "autogen" folder at C:\Autogen (anywhere is fine, but we will use C:\Autogen for this example).
20. Now, open Scenproc. Set the mode to FS2004, or FSX/P3D. Click on "Options" and make sure that Scenproc is pointing to your sim's root folder. If not or the path is not correct, point to your sim's root folder, click check, and save it.

21. Now, open a Scenproc script for processing the OSM data by clicking on "Open" and then select the script. As an example, use the one provided inside the Scenproc\_scripts folder inside the FSET root folder. The script opens. At this point you will probably get an error, since the path to find the map.osm file will be a different one on your computer. So, you have to edit the first line by typing in or pasting the correct path to the map.osm file (replace the @0@ if using one of the scripts provided in the FSET Scenproc\_scripts folder). In the script's last line, place the location where you'd like the autogen files placed. In this example, place, C:\Autogen (replace the @1@ if using one of the scripts provided in the FSET Scenproc\_scripts folder). Of course, you can change these paths to your liking by creating an autogen folder somewhere else and editing the script file accordingly.

22. After correcting the path, there should be no error message.

23. Click on "Run". Scenproc will start to process the osm file and create the autogen files in C:\Autogen. This can take a while depending on the amount of data. If it stalls, the amount of data is probably too large. If you get some warnings on an orange bar, don't worry. Let it finish the process.

24. When done, go to the C:\Autogen folder. Copy and paste all .agn files into the texture folder of the scenery you created with FSET beforehand.

25. Done.

The only thing you have to do now is to rename the Add-on Scenery folder as you wish and move it to where you like to store your add-on sceneries. Enable the scenery in your sim of choice. Restart, pick an airport within the created area, and enjoy!

### **To add more sources from which to download imagery:**

There are two ways:

1) Look in UserDocu.pdf (the main FSET manual) for how to add more providers to FSEarthtiles.ini.

2) Using Ortho4XP providers\*. Providers from Ortho4XP have been provided in this package. They are under the "Providers" folder. Inside, you will find .lay files. If you want to activate a provider, open the .lay file with a text editor such as Notepad. Then, add this line "in\_GUI=True".

a. You can also find more Ortho4XP providers online. Just drop them into a sub folder of the "Providers" folder.

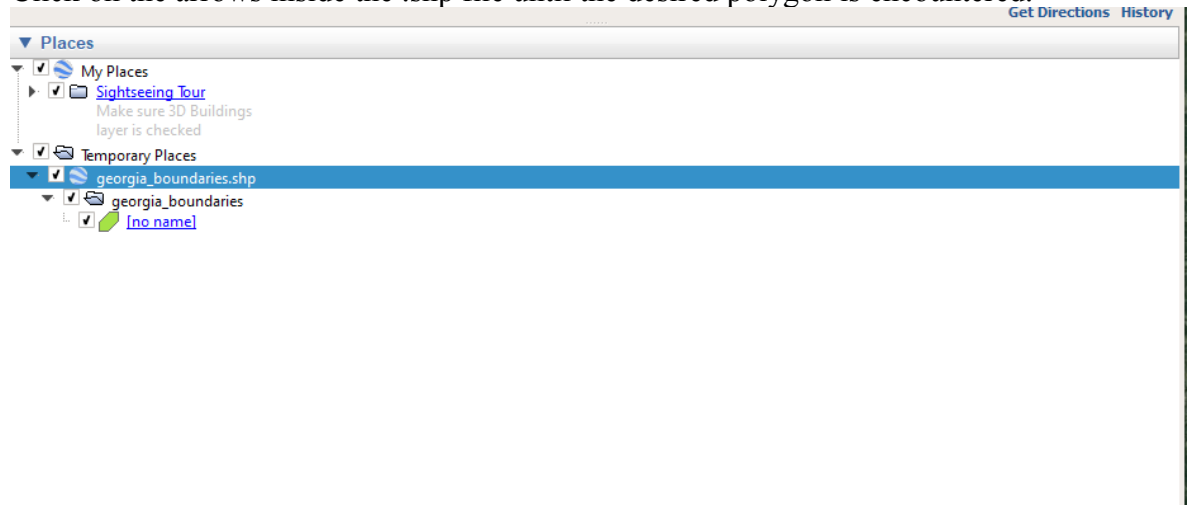
\* Note: not all Ortho4XP providers work in FSET. Support for them is an ongoing process and will be added as time permits.

**To create sceneries with custom/non-rectangular borders using Google Earth:**

1. Create a file called AreaKML.kml with google earth.
2. Inside this file, add a polygon describing the custom border desired.
3. The polygon must be named LandPool.
4. Save the file.
5. Place the AreaKML.kml file inside the FSET working folder.

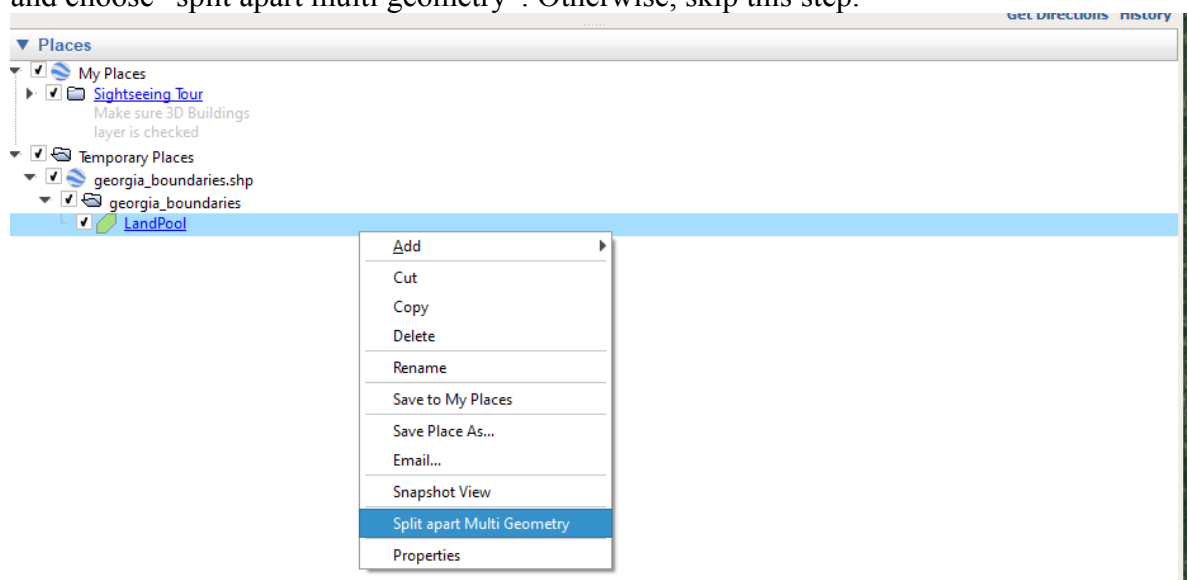
**To create sceneries with custom/non-rectangular borders from a shapefile (.shp):**

1. Open the .shp file inside Google Earth.
2. Click on the arrows inside the .shp file until the desired polygon is encountered.



Click on the polygon that is to become the custom border.

3. Rename it to LandPool.
4. If the polygon in question is a multigeometry polygon, right click on the polygon and choose “split apart multi geometry”. Otherwise, skip this step.



5. Click Save As, and export to a KML file called AreaKML.kml.
6. Place the AreaKML.kml file inside the FSET working folder.

**Youtube video showing how to create custom borders (note: Area polygon is not required as shown in the video) :** <https://www.youtube.com/watch?v=gKdhSAgWaZY>

**Addendum:**

You can obtain the P3D resample.exe by installing the P3D SDK provided by Lockheed Martin on their site where you download P3D. For FSX, resample.exe can be found by installing the FSX SDK found in the FSX Deluxe Disc 1 or in FSX Acceleration Pack (or FSX Gold which includes the Acceleration pack). The Steam edition of FSX does have an SDK but doesn't include the resample.exe executable, so you will have to install the regular SDK from any of these other sources (the FSX SDK has its own installer and can be installed separately without having to install the full game). For imagetool.exe and resample.exe for FS2004, please find the SDK online and download it.

Note – the AreaKML.kml method of creating water masks inside FSET is disabled by default since FSET now automatically creates water masked sceneries. To use the AreaKML method to draw your own water masks (more details in UserDocu.pdf), set UseAreaKMLFile to yes in FSEarthTiles.ini, and make sure an AreaKML.kml file is in your working folder (more details in UserDocu.pdf).

All good things,  
Harry, the  
Otter :) 8 Jan.  
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stackTom, 30  
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