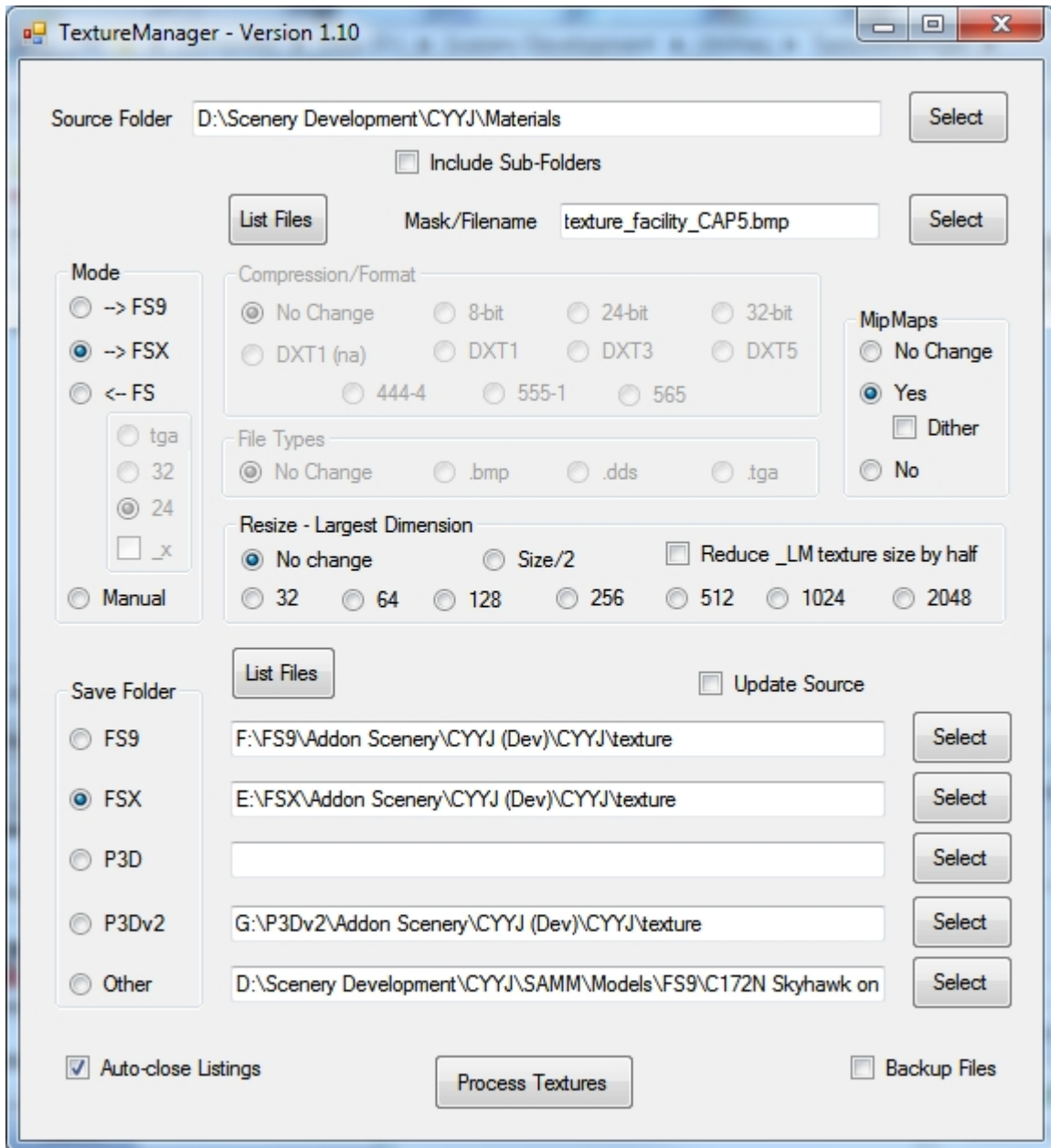# TEXTURE MANAGER

TextureManager is a utility for converting compressed and uncompressed image files between formats used for, or as a source for, Microsoft Flight Simulator or Prepar3D ("FlightSim") scenery textures. The conversion medium is Martin Wright's mwgfx.dll and mwdll.dll, which are the same .dlls required by DXTbmp and other of Martin's utilities. (If you have not previously installed these. dlls, you may obtain them at no charge from http://mwgfx.co.uk.) Thanks to Martin both for creating the .dlls and making available the development information to me.

TextureManager User Interface

I first released TextureManager in 2011. Since then, I have continued to update it for my own use – correcting deficiencies and adding minor enhancements. The current release, 1.10, is expected to be my final update.

TextureManager will convert a single file, all the files in a folder and its subfolders, and many steps in between. Standard Windows .bmp and .tga files may be processed for use with FlightSim. FlightSim files may be converted back to their source (though such conversions may result in a reduction in image quality). As well, among other things, you may resize textures and add or eliminate mipmaps.

TextureManager is a VB NET.Framework 3.5 application. (If NET.Framework 3.5 is not already installed on your computer, the "redistributable" can be downloaded from the Microsoft website at no charge.) The system registry is not affected. Nonetheless, Vista and Windows 7 users may need to run as administrator to use some features.

TextureManager has four modes of operation:
- → FS9 - create textures for FS9
- → FSX - create textures for FSX
- ← FS - recovers source files for FS textures (textures with alpha channel may be converted to 24-bit base image plus an 8-bit alpha file or, by checking tga or 32, remain in a single file)
- Manual - for changing file formats, adding/deleting mipmaps and/or resizing existing textures.

As well, TextureManager will generate a listing of the files in the selected source folder(s) or "save" folder showing image format and size and, by means of a leading asterisk ("*"), whether or not mipmaps are included in each file. Any previous listing will be closed automatically if Auto-close Listing is checked.

For convenience, three "save" folders are available. Notionally, one is for textures saved to FS9 texture folders, one for FSX texture folders and one for general-purpose use. In practice, however, it's simply a choice of one of three preset folder names.

With TextureManager, there is no need to create .tga or 32-bit .bmp files to generate textures with alpha. Nor is it necessary to handle corresponding night textures separately. TextureManager associates texture source files by name using the following scheme:
- base file (*.bmp*) - name as you wish
- night texture - base filename suffixed with "_LM"
- alpha image (where required) - base filename suffixed with "_alpha", " (alpha)" (note the leading space) or "_blend" or " (blend)" - case not important.

These files may be in any valid .bmp format (8-, 16-, 24- or 32-bits) or .tga format. If an "alpha" .bmp image is found, TextureManager will combine it with the base when creating textures for Flight Simulator. When using the --> FS9 or --> FSX modes, images are compressed appropriately (for FS9, .bmp at DXT1 for no alpha or single bit alpha or DXT-3; for FSX, .dds at DXT1 for no alpha or single bit alpha or DXT5 for multi-bit

alphas.. Similarly, if a properly-named night image exists, TextureManager will create a compressed _LM texture - using the alpha where one exists.

One special case exists. If the alpha image suffix is "_alpha1" or " (alpha1)", rather than just "alpha", then DXT1 compression will be output.

Textures used for ground illumination require special handling in the → FS9 mode. In this mode, textures with multi-bit alpha are normally compressed to DXT3. However, ground illumination at DXT3 isn't ideal. Since FS9 does not process DXT5 compression, 32-bit bmps must be used for "quality" ground illumination. (All the source format options are all still available, however.) You may handle these textures manually. Or, by giving them a name that starts with "illum_", TextureManager will automatically generate 32-bit bmps for FS9. (They will still be compressed to DXT5 for FSX.)

Should FSX textures need to differ from their FS9 counterparts other than in compression levels (e.g., to use different light levels for scenery night textures), the filenames of their base .bmp source files should be suffixed with "_x". TextureManager will continue to use the unsuffixed files for FS9. For FSX, the suffixed files will be used as source (where they exist) instead. (The suffix is not included in the .dds file name.) If you are preparing textures for only one FS version, there is no need for a suffix.

To use TextureManager, place TM.exe in the folder of your choice. Depending on which folder you use, you may have to run TM.exe as administrator.

On first running of TM.exe, the following will be created in the TM folder:
- a subfolder named *Work* which is TextureManager's working folder, and
- a text file named *TM.ini* that preserves settings from one session to the next.

Start TextureManager (click on TM.exe) and select/enter the name of the folder in which the files to be processed/converted reside. If you want TextureManager also to process files in any sub-folders, check Include Sub-Folders.

You may process only a subset of the files in the source folder(s) by specifying a "mask" including wildcard characters acceptable to Windows. If you want to process only a single file, enter its name in that field or select it. If you want all variants of a file to be processed, add "*.*" or, if there is one, select the *.psd* file.

To create a set of textures, select the mode (→ FS9 or → FSX as applicable - they do the same thing save for multi-bit alpha DXT textures being saved as DXT3 for FS9 and DXT5 for FSX.) Select mipmaps and resizing as necessary, specify the save folder to be used and click Process Textures. When resizing files, to save memory, you may specify that _LM files be resized to half the size of their daylight counterparts.

To re-create the source files from which compressed textures were created, select ←FS, designate the save folder and click Process Textures. If you want images with alpha to be saved as Targa or 32-bit files, select .tga or 32 as appropriate. Otherwise they will be saved as a 24-bit base image and an 8-bit alpha. By checking _x, you may optionally suffix .bmp files recreated from .dds format textures with "_x".

To just add or delete mipmaps to/from the textures in the source folder, select Manual mode, select/deselect Mipmaps (and Dither if desired), specify any resizing, designate the save folder or check Update Source, and click Process Texture. Note, when Update Source is checked, the original files that were processed are deleted.

To change file format, select Manual, the desired new format and file type and click Process Textures.

When processing textures, you may override the system default operation by providing a file named *Format.txt* in the source folder. That file should have a singe-line entry for each image/texture file for which you want to specify custom processing in the form:

file name (without file extension), *file compression mnemonic*

The file compression mnemonic may be any of the following:

- DXT1 DXT3 or DXT5,
- 444-4,
- 555-1,
- 565, or
- 8, 24 or 32

or blank if you want a file to be omitted from processing (but do include the comma). Some mnemonics are not applicable to every process. Again, case doesn't matter. This custom format will always apply unless only a single file is selected for processing in the manual mode.

One thing to remember when dealing with compressed textures. Once a texture is compressed, the original image quality is lost. What perhaps "started life" as a 24-bit image is reduced to 16-bit quality after the first compression. Even though it may be decompressed back to 24-bits, it still only retains its 16-bit quality. Further compression will reduce the quality even further. While this degradation may not be noticeable until after the third or fourth compression, it is nonetheless a fact.

So if it is necessary to adjust compressed textures, even for just adding or deleting mipmaps, you are advised to get back as close to the original image as possible.

PLEASE NOTE

When you process a large number of files, or even a few long, narrow files (like those used as fresnel ramps), TextureMaker my "crash", reporting an out-of-memory error. Unfortunately, this error occurs in the third party image conversion routines used in TextureMaker and cannot be avoided by TextureMaker

Happy converting,
Don Grovestine
don@http://stuff4fs.com
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End User License Agreement (EULA)

You are granted a free, non-exclusive right solely to install and use TextureManager on your computer system(s) for your personal enjoyment to create and convert image files intended for use with Microsoft Flight Simulator® and Prepar3D and, except as set out below, to distribute those files as may be permitted by their author.

You may not:

- upload TextureManager, whether or not modified, in whole or in part, to any file distribution system,
- reverse engineer, disassemble or decompile any part of TextureManager,
- incorporate TextureManager in whole or in part into any commercial product or facility, "shareware" or "freeware", or any other product or facility for which there is a charge of any kind, or
- incorporate image files created or converted with TextureManager into any commercial product or facility, "shareware" or any other product or facility for which there is a charge of any kind,

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