MILSGen - Guide

www.legoism.info

General

MILSGen converts images that represent elevation maps to a set of connected MILS modules 32x32 in size. They are exported as LDraw files that can be edited using e.g. MLCad (http://mlcad.lm-software.com/), viewed with LDView (http://ldview.sourceforge.net/), etc.

Installation and uninstallation

You need a standard Windows PC - any remotely modern version will do. Unpack the ZIP to a folder of your choice, along with all subfolders and files. Uninstallation is just as simple - just delete the folder along with all its files. If your program does not work at all, you might be missing some necessary packages try downloading the VC++ package (freely downloadable from http://www.microsoft.com/en-us/download/details.aspx?id=5555).

Input file

Before starting, copy the input image to the aforementioned MILSGen folder. It should be in PNG, BMP or JPEG format, 24-bit colour (i.e. not paletted), and at least 32x32 pixels in size. If the dimensions are not multiples of 32, the program will automatically crop the available area to the top left corner.

Black colour of a pixel always represents the altitude zero (the bottom plater of the MILS module). The brighter a pixel, the higher its elevation in the exit file: you will be able to choose the scale later, that is, which brightness corresponds to which physical LEGO elevation.

Keep in mind that each pixel corresponds to one stud in the output! That is, something that may seem as a moderately large image on the screen (say, 1024x768 pixels) will result in 768 modules, over 8x6 meters in size. Rescale your input images using any of the many freeware image editing and viewing programs (www.faststone.org, for example).

Input parameters

Once your input image is copied to the aforementioned folder, start the milsgen.exe executable file. It will ask a few questions regarding the input.

(To just get a general idea about the program, you can start run everything with defaults (just hit Enter all the way) to see the result – there is an example image with default name already provided in the ZIP package.)

1) Enter the input terrain image

Simply enter the full name (with extension) of the input image you prefer to use. It should comply to the rules mentioned earlier. If you just hit Enter, the default name milsgen.png will be used, which already exists in the original ZIP as an example.

2) Enter the highest altitude of the modules in tiles, corresponding to the highest point of the image

Upon start, the program will check out the highest point given in the input map (that is, the brightest pixel in the area). Here you can specify how high do you prefer that point to be in the resulting MILS module, using plates (1/3 of a brick) as units. Black colour represents zero altitude, and all other altitudes will be linearly scaled in between. By default (just hitting Enter), this height will be 24, or 8 bricks.

3) Include substructure

You can choose whether to include the MILS substructure (baseplate, corner bricks and Technic brick module connectors) in the resulting files. It is by default (just hitting Enter) enabled. Type N to disable it, which will result in LDR files being written without this substructure, just the terrain.

4) Add edge identifiers

If you have enabled substructure, you can choose to add edge identifiers which are enabled by default. They will add a simple set of 1x1 bricks in the substructure at their edges that connect to any other modules (i.e. are not at the complete edges of the landscape). These will precisely match their one unique code at the corresponding connecting side of their neighbour. That way, even very shuffled modules can be easily assembled.

Operation

After entering these parameters, and no errors are encountered, MILSGen will start processing, writing lots of output along the way, which you may mostly ignore. Take into account that this process involves lots of operations and optimizations, that require some time (easily a couple of minutes of calculations for a set of a few dozen tiles).

All terrain will be output in green colour - the colours of the input pixels have no significance, but only their brightness. The modules will be hollow from inside to conserve parts, time and weight, but will have no reinforcements whatsoever: their construction is down to the builder if necessary. (I.e. some plates may just "float" in the air.) The plates that the program attempts to use to solve the terrain are 1x1, 2x1, 4x1, 6x1, 8x1, 2x2, 4x2, 6x2, 8x2, 4x4, 6x4, 8x4, 6x6 and 16x6.

Each MILS module will be exported to its own LDR file, named according to its coordinates (from top left corner) in the system. As in chess, the columns are indicated through letters, and rows through numbers. Therefore, A1 is the top left corner; C2 is the third column, second row. Eighth row, fifth column is E8, etc. If these files exist already, they will be overwritten automatically. Of course, they all have the .LDR extension. The program will close itself when finished - you can monitor its progress also by viewing the LDR files as they appear in the MILSGen folder (each module is written on the fly).

Notes