

GEOLOCK User Manual

Your use of GeoLock may infringe the rights of others. Please seek permission, where necessary, before extracting or copying objects developed by others.

When compiling a scenery .bgl file for Microsoft Flight Simulator or Prepar3D, the compiler examines each entry that positions an object and places some code in the file header that defines the geographic coverage of the placement items. In this way, Flightsim needs only examine the file header to determine whether there is anything in the file relevant to the current position of the user aircraft. This, in turn, reduces processing overhead because unneeded (relative to the user aircraft position) objects and positioning data is not loaded. The file is considered *geo-locked* to its coverage area

But, there's also a "downside" to this scheme. If the file contains any objects that might be useful outside the area to which it is geolocked, those objects are not accessible. Further, library object .bgl's (which contain only object model data but no positioning data) are not geolocked by the compiler. Hence, objects in such files are always loaded, whether or not they are needed. To address this latter situation, Microsoft geo-locked some of the stock libraries (e.g., Scenery\Orlando.bgl) when developing Flight Simulator. But, this capability is not supported by the released compilers.

Geolock to the rescue! GeoLock is a utility which allows you to:

- unlock geo-locked .bgl files, and
- create geo-locked or unlocked subsets of models contained in scenery and object library .bgl files irrespective of whether the source bgl was geo-locked or not.

In addition, GeoLock can display a 3D image of each model in a file. So, it is also useful in examining the models contained in a scenery file or object library.

Other file types besides scenery and object libraries may be geo-locked. But, there seems little purposed in unlocking them since doing so would only have adverse consequences on the performance of the simulator.

Installing, Executing and Uninstalling GEOLOCK

Installation - To install GeoLock, simply copy all the files from the downloaded archive into a folder of your choice which will be referred to as your GeoLock folder.

GeoLock does not affect the system registry.

GeoLock is a Microsoft NET.Framework 3.5 application. If NET.Framework 3.5 or later is not already installed on your computer, the "redistributable" can be downloaded from the Microsoft website at no charge.

Execution - To execute GeoLock, double-click on *GeoLock.exe* or drag a scenery file or object library onto *GeoLock.exe*.

Users of Vista and later versions of Windows usually must have and, depending on circumstances, others may require, administrator privileges when running GeoLock. If you need

but do not have administrator privileges, you may not be able to access/write the necessary files. To run GeoLock with administrator privileges, right-click *GeoLock.exe*, select "Run As ..." and then "administrator". Such issues can sometimes be avoided by installing GeoLock on other than the C: drive.

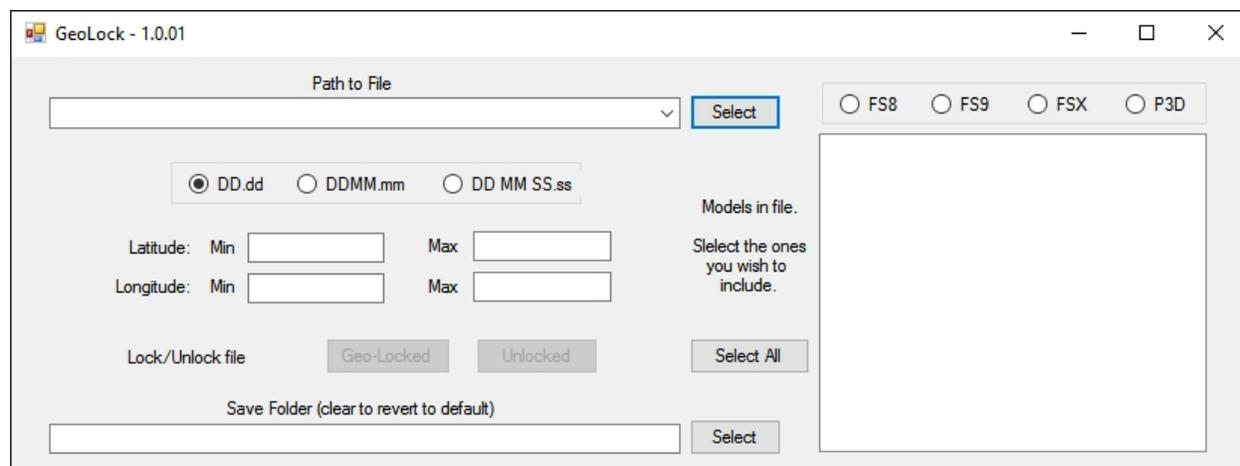
Windows 7 users may wish to run GeoLock in the XP compatibility mode. Otherwise, Windows issues a "this program may not have installed correctly" message when GeoLock is shut-down. Despite the error message, there is no known problem - other than the annoyance factor.

Initialization - When you shut-down GeoLock for the first time, an additional file, *GeoLock.ini*, will be created and saved to the GeoLock folder. GeoLock "remembers" key settings from one session to the next. Those settings are in *GeoLock.ini*. The next time GeoLock is run, the settings are preselected based on this file.

Un-Installation - To uninstall GeoLock, just delete the GeoLock folder and all its contents

GeoLock's Main Panel

Shown below is GeoLock's Main Panel.



GeoLock's Main Panel

The first step in any operation with GeoLock is to load the source .bgl file. Select the file of interest using the Select button and/or the associated combobox. (The paths to the .bgl files accessed previously in the session are saved in the combobox for convenience.) Of course, if you started GeoLock by dragging a scenery .bgl onto it, this step has already been performed for you.

Immediately upon loading a new file, GeoLock decompiles the file and places all the included models in its MDLs folder. This is intended to be an internal working folder. However, if the .mdl files alone are of use to you, that's where they will be found. It's up to you to determine and obtain the associated textures in order to make use the .mdl files directly.

If the .bgl file is geo-locked, its coverage area will be shown in the Latitude and Longitude text boxes in the selected format. For other than FS8 files, if the .bgl contains any model definitions,

those models will be listed in the list box on the right hand side of the dialog and the version of the models is shown in the radio-buttons above the list box. Since FS9 models don't contain any name information, the models list box will show the assigned Guid. For FSX and P3D models, the names of the models will be shown.

To assist you in selecting the desired models, if you hover the mouse over any item in the list box for more than 1 second, a 3D image of the model will be displayed. As you move the mouse to other lines in the list box, the corresponding models are shown.

Files are saved to the folder shown in Save Folder text box. If you do not specify that folder, files will be saved to the same folder as the source file. Once you specify a save folder, this text box is initialized to that value at each startup. To revert to the default folder, simply clear the textbox.

Locking/Unlocking Files

If a file is geo-locked (i.e., the Latitude and Longitude textboxes are all non-blank), it may be unlocked simply by "pressing" the Unlock button – **provided no models are selected/highlighted**. The unlocked file will be saved in the same folder as the original with the suffix "_Unlocked" added to the original name.

If the file is not geo-locked (i.e., the Latitude and Longitude textboxes are all blank), it may be locked by specifying the bounding latitudes and longitudes and "pressing" the Geo-Lock button. The locked file will be saved to the folder shown in Save Folder text box using the file name of the original file suffixed "_Locked".

As with all my other applications, buttons and other controls are only enabled when they can be used. If a control is not enabled when you suspect it should be, the most likely cause is that you have not entered all the prerequisite information or met other necessary conditions.

If you lock a file and later reload it, the bounding latitudes and longitudes may be somewhat different than you originally specified – resulting in a larger geo-lock area. FlightSim uses QMIDs to specify geo-lock coverage and these can be rather coarse. (For more information on QMIDs, please refer to the "QMID and LOD Values" section of the Terrain and Scenery document in the Terrain SDK.)

Note: Only models are included in locked files generated by GeoLock. All positioning data is discarded. Why? Because if you change the lock boundaries, some or all of the positioning data may no longer be relevant. You must supply new positioning data for the models in any locked files you generate.

Making Locked or Unlocked Subsets of Models

All the models available in a scenery or object library .bgl file are shown in the Models listbox on the Main Panel. You may create a locked or unlocked subset of those models by first selecting the specific models to be included in the subset. If you wish the subset to be geo-locked, specify the bounding latitudes and longitudes of the area in which those models are to be active. Then, "press" Geo-lock or Unlock as applicable. As above, the subset will be saved in a file named as the original and suffixed with "_Locked" or "_Unlocked" as appropriate in the same folder as the original.

Provided the loaded file is located in a subfolder named *scenery* with a companion *texture* folder, the texture files required for the models in the subset are saved to the folder *Texture* in the GeoLock folder. Any required textures not found will be listed in the confirmation message.

If the save folder is named *Scenery* and there is a companion folder *texture*, then the textures initially saved to *Geolock\texture*, if any, are copied to the companion texture folder for you.

If you wish to make more than one such subset, be sure to rename the previous subset first. Otherwise, it will be overwritten.

Sharing Files that Rely on Unlocked Data

If, for example, you want to use an object from Sydney.bgl at an airport you created in North America or Europe on your own system, you could either extract that model from Sydney.bgl with GeoLock and save it with your new airport, or simply unlock Sydney.bgl. (Doing the latter would expose all the objects in Sydney.bgl worldwide.) However, if you chose to do the latter (i.e., unlock Sydney.bgl) and wished to share your airport, the object would not appear at your airport on someone else's system unless they too have unlocked Sydney.bgl.

So, if you plan to share your creations that rely on data from a file locked to a different area, you should create a separate file containing only the models of interest from the other locked file and include the new file with your creation.

Respect for the Rights of Others

Your use of GeoLock may infringe the rights of others should you extract models from files created by them (whether or not you intend to share the extracted models) or even simply by unlocking such files.

It all depends on the terms of the end user license agreement (EULA) under which those files were obtained. Some authors make their files available as freeware without conditions, others allow sharing so long as there is no charge. Still others make their files available under very restrictive terms. In most countries, it's an offense to violate the terms of EULAs.

Should you wish to use objects created by others outside the terms of the applicable EULA, ask for permission first – and give credit when you receive it. Most non-commercial developers of scenery for Flight Simulator or Prepare 3D are happy to have their work products used elsewhere, but they do appreciate being asked first.

Acknowledgements

Thanks in particular to:

- Arno Gerretsen for allowing me to use his ModelConverterX .dlls in GeoLock.
- Patrick Germain for his fsDeveloper Wiki article explaining the .bgl header format and offering some code for QMID manipulation on which portions of GeoLock are based.

Support

For the time being at least, please report any difficulties and make comments in my Terrain Sculptor's support forum at <http://www.fsdeveloper.com/forum/forums/terrain-sculptor.146>.

I also have a support website at <http://stuff4fs.com> for all my airports and development utilities. (Navigate to the User Applications / GeoLock page.) Among other things, the site lists all known problems with the latest release. The most recent release of GeoLock is available from that site as are occasional development releases of new features.

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End User License Agreement (EULA)

As used in this end user license agreement, the term GeoLock (whether or not suffixed by a version identifier) shall be construed as encompassing the full contents of the downloadable archive (.zip) file originally created and posted for distribution on “download sites” by the author, including without limitation: the executable GeoLock.exe, the associated user manuals and certain files proprietary to third parties including but not limited to the files bglcomp.exe, bglcomp.xsd and all the files of type “.dll”

You are granted a free, non-exclusive right solely to install and use GeoLock on your computer system(s) for your personal enjoyment and, subject to the rights of others, to unlock geo-locked files or created locked or unlocked subsets of models intended for use with Microsoft Flight Simulator® for use and distribution as may be permitted by their original authors.

You may not:

- upload GeoLock, whether or not modified, in whole or in part, to any file distribution system,
- reverse engineer, disassemble or decompile any part of GeoLock,
- incorporate GeoLock 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 geo-locked or unlocked files created with GeoLock, whether or not edited or further compiled, into any commercial product or facility, “shareware” or any other product or facility for which there is a charge of any kind notwithstanding any permission by the author of the original source file,

without the express written permission of the author.

Your use of GeoLock is entirely at your own risk. The author accepts no liability whatsoever for any damage arising from its use no matter how caused.

By downloading and installing this software, you are deemed to have agreed to the foregoing.

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