

## Exporting a geoid model to Trimble Survey Controller data collectors

This Technical Tip provides instructions for exporting a geoid model or a portion thereof to a data collector (such as Trimble TSC1, TSCe, ACU, or TSC2) running Trimble Survey Controller software.

This procedure requires some basic Windows skills such as using a Web browser, using Windows Explorer to navigate computer folders, using a computer mouse or pointer, etc.

The first version of these instructions was prepared shortly after the GEOID09 (Conus) model became available and focused on that model but the procedure is the same for GEOID99 (Conus) and GEOID03 (Conus). If you are exporting an earlier geoid model, simply substitute its name for GEOID09 in the following steps.

At the risk of restating the obvious, the “Conus” part of the name of the geoid model is an abbreviation for “Continental United States”.

These instructions presume you have the desired geoid model already installed on your computer. The latest (and last) Trimble Geomatics Office Ver 1.63 and Coordinate System updates (highly recommended and available from Trimble’s web site at <http://www.trimble.com>, then follow the hyperlink sequence [Support & Training / Support A–Z List / Trimble Geomatics Office / Downloads / v1.63](#)) will install GEOID99 (Conus) and GEOID03 (Conus) for you.

If you want to use GEOID09 (Conus) and do not already have that geoid model installed on your computer, please follow the instructions provided in the Inland GPS Inc. Technical Tip titled [“Installing GEOID09 in Trimble Geomatics Office PC software”](#) before attempting this procedure.

There is much confusion regarding the “screen name” for the geoid files (the name that appears in the **Project Properties** dialog in Trimble Geomatics Office (TGO) and in the list of available geoid models in Survey Controller) as opposed to the actual file names of the **.GGF** (**G**ridded **G**eoid **F**ile) files in the **GeoData** folder on the computer. This confusion is compounded when a subgridded portion of the whole-country model is eventually exported to the Survey Controller data collector and the user may note that the file that ends up on the Windows-based data collectors is the screen name with the **GGF** extension. The only practical course is to never change the screen name so that is the only method that Inland GPS Inc. recommends or supports.

The steps are as follows:

### 1. Opening or creating a TGO project using the GEOID09 geoid model

If you have just completed the procedure for installing GEOID09 (Conus) in TGO as described in the Technical Tip from Inland GPS Inc. titled [“Installing GEOID09 in Trimble Geomatics Office PC software”](#) and still have open the TGO project using GEOID09 (Conus) you can go directly to [Step 2](#) below.

If you have a TGO project using GEOID09 (Conus) on your computer, open that project and go directly to [Step 2](#) below.

If you have GEOID09 installed but do not have (or cannot find) any TGO projects using GEOID09 (Conus), you need to create one to export GEOID09 to Survey Controller as follows:

Open TGO and create a new project. You will likely want to delete this project at the end of this process. You can use any name for this project, but something descriptive like “Export GEOID09” may prove useful.

The **Project Properties** dialog will appear. Click the **Coordinate System** tab.

Click the **Change** button in the **Coordinate system settings** (upper) part of the window. In the **Select Coordinate System** window, select the **New System** option, then the **Next** button.

In the **Select Coordinate System Type** window, select the **Default Projection (Transverse Mercator)** projection and click **Next**.

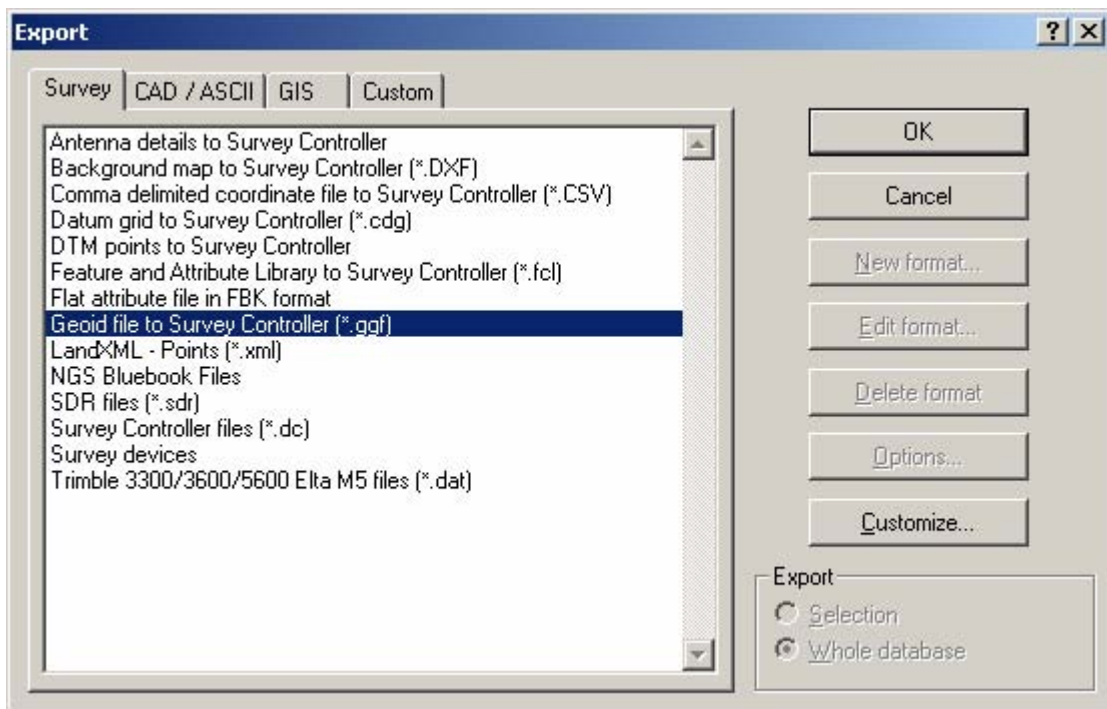
The **Default Projection (Transverse Mercator)** window will open. Since this project is just being used as a vehicle for exporting the GEOID09 file or a portion thereof, click the **Next** button to skip through this window.

Now you will be at the **Select Geoid Model** window. Highlight **GEOID09 (Conus)** and click **Finish**. The **Project Properties** dialog will reappear, click **OK** and you will have a TGO project ready to use for creating a subgrid and exporting that subgrid to a data collector running Trimble Survey Controller.

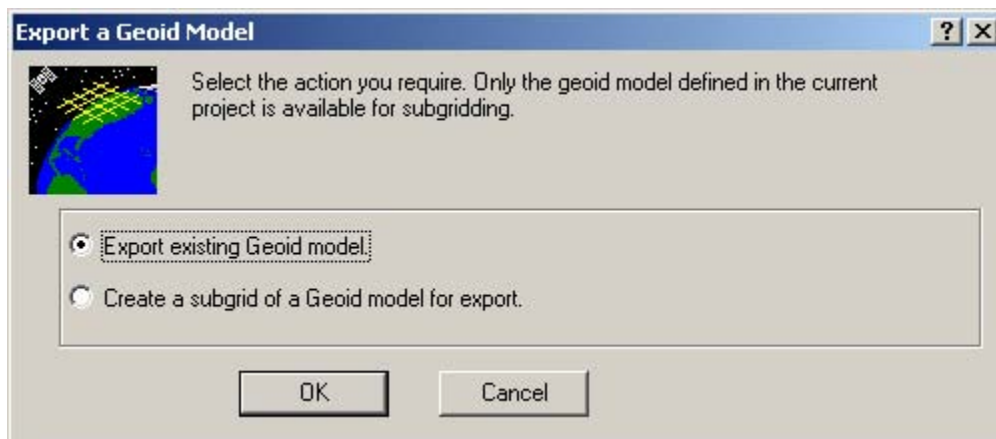
## 2. Beginning the export process

From the TGO screen, launch Export by the **File | Export** sequence or clicking the **Export** icon in the TGO Standard toolbar. The **Export** dialog will appear.

Select the **Survey** tab, then select the **Geoid file to Survey Controller (\*.ggf)** line and click **OK**.



The **Export a Geoid Model** dialog will appear.



Most users elect to carry in their data collector only the portion of the geoid model that covers their foreseeable working area. This is accomplished by creating a subgrid of the larger GEOID09 (Conus) file that covers the entire continental United States. Such an approach reduces storage requirements and may provide a minor performance improvement. The Trimble TSC2 has 512 Mb of storage, so file size is not a critical consideration.

If you elect to carry the entire 33-Mb GEOID09 (Conus) file in your data collector or have previously created the subgrid of GEOID09 (Conus) you wish to export, select the **Export existing Geoid model** radio button, click **OK**, and skip to [Step 4](#).

### 3. Creating a subgrid of the GEOID09 (Conus) file

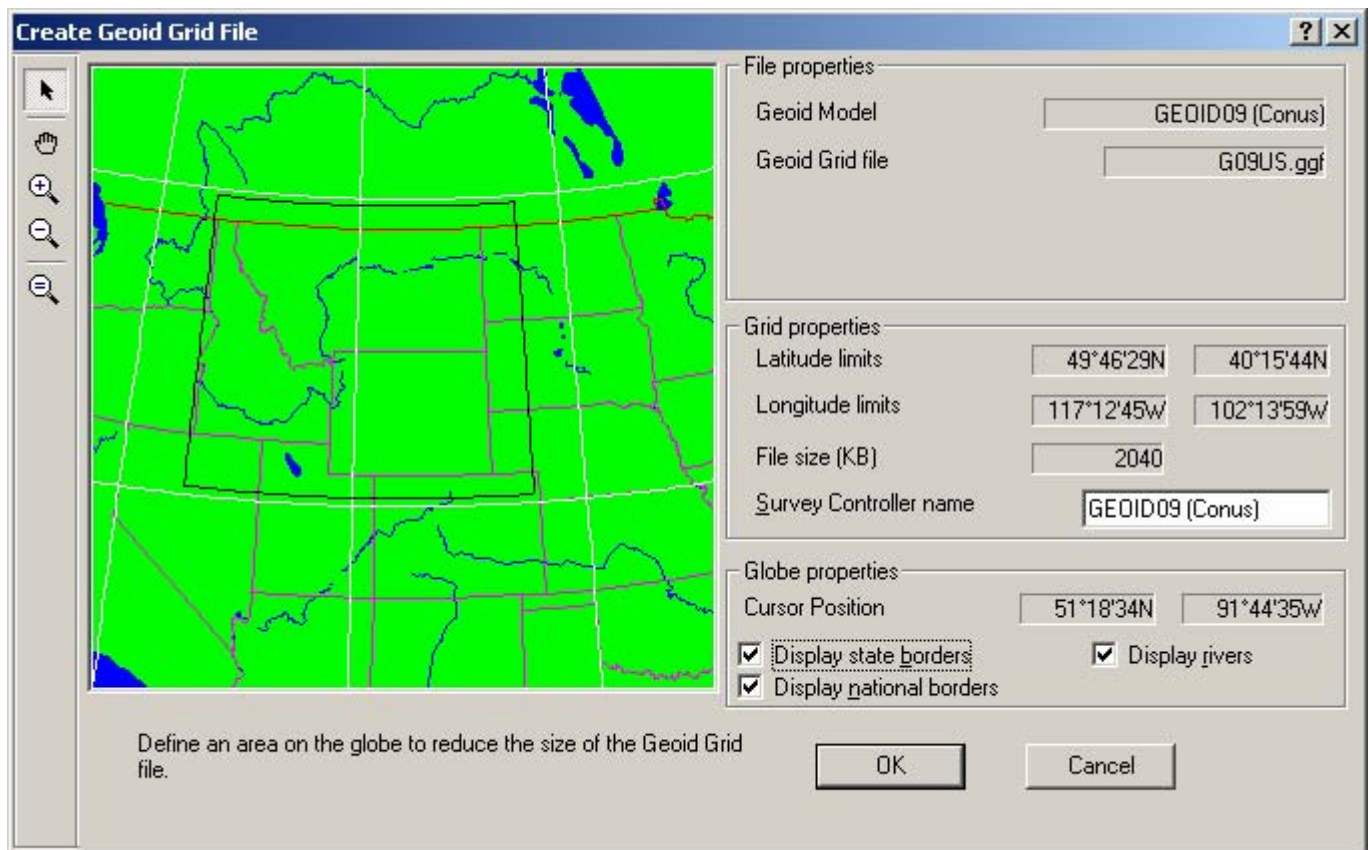
In the **Export a Geoid Model** dialog, select the **Create a subgrid of a Geoid model for export** button and click **OK**.

The **Create a Geoid Grid File** dialog will now be open. The yellow rectangle on the map indicates the extents of the GEOID09 (Conus) file.

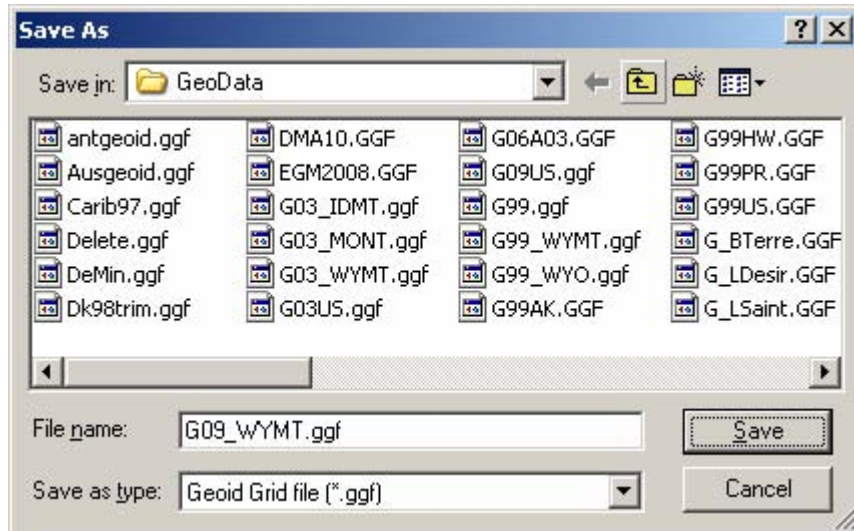
Notice the two grayed-out fields under **File Properties** in the upper-right-hand corner of this dialog. The field named **Geoid Model** (should read **GEOID09 (Conus)**) is the “screen name” mentioned on Page 1 of this document and the field named **Geoid Grid file** (should read **G09US.ggf**) is the name of the **GGF** file in the **GeoData** folder on the computer.

Following the recommendation on Page 1 of this document, make sure the field labeled *Survey Controller name* contains **GEOID09 (Conus)** character-for-character case-sensitive identical and nothing else. That will probably be the default, but confirm nonetheless.

Use the tools to the left of the map to zoom to the desired coverage area. Use the pointer tool to click and drag a rectangle around the desired coverage area plus 50 to 100 miles on all sides to provide adequate data for the interpolation algorithms. In the example below, the desired coverage area was all of Wyoming and Montana. The field labeled **File Size (KB)** shows this subgrid file is only 2040 kb. You may as well be generous when selecting the coverage area because with newer data collectors you have plenty of storage and managing one larger subgrid is infinitely easier than managing two or more smaller subgrids. Click **OK**.

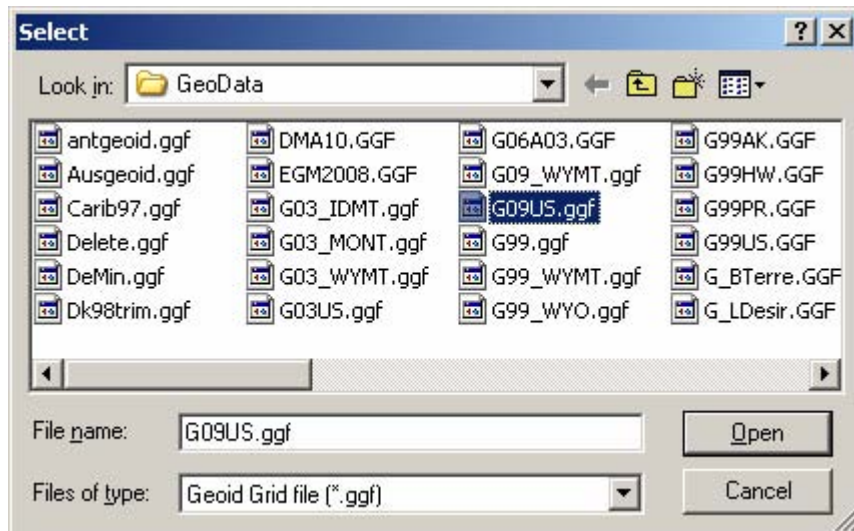


Now a **Save As** dialog will appear. You will notice that all the filenames follow the 8.3 naming convention from the MS-DOS days. Inland GPS Inc. suggests adhering to that naming convention until it is established there is no reason to do so. To facilitate finding subgrid files in the future, Inland GPS Inc. strongly suggests naming the subgrid **G09XXXXX.ggf** where the fourth through the eighth characters in the filename provide some indication as to the coverage area. In the example below, we named the subgrid file **G09\_WYMT.ggf** for obvious reasons. This way the main GEOID09 file and the subgrids made therefrom will be grouped together when the files in the **GeoData** folder are sorted by name. Click **Save** and skip to [Step 5](#).



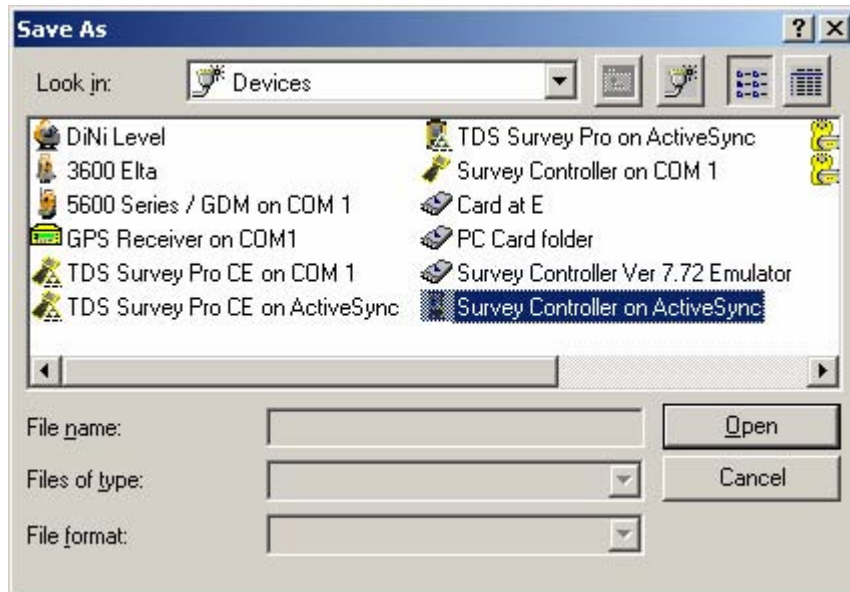
**4. Selecting the full GEOID09 (Conus) file** (for those electing to carry the full file in the data collector) **or a previously created subgrid file** (when it is desired to upload a previously created subgrid file stored in the GeoData folder)

After the final action in Step 2 above you will see a **Select** dialog that looks like the example below. Click on **G09US.ggf** (or the desired previously created subgrid file, if it exists) to select, then click **Open**.

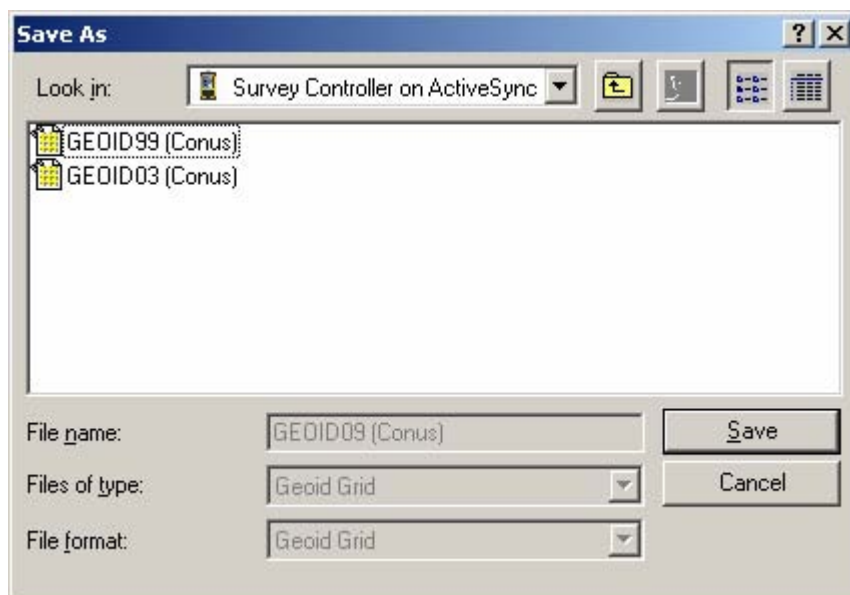


## 5. Sending the geoid file to the Survey Controller data collector

Regardless of whether you got to this point from Step 3 or Step 4, you will now see a **Save As** dialog. In this example we will send the GEOID09 file to a Trimble TSC2/Survey Controller data collector, so we click on **Survey Controller on ActiveSync** to select the correct device, then click **Open**.



Now you will be at a **Save As** dialog. In the example below, this data collector already has subgrids of GEOID99 (Conus) and GEOID03 (Conus). Note that the **File name** field is grayed out – you cannot change the name of the file you are about to upload. Click **Save** and the file is on its way.



After the convert-and-send process is completed the data collector running Trimble Survey Controller software should be ready to go to work using GEOID09.

**Suggestion:** If you need to carry multiple subgrids for widely separated working areas, remember that all subgrids sent to the Survey Controller data collector will be named **GEOIDXX (Conus).ggf** and only one file with that name can be in the main part of the **Trimble Data** folder.

One workaround is to create a folder named **Geoid files** in the **Trimble Data** folder (or on a memory card in one of the slots on a TSC2), then create descriptively named subfolders in the **Geoid files** folder. Export the first

GEOID09 subgrid file to the data collector, then move the file named **GEOID09 (Conus).ggf** from the main part of the **Trimble Data** folder to its descriptively named folder. Repeat for as many subgrids as you feel you need. After all the subgrids are uploaded, copy the one you wish to use to the **Trimble Data** folder. When you need to change subgrids, delete the **GEOID09 (Conus).ggf** file in main part of the **Trimble Data** folder, then replace it with a copy of the desired subgrid taken from the appropriate subfolder.

Going through this workaround may convince you that it is easier to make and use a larger subgrid instead. They really do not take up all that much space.