

Re: What coordinate system should I use?

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- *From:* Happy Trails <[nomail@xxxxxxxxxxxx](mailto:nomail@xxxxxxxxxxxx)>
  - *Date:* Mon, 10 Mar 2008 17:16:13 -0500
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On Sun, 9 Mar 2008 18:22:51 +0000, Dominic Sexton  
<[d-sep03@dscs.demon.co.uk](mailto:d-sep03@dscs.demon.co.uk)> wrote:

You might get more helpful answers if you tell us what you already use and what you hope to achieve with your augmentations.

Use lat and long and spherical trig for calculations. If you need to display the output on / as a map you will need to use and appropriate projection.

You may be interested in the partial source code available for GPSMapEdit:

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Dominic,

One particular function which has got me thinking about this more than anything else is the production of contour lines for topographical mapping. Terramodel is the best software around for this in terms of flexibility and what you can do with it, but it has some limitations.

Until recently, with the survey-related work I had done, I could not even see any need for contour lines except to reproduce on a printed map, which in my case was just to show the client a pretty picture he could understand, to justify our billings. All I ever wanted for stakeout and other uses was the TIN. Now that I am doing some gps mapping, I understand how useful contours can be.

Because of the antique arithmetic code in Tm, which Trimble has never bothered to update in the dozen or so years they have owned the product, it is a bit slow when processing more than a few hundred thousand points. It is a tool for surveyors, and works very well for surveyor-sized dtm's, but when you get millions of points, it just poops out.

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Plus, if you want the contour module incorporated into your copy of Terramodel, you have to have a licenseable, dongle version – minimum cost \$1000 for the Tm CAD pack, plus pay the extra \$500 for the contour module. Like DEM2TOPO I would like to make something available as "BeerWare", but I don't like beer, so I guess it would have to be "CubaLibreWare", if you know what I mean.

I thought I might create a contour drawing program to start with, that would read .HGT files, and have most if not all of the contour functions of Terramodel. I know there are several contouring programs around, but none of them have the rich set of features that Tm has with the possible exception of later versions Global Mapper, which I have not seen.

I do not have the contour module in my own "free" FDM version of Terramodel – no dongle – so if I want to produce contours I have to go to the office and do it on the full-featured version there. It's a pain, and it has the limitations noted above.

Good suggestion on the source code for GPSMapEdit. Do you have any idea in there where I might be able to review the code for calculation methods used, and numerical accuracy? People have commented that it uses Lat&Lon degrees with 5-decimals accuracy – can anyone verify that?

– Tom

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