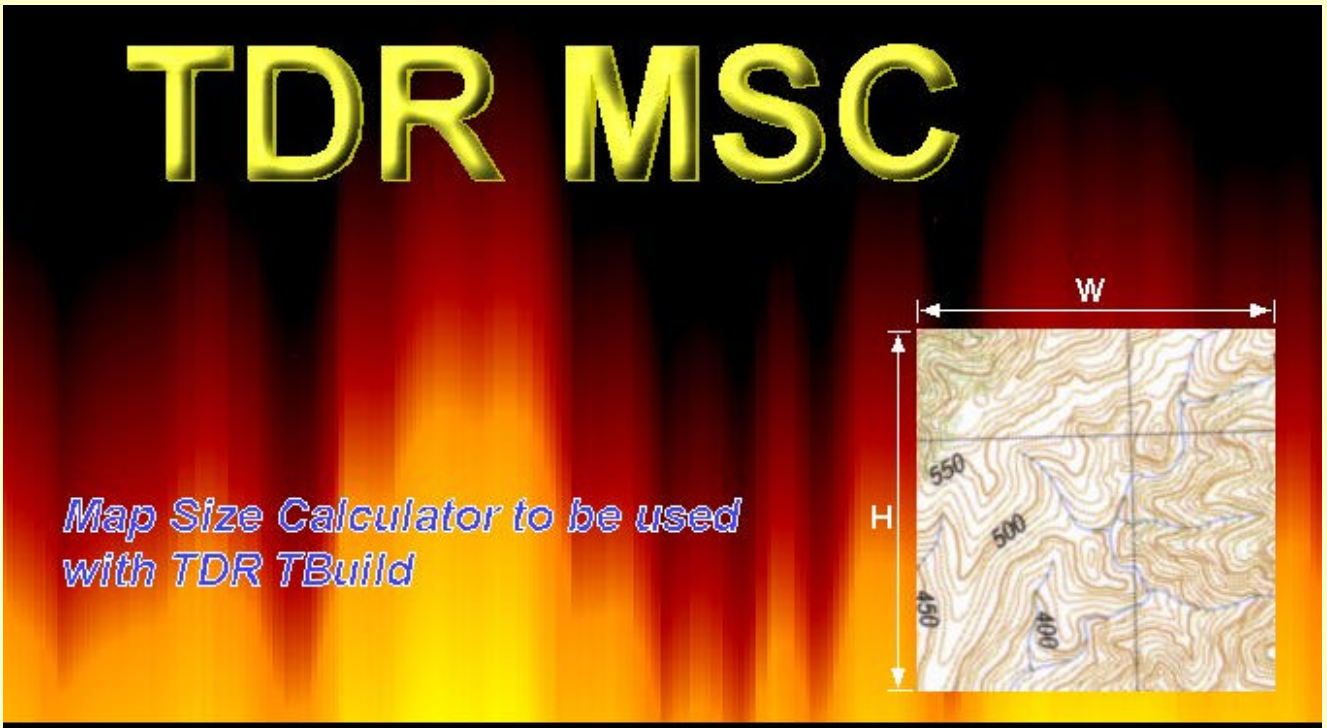
The Brief Guide for
TDR MSC and TDR TBuild



V0.2

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Vers 0.2 14/08/2008

Introduction

TDRMSC and TDRTBuild are two programs to assist in creating an ArcInfo ASCII Grid format file that are 1 degree by 1 degree in size.
The concept takes a BMP file and converts that into the ArcInfo ASCII Grid format. This is the format need by the program DEMCON and hence the ATF/AATF Power Toolkit.
The BMP file is a map but it represents heights in a grid structure. The significant heights, main height changes, are similar to contour lines in a topographical map. The underlying grid in these maps is a 10 x 10 pixel grid.
Consider the BMP map as a coloured layer map with each colour representing a specific contour height. Contour intervals are similar to that found in topographical maps. So the coloured layers may represent jumps in elevation of 5m, 10m, 20m etc. Though for any one map that interval is fixed.

TDR MSC:

TDRMSC is a map size calculator. Given a terrain size require to draw as a BMP graphic and an elevation colour set the calculator will determine the size of the graphic in pixels you need to use. The BMP graphic must be in whole 10 x10 pixel blocks as well as a necessary buffer zone. The buffer zone is for "oddities during the complete conversion process from BMP to a fully developed ATF/AATF map.

These BMP graphics are not scaled to the same scale as ATF/AATF maps. Each grid is 0.0008333 degrees square. That is approximately a square grid of sides 92 m per side.

Besides giving you the necessary size of your picture it also provided two output file. The output files are:
"***TDRMSC_Data.txt***". This is a text file with the calculator's results. This saves the problem of writing the detail on "that" scrap piece of paper, which tends to vanish at critical moments. The assumption is the file may survive longer.
"***TDRMSC_MAP_Data.xdt***". This file holds data need for the second program TDRTBuild.

These files are automatically generated when you use the **Exit** command in the **File Menu**. If you do not use the exit menu then they will not be created and hence the program TDR TBuild will not have the necessary data to assist in building the elevation map.

NOTE: Always use the **File->Exit** menu to quit the program.

TDR TBuild

TDR TBuild is the main program. It converts the BMP map based on an elevation colour set; user defined minimum height and contour interval setting. The program produces the converted heights in a table where these resulting grid elevation values can be edited before saving. The table is similar in appearance to a normal spread sheet. The main difference is the row column headings. These heading are marked off in meters. The ZERO Point of the grid is the bottom left corner. Hence row measurements increase bottom to top, and column measurements increase left to right. This provides a useful means to correlate anomalies in an ATF/AATF map to the elevation data that was generated. At present to recreate the elevation data the conversion process has to be rerun.
The ability to reload saved elevation data has not been implemented in this release.

TDR TBuild also requires as input the file "**`TDRMSC_MAP_Data.xdt`**" that was generated by TDRMSC. This file and the BMP map file should be in the same directory as each other. TDRTBuild expects these files to be in the same directory.

The program on selecting '**File->Save**' or '**File->Save As**' produces two files, one in ArcInfo ASCII Grid format for processing and a text file with necessary information to use in the ATF/AATF Power Toolkit to build the map.

Note big maps take time to process. A 45 Km x 45 Km map will take about 30 seconds or more. Maps this size have a large amount of calculation to do. A map at maximum size of 50 Km x 50 Km has just over 290,000 height cells to deal with.

The BMP map

The BMP map is a coloured contour map. Each layer represents a contour height and has a specific colour, colours depend on map and the selected elevation colour set.

The following is a simple example of a map.

The coloured map actually consists of 2 parts, The Elevation Colour Set and the actual coloured contour map.

The Elevation colour Set:

This is a collection of colours, where each colour represents a contour level. The colour set has an order of lowest elevation to highest. This is a left to right ordering. The program has a hard coded built in colour set, referred to as the System elevation Colour set. A copy of this set can be found in the file "**`elevationcolours.bmp`**", included with the program.
A user may define their own elevation colour sets. These colour sets must be included in the actual BMP map file.
There are some colours that can not be used in user defined colours sets as they have/will have specific meaning with in the program. These colours are the "restricted colours"
A list of colours in the System colour set and the restricted colours are provided below.

System colours:

	Red	Green	Blue	
	0	132	33	LEVEL 0 Lowest elevation
	99	198	0	LEVEL 1
	66	231	0	LEVEL 2
	165	231	66	LEVEL 3
	165	198	0	LEVEL 4
	165	165	0	LEVEL 5
	198	198	0	LEVEL 6
	231	198	132	LEVEL 7
	231	198	66	LEVEL 8
	231	165	0	LEVEL 9
	198	165	66	LEVEL 10
	198	165	132	LEVEL 11
	173	123	41	LEVEL 12
	165	99	0	LEVEL 13
	132	66	66	LEVEL 14
	165	66	0	LEVEL 15
	198	99	0	LEVEL 16
	231	99	0	LEVEL 17 Highest elevation

Restricted colours:

	Red	Green	Blue	Colour
	255	255	255	WHITE reserved use
	0	0	0	BLACK Reserved use
	0	0	255	BLUE - SEA not implemented yet
	0	128	192	**BLUE1 - LAKE** **implemented**
	0	192	192	BLUE2 not implemented yet
	0	255	0	GREEN not implemented yet
	255	255	0	YELLOW not implemented yet

When a user defined elevation colour set is used the following rules apply:

1. The elevation colour set is drawn in the top 10 pixel rows of the picture area.
2. No other colours than the actual colour set may be in this zone.
3. The colour set is ordered left to right.
4. The left most colour represents the lowest contour level, that is the Minimum height level.
5. The colours are drawn in blocks 10 pixels by 10 pixels and are consecutive with no spacing, or border.
6. The colour set MUST terminate with WHITE colour,
   (decimal RGB code of 255, 255, 255);
   (hexadecimal RGB code of FF, FF, FF).

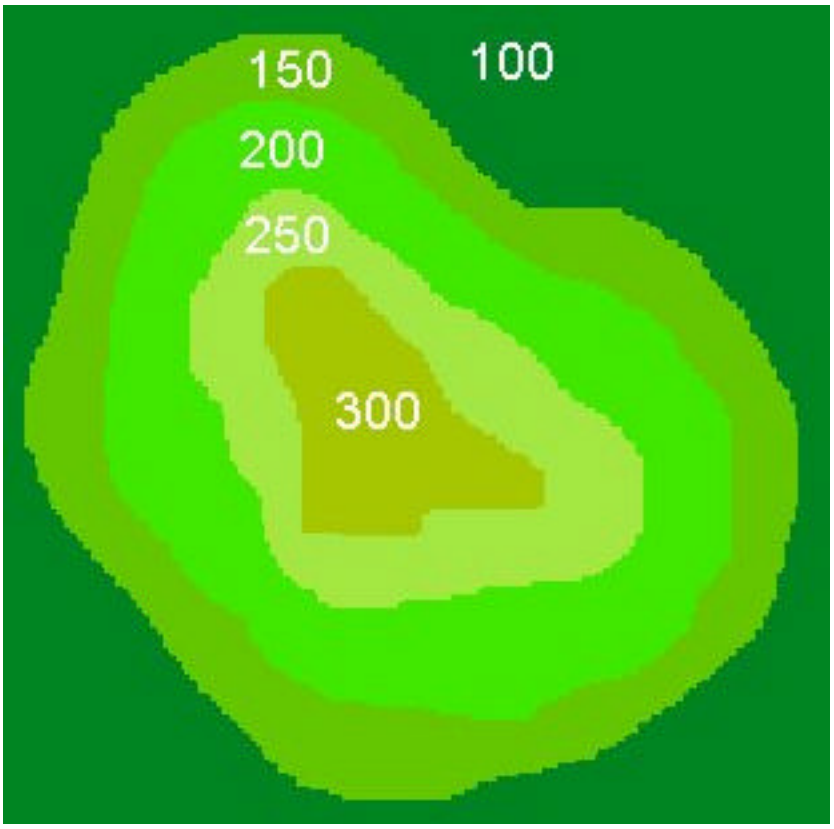
The TDRMSC program includes the determination of a user elevation colour set in its results. You are asked if you will use the systems colour set, (not to be included in the BMP map) or a user defined colour set.

The Coloured Map:

The coloured map is drawn as 10 x 10 pixel blocks. The map's structure is similar to that of the elevation component of an ArcInfo ASCII Grid elevation file

Each colour layer represents a specific contour level, starting at the Minimum Height level. The conceptual contour interval is a fixed spacing. Though I use the term conceptual contour interval, it is some time convenient to view the contours as a specific value such as 5m, 10m, 20m, 50m etc.

The program TDR TBuild reads the coloured map in the 10 x 10 pixel blocks. Each block has a single height, that of the contour represented by the colour.
The program evaluates specific height based on contour height changes.



Building a BMP map

The most critical issue with making a BMP map is to remember that you are only plotting point heights. It is easy to mistake the concept of a 10 x 10 pixel block as being “the elevation”. All the block of colour does is provide a mens of representing that elevation concept and single point height.
The block is an area but the height it represents is the average for that block. Elevation determination and hence contours are drawn to that point.

General Terrain

1. Avoid using of single blocks to represent areas of terrain as ridge lines and spurs.
2. Avoid the use of sharp changes to the contour edges.

On the highest colour the use of the single colour blocks will result in a poor contour representation, close to a single line. If only one block was use it would have a sharp direction change and still loose perspective.

The other point of sharp changes can result in angular contours in the final map. This will become very obvious in the colour map built with the Power Toolkit in ATF/AATF.

In many situations it is going to be a case of trial and error to get the effect needed.

Lakes

BLUE1 is the LAKE colour.

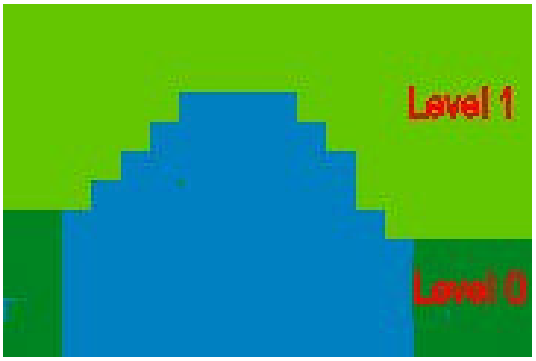
To add a lake to a BMP map use ONLY the Blue1 colour.

	Red	Green	Blue	Colour
	0	128	192	BLUE1 - LAKE

The program TDR TBuild has this colour already loaded within the restricted colour set. All restricted colours are added to a users colour set by the program.

DO NOT include this as a colour within your own colour set.

Lake water levels are set by the terrain elevations. Terrain elevations are determined then a lake is allocated a water level height equivalent to the lowest land abutting onto that lake.
This simply means do not make assumption on where the lake outflow will be.
After the lake is added to the terrain final elevations to



When a lake crosses two elevation colours, as in the diagram below, the determining elevation is taken from the lower colour elevation. The area of the lake in the higher elevation colour, the resulting slopes are steep and may be consider close to cliffs. Much though depends on the actual contour interval used to build the map. Hence a contour interval of 10 m will have less of a slope/cliff effect than a case of a contour interval of 50m.

The Details

The best way to look at the details is to go through the process of building a map. (Hint: With this map colouring work it is handy to have a painting type program that has a built in grid, such as Paint Shop Pro and Adobe Photoshop.)

The example will step through the process of building a BMP map, getting the elevation height file and converting that to an ATF/AATF map.

Example

This will be a small map; an East-West valley with some hills to the North and South. Also a small hill in the West end of the valley. The map width, East-West, will be 5 Km and the height, North-South, 7 Km.
The BMP map will be drawn using our own colour set. Though to be honest here I will just copy the System colour set onto the map.

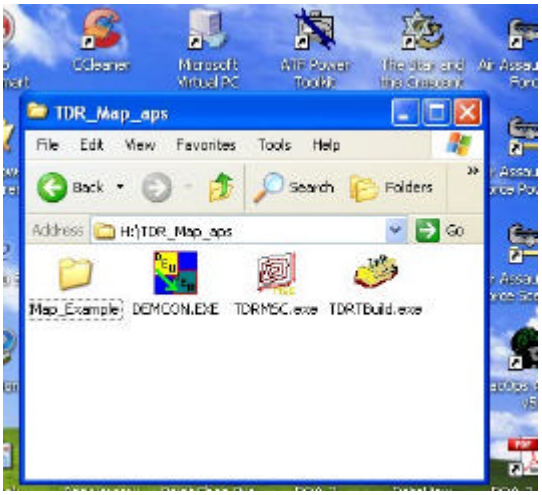
(***Note***: If you do copy the colour set it is drawn with a pixel depth of 24 with 16 mil colours.)

So if the System Elevation Colour set is copied to a BMP picture of only 8 bit/ 256 colours there will be distortions due to the colour depth change. The RGB codes above are correct for an 8bit/256 colour picture.)

STEP 1 – Set up your applications and directories to make life simple.

The main applications here are TDR MSC, TDR TBuild and DEMCON.
If you have used DEMCON before you will know it creates its own operational directory system usually on drive C:. The main directory is called MapData.

My simple approach is to place these programs in one directory and have a sub directory for the maps I am going to covert.
The following picture gives an indication of how I set it up.



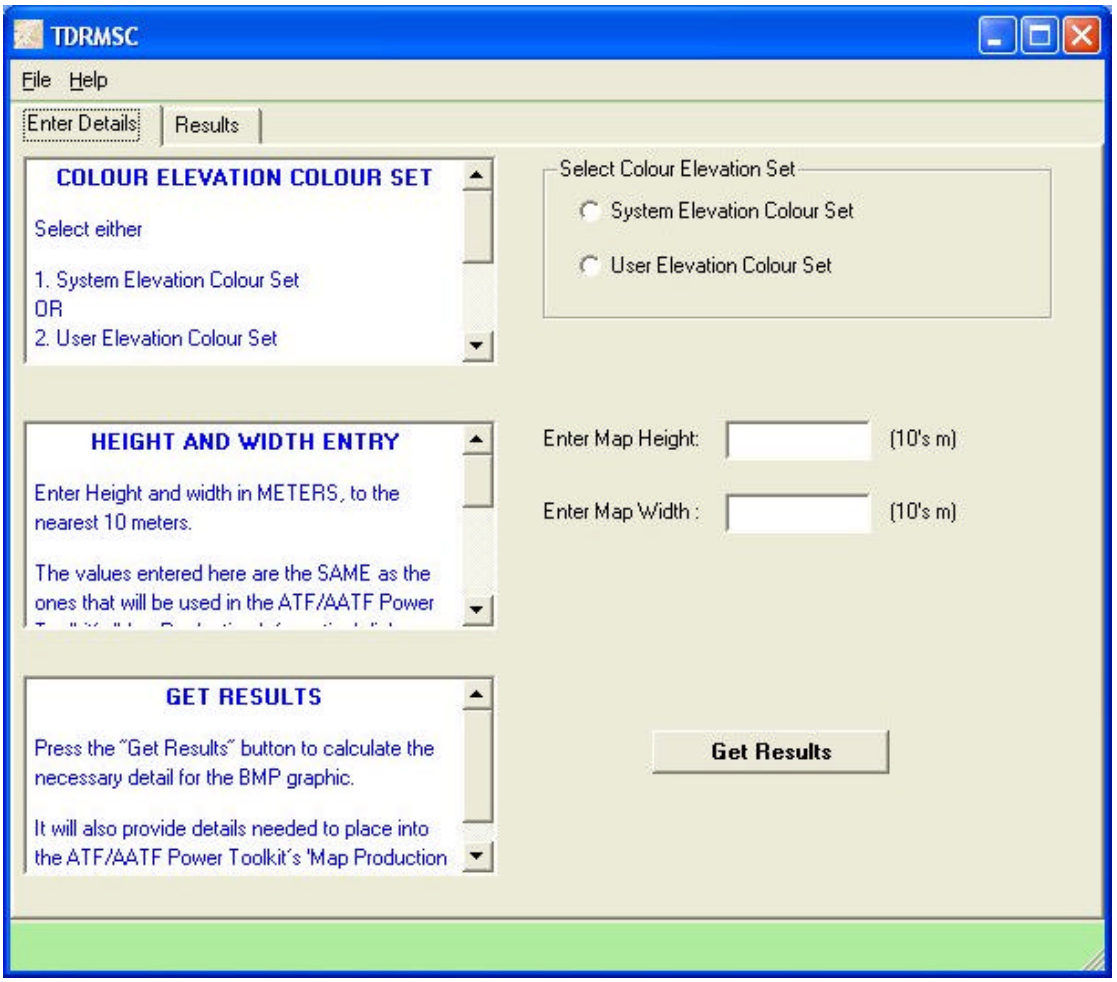
It is rather basic but remember TDRMSC does create 2 files and one is needed by TDRTBuild. That file has to be with eth BMP map file. This set up keeps everything close and saves lots of file shifting.
Besides all that, how you deal with your setup is in the end personal choice.

STEP 2 – Get the correct size of the map using TDR MSC.

There is nothing special in this.
Open TDRMSC and enter the data.
When you start the program and got past the splash screen you will see the first page. Also there are 2 tabs, “Enter Details” and “Results”, page 1 is Enter Details”. Also there is a green strip on the bottom of the page. This is a status bar, messages appear along this during the process.

“Enter Data” page:

The “Enter Data” page has some scroll sections on the left hand side and the data entry areas on the right hand side.
The scroll sections provide some online help and explanation of the sections they refer to, that is “Elevation Colour Set”, Width and Height Entry” and “Getting Results”.



Entering the necessary data is straight forward.

Elevation Colour Set:

Select either ‘System Elevation Colour Set’ or ‘User Elevation Colour Set’.
This selection has an effect on the map height.
The User Elevation colour set makes sure that additional space is allocated for the user’s elevation colour set within the picture space.
Selecting system colour ste does not allocate additional space.

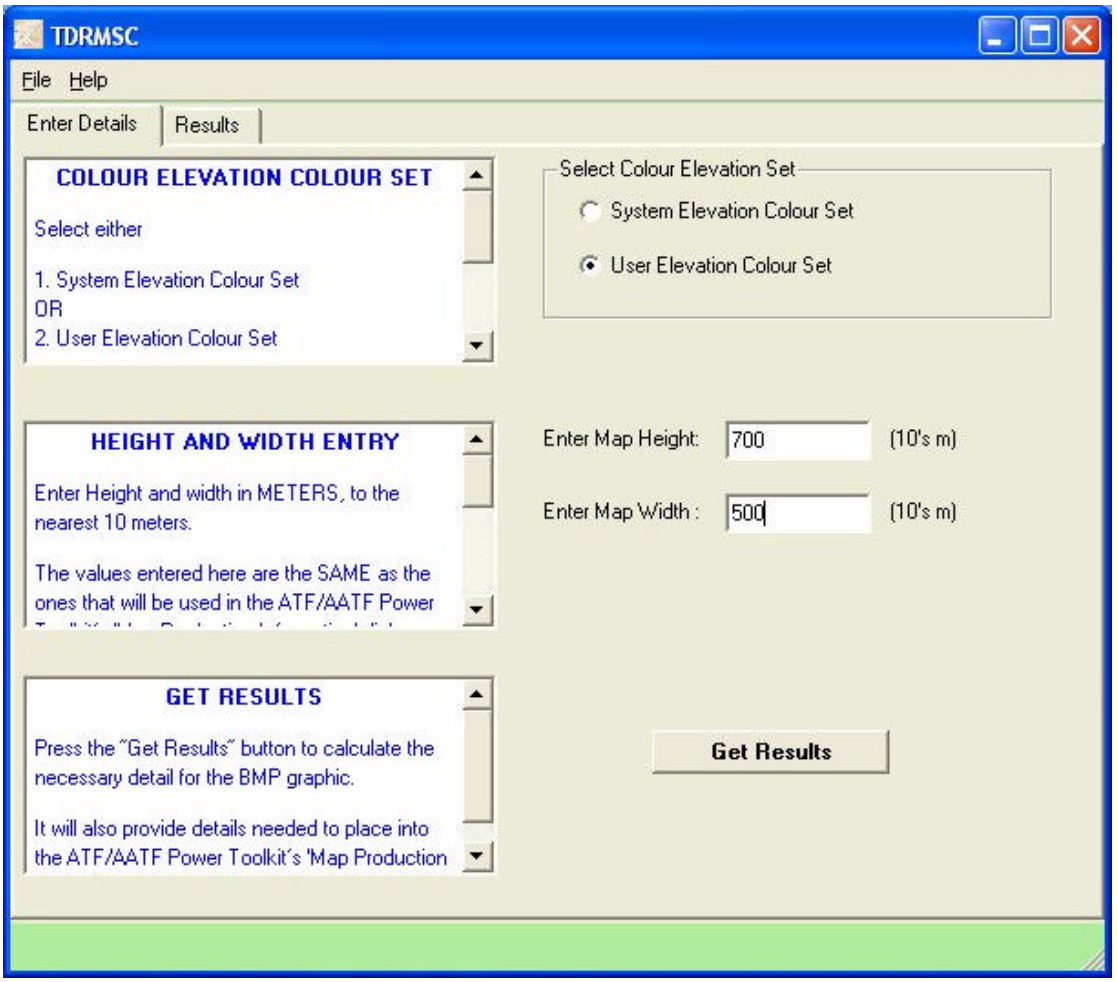
Do not select System Elevation colour Set if you are going to use your own colour set.

In this example the map is to be drawn using the ‘User Elevation Colour Set’. So this option is selected.

Map Height and Width:

The map height and width are expressed in 10’s of meters; the same as in the ATF/AATF Power Toolkit.
So a height of 7Km , 7000m , is entered as 700.
Also a width of 5KM is entered as 500.

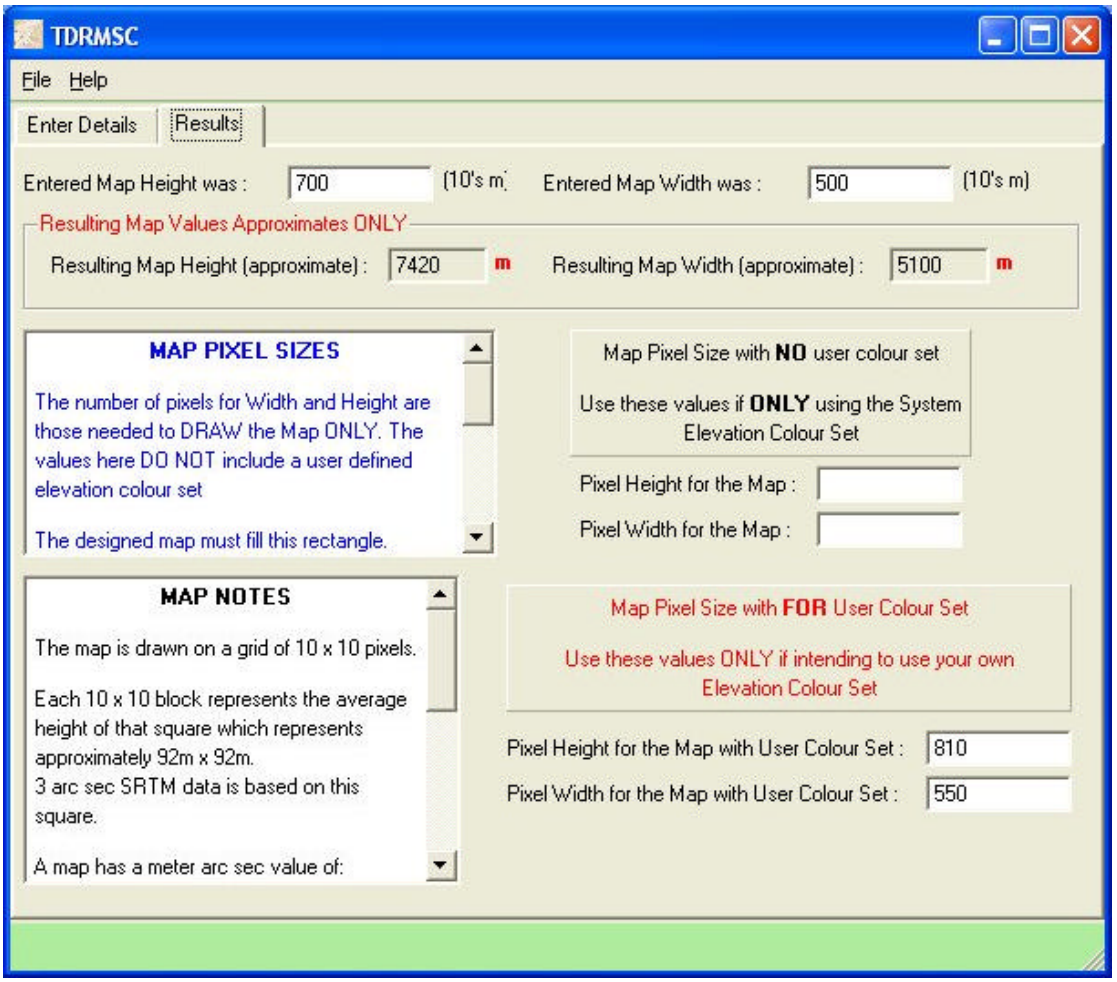
This covers the data entry for the calculator.



Once the data has been entered click on the “Get Results” button. Notice also the message displayed in the status bar.
Now select the “Results” tab and this opens the results page.

“Results” page:

The display here is the results from the calculations. The page is split into several sections.
At the top of the page are two sections. The first displays the entered height and Width that was entered on the Enter Data page and is expressed in 10’s meters.



Below that is a section that indicates the actual height and width of the map expressed in meters, which will be drawn. Notice this is greater than the size of 7000m by 5000m. The additional size is to allowing for a small buffer on the top and right hand side of the BMP map as well as having the map area built so that it comprises of complete 10 x 10 pixel blocks.

NOTE:
Now map dimensions are determined from the bottom left hand corner. Hence the buffer zones are on the right hand side and top. In the final ATF/AATF map these buffer zones will be trimmed off.

Below these two top sections and on the left are two scrolling sections providing a bit of help/information on ‘Map Pixel Sizes’ and ‘Map Notes’.

To the right of these scrolling sections are two output areas. The top one in black is when the map dimensions are for a map using the System Elevation colour set. The bottom section will display a note in RED if the map is to be sized for a User Elevation colour set.
If a System colour set is used the user results will not be displayed. Similarly if a user set is to be used the system results will not be displayed.

Now for the example map the sizes in pixels it has to be drawn to are:

Width is 550 pixels
Height 810 pixels

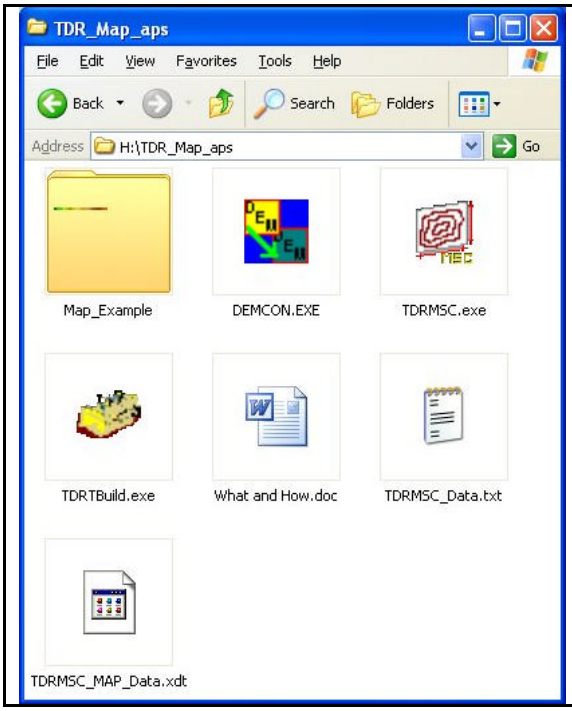
In the graphic drawing program this is the size that is to be set for the drawing area. Now that the calculations are completed quit the program.

To Quit:

The program TDRMSC is to create two files. These files are ONLY generated if the **File->Exit** menu is used. Also one of these files is needed by the program TDRTBuild.

NOTE:
To Quit/Exit the program use the File->Exit menu approach

On exiting the program there will be two files in the application’s directory, “**`TDRMSC_MAP_Data.xdt`**” and “**`TDRMSC_Data.txt`**”. The file “**`TDRMSC_Data.txt`**” has the results of the calculation.



Move these two file into the map directory, in this case the directory **`Map_Example`**. This is the directory that the BMP map will be placed.

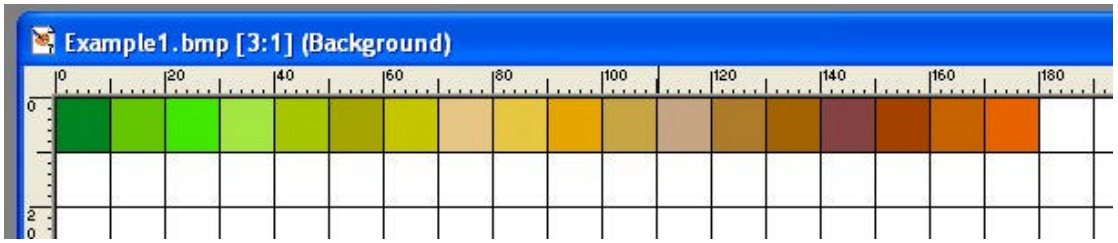
STEP 3 – drawing the BMP map.

Open your drawing program. Now make sure:

- ? The image attributes/size is set for Width of 550 pixels and a height of 810 pixels.
- ? The paint brush/or what ever drawing tool you want to use is set to a 10 x 10 pixel square shape and fully opaque.
- ? Turn the grid on.

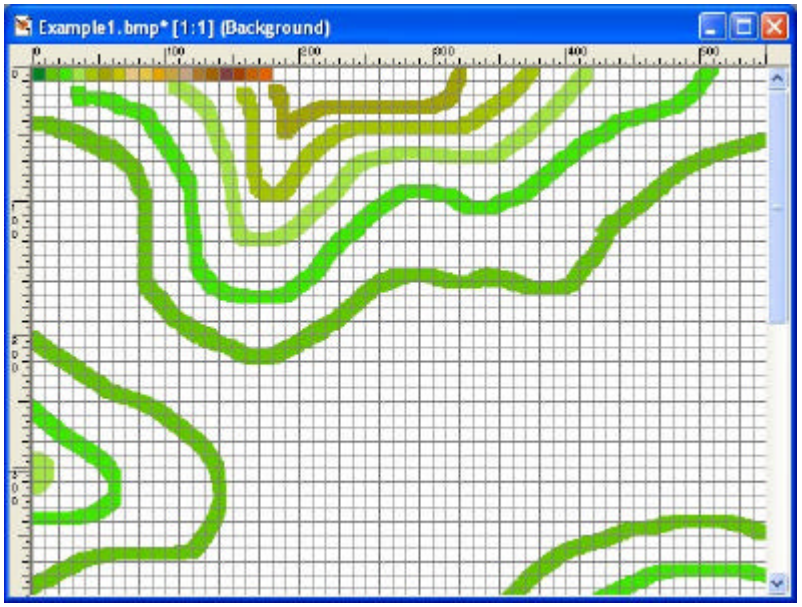
(Ok all basic things but some times they are mistakenly forgotten.).

Now to make things easy copy the colour set from the file "elevationcolours.bmp" to our new drawing. Place this in the top left hand corner of the picture You should end up with something similar to the following picture.



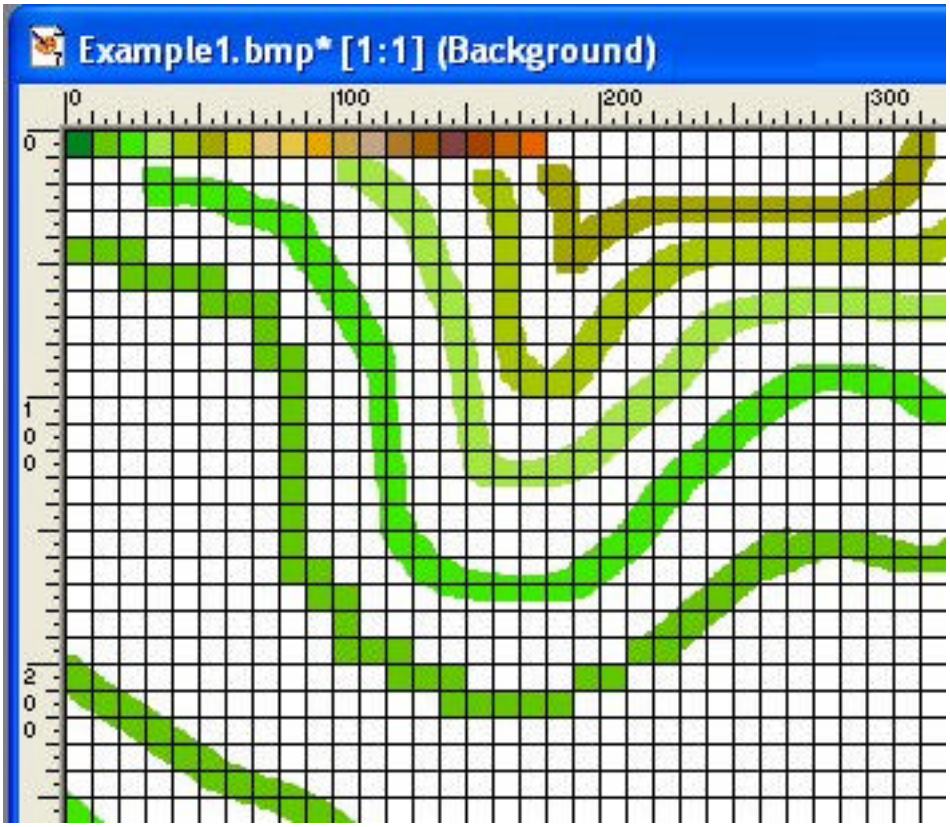
Now the map has to have the following: an East-West valley with some hills to the North and South. Also a small hill in the West end of the valley

Now draw in the contour lines roughly using the painting tool. Each contour line should be drawn with a different colour starting with the second to lowest colour. The lowest colour, the left most colour, is the map base colour and will be used to fill in the "base" heights of the map.
Don't worry about being in the grid for this stage. This part is to get the shapes of the hills with the various contour lines.



The included file "**`Example1_Step3a.bmp`**" holds the completed sketching of this example. As seen the contour lines are roughly done and do not easily relate to the grid.

The next part is to tidy up these rough lines so the contours are drawn as 10 x 10 pixel blocks and fit in our grid pattern. The main thing here is to get the intended structure blocked out and representing the final shapes.



The included file "**`Example1_Step3b.bmp`**" has the rough contours now blocked out. Some parts have been filled a well. That was for convenience along the side of the Elevation Colour set. Notice that only one side of the lines have been "cleaned" or blocked correctly. This cleaned edge is the leading edge to the next lowest contour height zone.
Notice also that in the top 10 rows, where the Elevation Colour set is there are no colours except WHITE after the last height colour.

Example1_Step3b.bmp can be found in the directory **`Map_Examples`**.

The next part is to fill in the colour zones with the appropriate contour height colour. This then completes the process of building the coloured BMP map.

The resulting map is the included file "**`Example1.bmp`**"

If not already in the directory place the file **`Example1.BMP`** into the directory **`Map_Example`**.

STEP4 – Use TDR TBuild to derive elevations into a ArcInfo ASCII Grid format file.

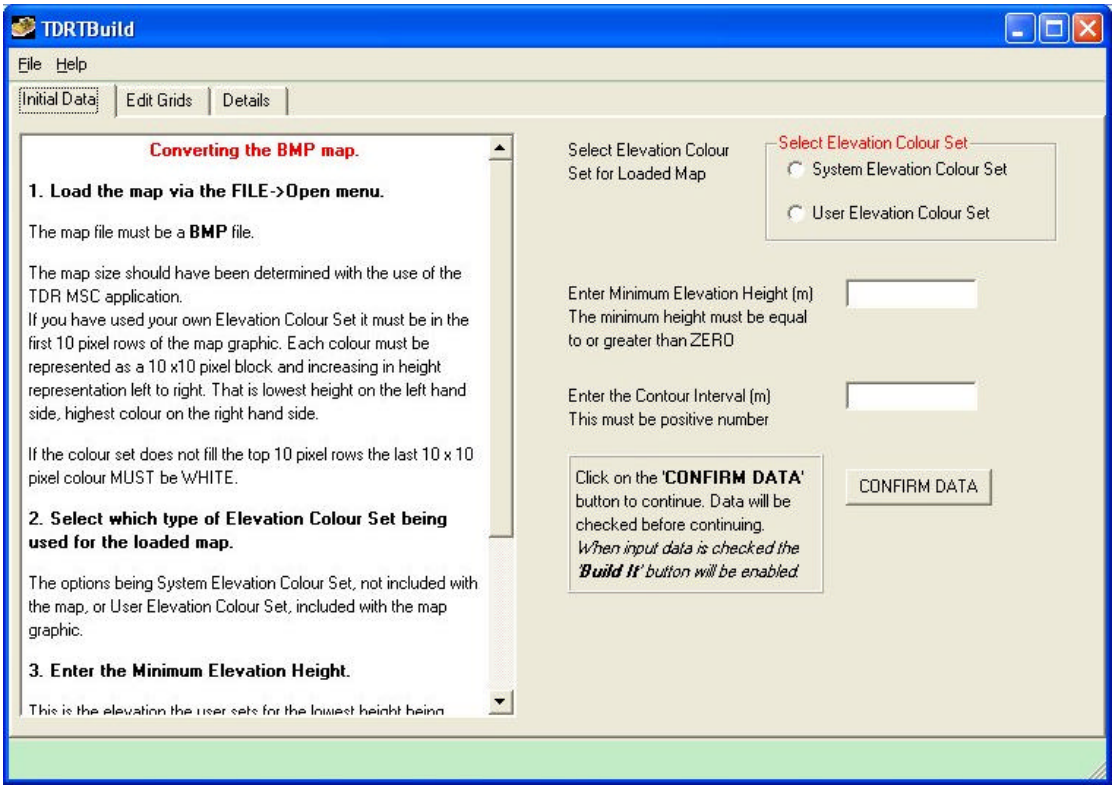
This is like the calculator rather straight forward.

IMPORTANT NOTE:
You must have the file "**`TDRMSC_MAP_Data.xdt`**" for the BMP map being processed in the same directory as the BMP file.

In this example the following files are in the directory Map_Example:
`Example1.BMP`,
`TDRMSC_MAP_Data.xdt`, and
`TDRMSC_Data.txt`.
So the necessary files are together in the same directory.

The basic process:

Start the program TDR TBuild and get past the slash screen.
The program opens into the first tab of 3 tabs. The tabs are "Initial Data", Edit Grid" and "Details".



A. The 'Initial Data' Tab:

In the "Initial Data" the basic information is entered. It is similar to the calculator in appearance. On the left is a scrolling window with details of the process.

Get the BMP file

i. Click on the File menu and select the Open... menu.
ii. This presents a standard Open File dialog. The dialog is filters for only BMP files.
iii. Navigate to the Map_Example directory, open it and then select the file Example1.BMP.
iv. Click on the Open button in the dialog.

The BIG catch here is if you open the wrong file you have to restart the application. It is an operational requirement in this release.

Enter the rest of the required data.

Elevation Colour Set.

This is straight forward. If the map BMP has a n elevation colour set in the first 10 pixel rows the select User Elevation colour set.
If the map does not have any elevation colour set embedded in it then select System colour set as you should have used the system set of colours.

In this example the map BMp has its elevation colour set in the first 10 pixel rows so select User Elevation Colour Set

Minimum Elevation Height.

This is entered in meters. This is the height represented by the left most colour in the used colour set. If the map has a base height of say 10m then a value of 10 would be entered.

In this example the Minimum Elevation Height will be 100m. So in our valley the valley floor is at a height of 100m.
So enter the value of 100.

Contour Interval.

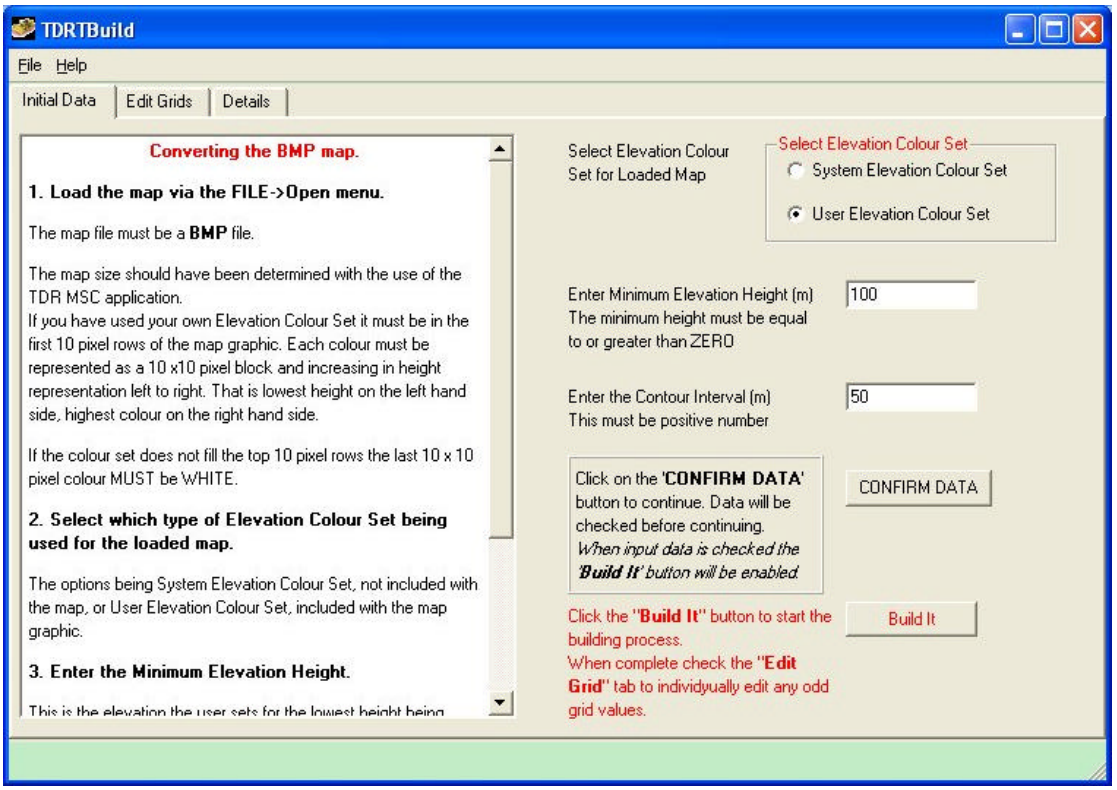
The contour interval is the value in meters between each contour colour. It is best to keep the value as 5m or above.
Heights are calculated and rounder to the nearest meter

For this exercise map use a contour interval of 50m.

The Confirm Data Button.

Click the button.

If everything is Ok you will now see some red text and a new button with a red label, “Build It”. .
If you don’t get the red text and button you will get a message telling you something got left out or a wrong value entered.



Build It button

Click the button and the process is off running.

If all things are OK, you will see a small window with the message “Got good data from file, writing results to temporary file”

If things went wrong for some reason there will be a message to out line what happened.

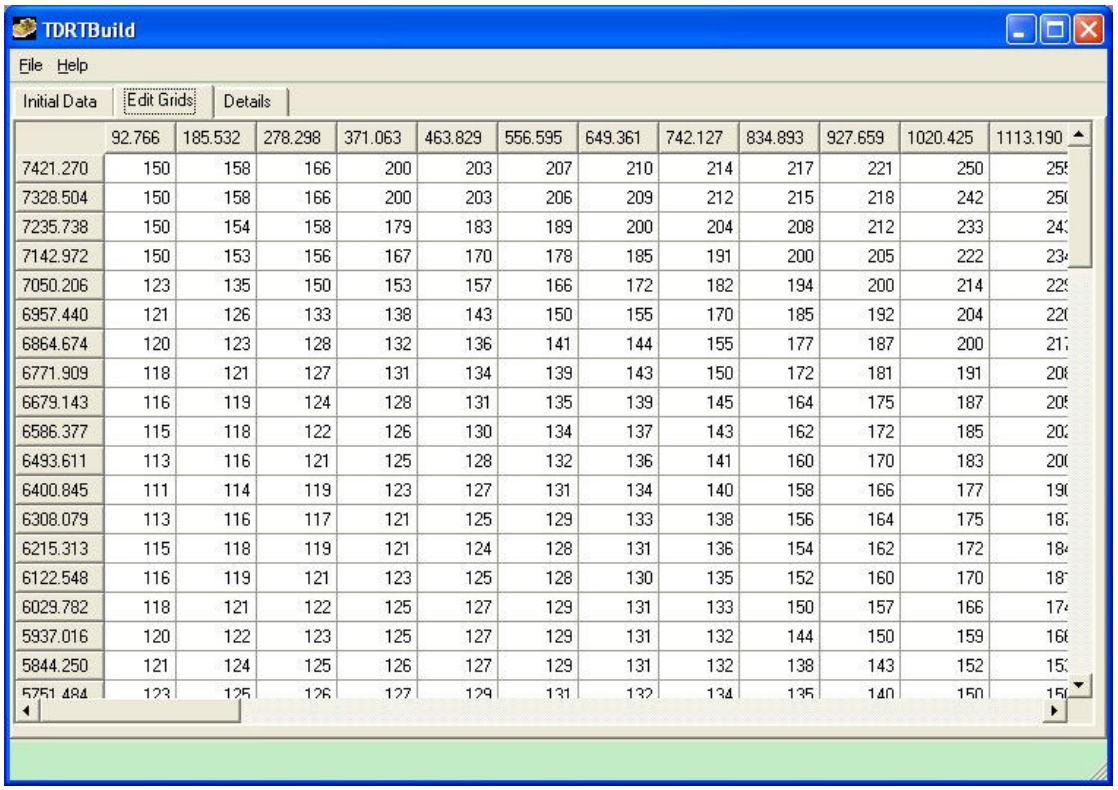
Click the OK button.

If the data was OK then depending on the size of the file being processed you will eventually get a window titled “Results ready to View and Edit”.

Close this window and now we ca look at the elevation data found in the tab “Edit Grids”.

B. The ‘Edit Grids’ Tab:

The main use for this tab area is to correct any obvious anomalies in the first instance. This is more useful after the ATF/AATF map has been built and then anomalies will appear.

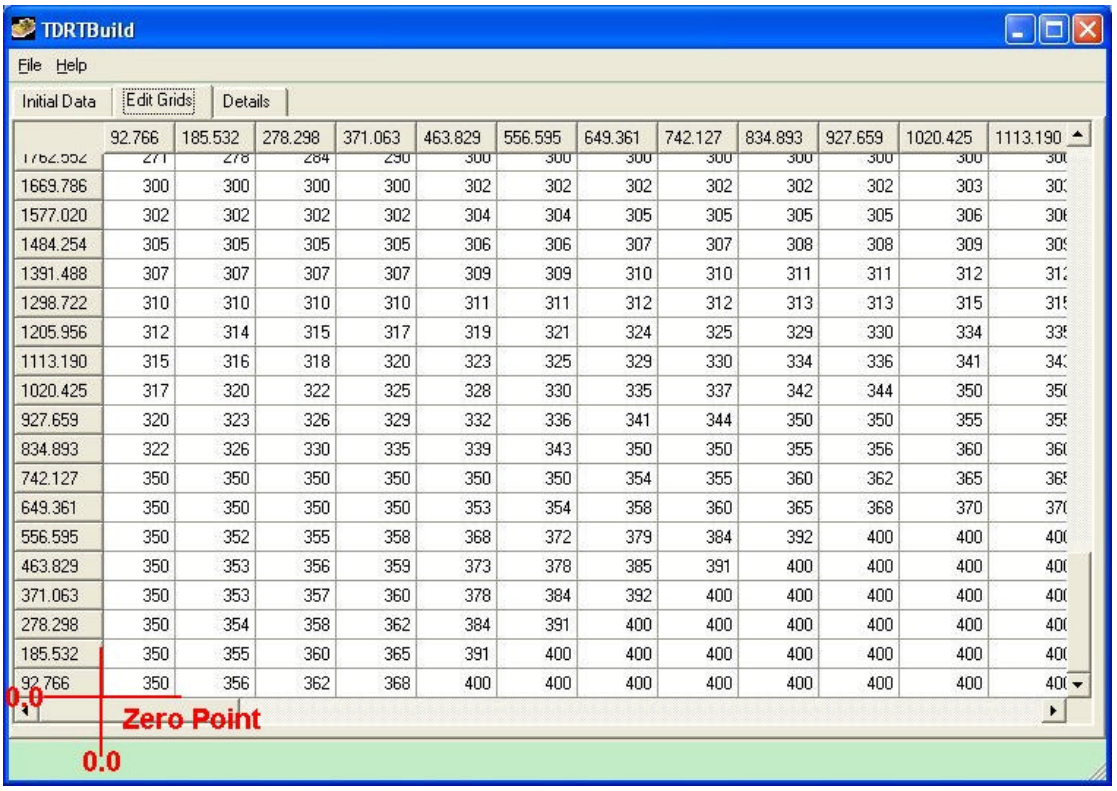


	92.766	185.532	278.298	371.063	463.829	556.595	649.361	742.127	834.893	927.659	1020.425	1113.190
7421.270	150	158	166	200	203	207	210	214	217	221	250	25
7328.504	150	158	166	200	203	206	209	212	215	218	242	25
7235.738	150	154	158	179	183	189	200	204	208	212	233	24
7142.972	150	153	156	167	170	178	185	191	200	205	222	23
7050.206	123	135	150	153	157	166	172	182	194	200	214	22
6957.440	121	126	133	138	143	150	155	170	185	192	204	22
6864.674	120	123	128	132	136	141	144	155	177	187	200	21
6771.909	118	121	127	131	134	139	143	150	172	181	191	20
6679.143	116	119	124	128	131	135	139	145	164	175	187	20
6586.377	115	118	122	126	130	134	137	143	162	172	185	20
6493.611	113	116	121	125	128	132	136	141	160	170	183	20
6400.845	111	114	119	123	127	131	134	140	158	166	177	19
6308.079	113	116	117	121	125	129	133	138	156	164	175	18
6215.313	115	118	119	121	124	128	131	136	154	162	172	18
6122.548	116	119	121	123	125	128	130	135	152	160	170	18
6029.782	118	121	122	125	127	129	131	133	150	157	166	17
5937.016	120	122	123	125	127	129	131	132	144	150	159	16
5844.250	121	124	125	126	127	129	131	132	138	143	152	15
5751.484	123	125	126	127	129	131	132	134	135	140	150	15

Unlike most spreadsheet style displays this one has the row and column values are not simple letters or numbers.

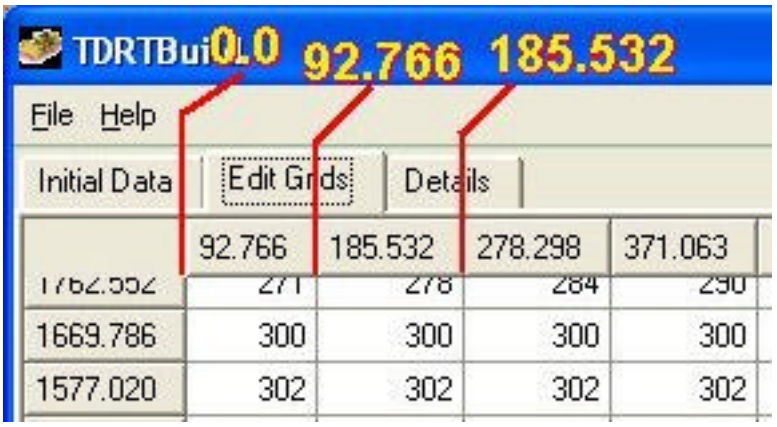
The top margin, (column headers) are distances from the left hand side, which starts at zero meters.
The left hand margin, (row headings), is similar in that it represents distances but from the bottom or last row entry.

The Zero point is in fact the point with a red cross I the following picture:



	92.766	185.532	278.298	371.063	463.829	556.595	649.361	742.127	834.893	927.659	1020.425	1113.190
1762.552	271	278	284	290	300	300	300	300	300	300	300	30
1669.786	300	300	300	300	302	302	302	302	302	302	303	30
1577.020	302	302	302	302	304	304	305	305	305	305	306	30
1484.254	305	305	305	305	306	306	307	307	308	308	309	30
1391.488	307	307	307	307	309	309	310	310	311	311	312	31
1298.722	310	310	310	310	311	311	312	312	313	313	315	31
1205.956	312	314	315	317	319	321	324	325	329	330	334	33
1113.190	315	316	318	320	323	325	329	330	334	336	341	34
1020.425	317	320	322	325	328	330	335	337	342	344	350	35
927.659	320	323	326	329	332	336	341	344	350	350	355	35
834.893	322	326	330	335	339	343	350	350	355	356	360	36
742.127	350	350	350	350	350	350	354	355	360	362	365	36
649.361	350	350	350	350	353	354	358	360	365	368	370	37
556.595	350	352	355	358	368	372	379	384	392	400	400	40
463.829	350	353	356	359	373	378	385	391	400	400	400	40
371.063	350	353	357	360	378	384	392	400	400	400	400	40
278.298	350	354	358	362	384	391	400	400	400	400	400	40
185.532	350	355	360	365	391	400	400	400	400	400	400	40
92.766	350	356	362	368	400	400	400	400	400	400	400	40

The next picture indicates d where the distance measurements relate with reference to cell boundaries.



Setting up the UTM with useful values helps in tracking anomalies from the ATF map to the values in the Edit Grids tab.

When the elevation data is first generated it is not always easy to find anomalies within the data set. Even in a small map as in this example of 7 Km by 5 Km there are 4,400 cells to inspect. With slightly bigger maps, 10 Km by 10 Km there are approximately 12,000 cells to inspect. The best time is after the ATF/AATF map has been built.

How to make changes:
The process is like most editing issues.

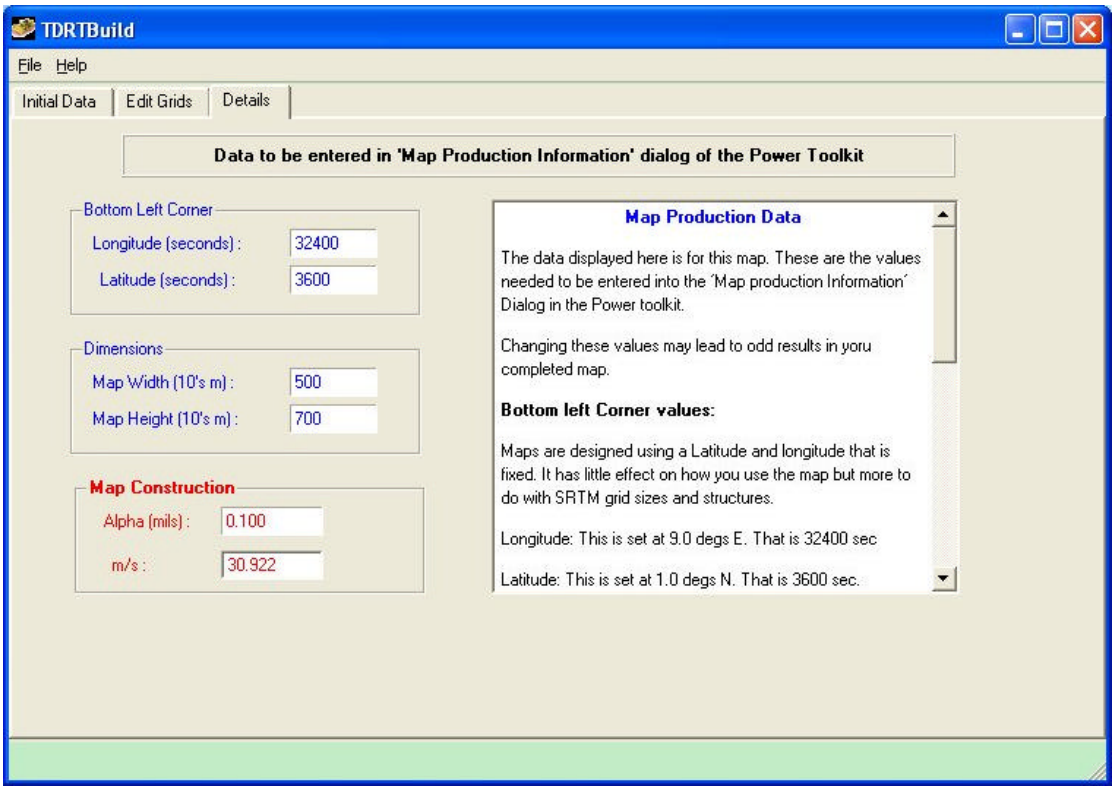
1. Select the cell to be edited. To select, click on the cell with the mouse pointer. When selected the cell will have a heavy border around it and the row and column headings will appear in a bold format.
2. Double click in the cell. The edit cursor will appear as a vertical line, to the right of the numeric value.
3. Edit the value, NO decimal values only whole numbers,(integers). Also make sure there are no spaces in your number. A space in the number will cause unpredictable results.
4. When finished making the edit press the <Return> or <Enter> key on your key board.

Saving edit changes:
Changes made in the grids are only within the grid and are not initially saved back to the data. This saving edits only carried out when you use the 'File->Save' or 'File->Save As' menus.

On selecting either the File->Save or File->Save As menus the data in the table is written to a ArcInfo ASCII Grid format file and a second file holding building details for the ATF/AATF Power Toolkit is also written.
Additional edits to value in the table will be written to the ArcInfo ASCII Grid format file PROVIDED the user SAVES the updates using the File->Save menu.

C. The "Details" Tab

The Details tab provides local or in program data that is used in eth Power Toolkit to build the ATF/AATF map.
The scroll window provides details on what the data is for and where it is used.



Some points to reiterate:

i. Latitude and Longitude
   Longitude: 9°.0 E = 3240”
   Longitude: 1°.0 N = 3600”

   The values are in seconds. These values are also needed when you use the DEMCON program.

ii. Dimensions
   These are the ones used initially in the TDRMSC program.

iii. Map construction values
   a. The Alpha value should be ZERO, but it appears that the Power Toolkit does not like a zero value. A slight shift in the Grid North to True North of 0.1 mils is not significant so that value is used. If one want to push the point try smaller values such as 0.01. I suspect the significance of such a change is close to immeasurable.

   b. The meters per Arc Sec value as provided, 30.922, is as accurate as possible for the Power Toolkit. Reducing this horizontal stretch even to 30.9 may cause a few rough edges on the right hand border. Increasing it to a value of 31 is a case of overstretch and will cause a few distortions.

BLUNT NOTE:
Use the values that are provided.

D. Saving the data to file.

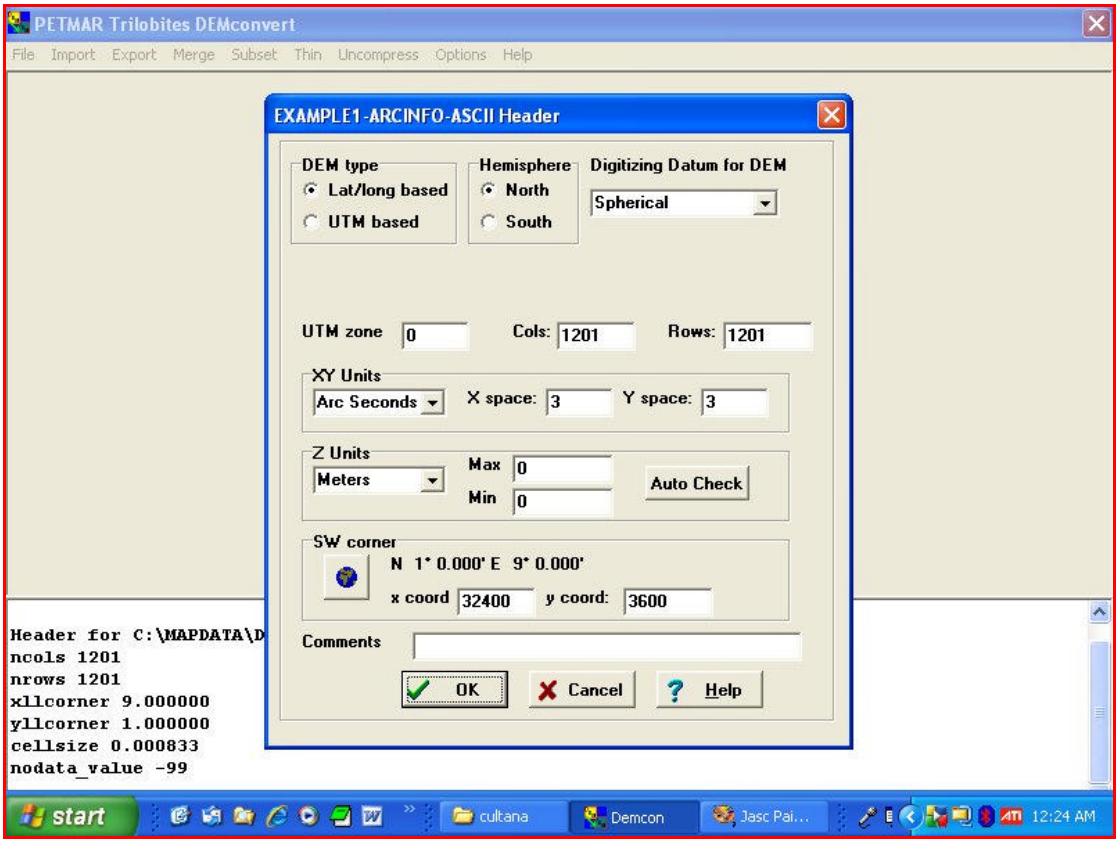
This is a simple case of using the File->Save As or File Save menus.
The default directoty for the two files generated will be the directory that the BMP map file is in.

The two file produced are called:
`<mapfilename>-arcinfo-ascii.asc` – holds the ArcInfo ASCII data to be used in DEMCON
`<mapfilename>-arcinfo-ascii-Build_Data.txt` – hold text information to enter into the Power Toolkit when building the ATF/AATF map.

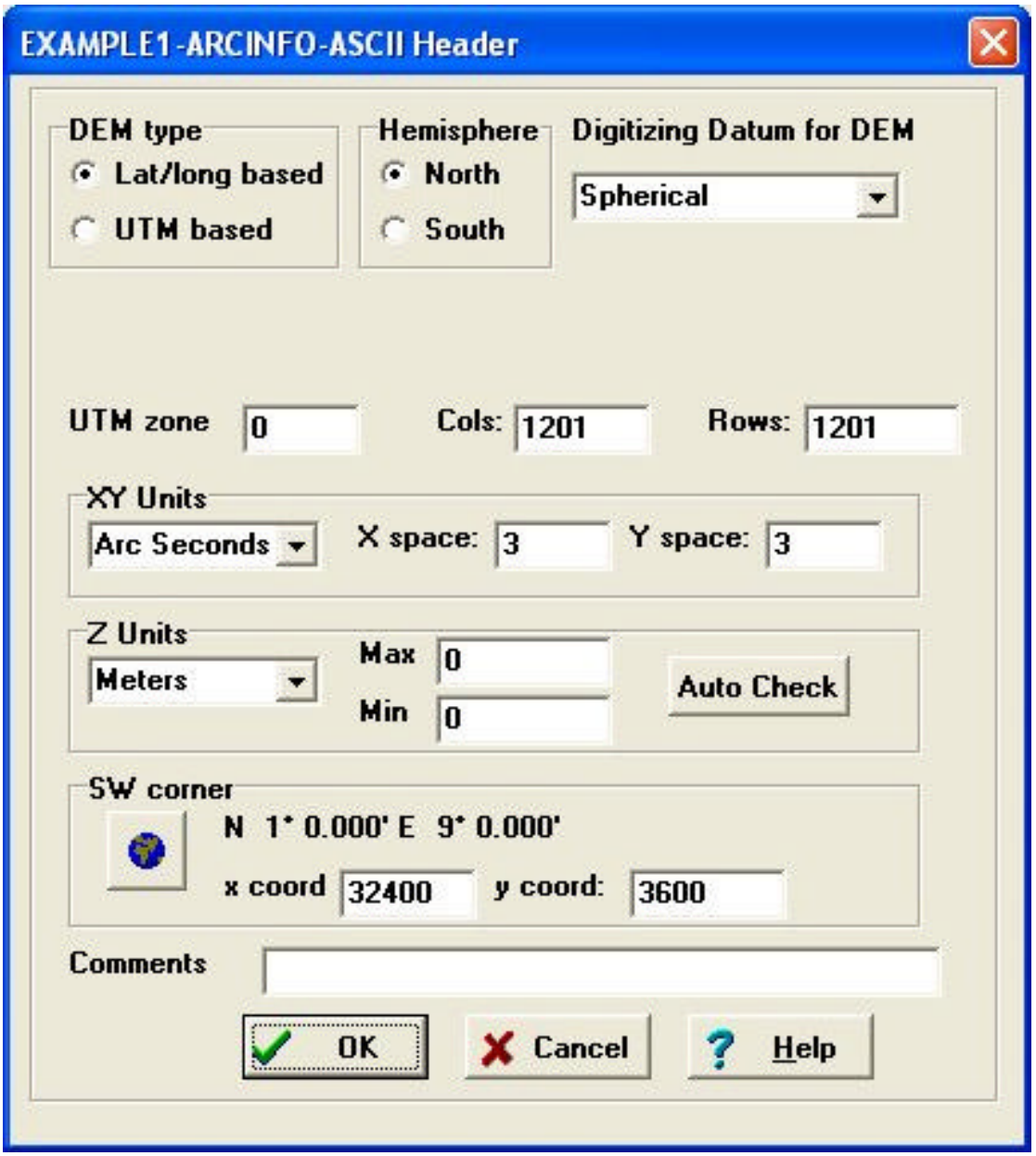
STEP 5 – Using the program DEMCON.

The following is a brief run through using DEMCON and values to be used in DEMCON for maps built using TDR TBuild.

Open DEMCON,
To load the file Example1-arcinfo-ascii.asc
Select **Import->ASCII Arc Grid** menu.
From the open file dialog navigate to where the file **`Example1-arcinfo-ascii.asc`** is located and select it. Then click on the open button.
When asked if the data is UTM select **No**.
The next will be a multiplier. Unless you want to exaggerate the elevations and get mountains from mole hills, set this **Z value to 1**.
You will now get the following dialog



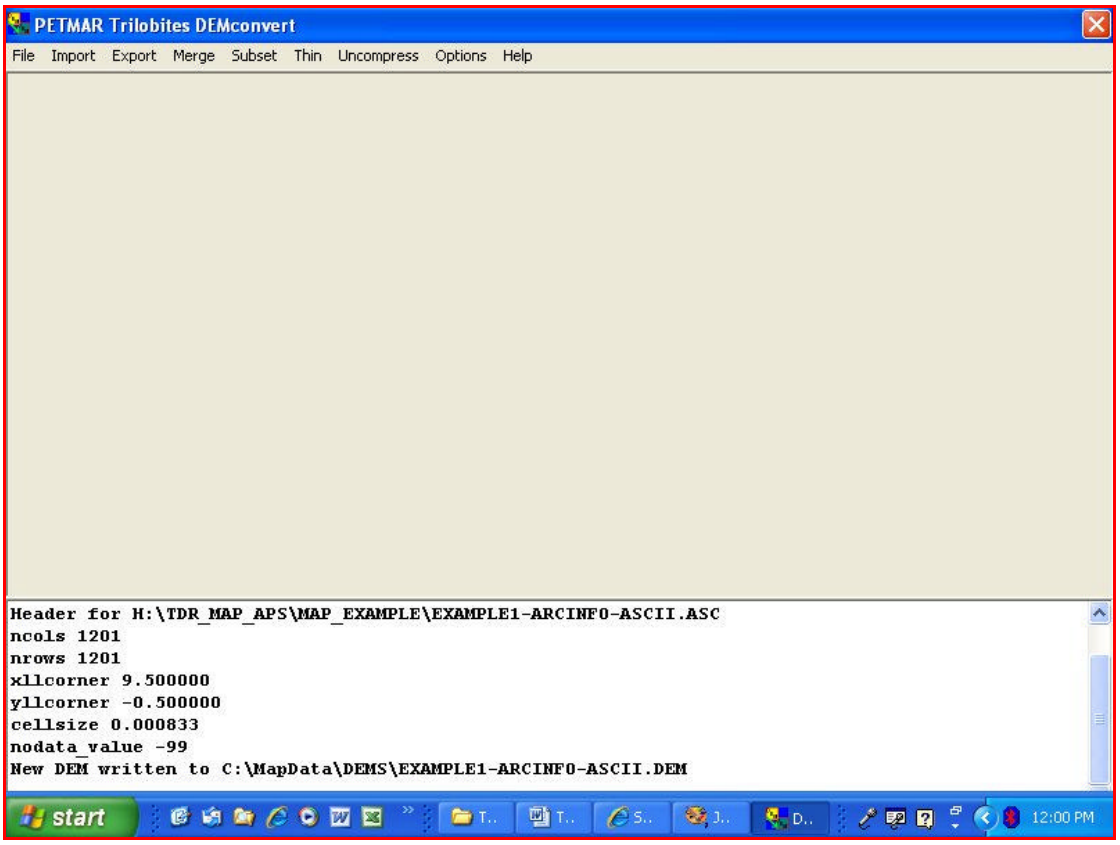
Some points about this.
When you run DEMCON the dialog should have the same values as the above.



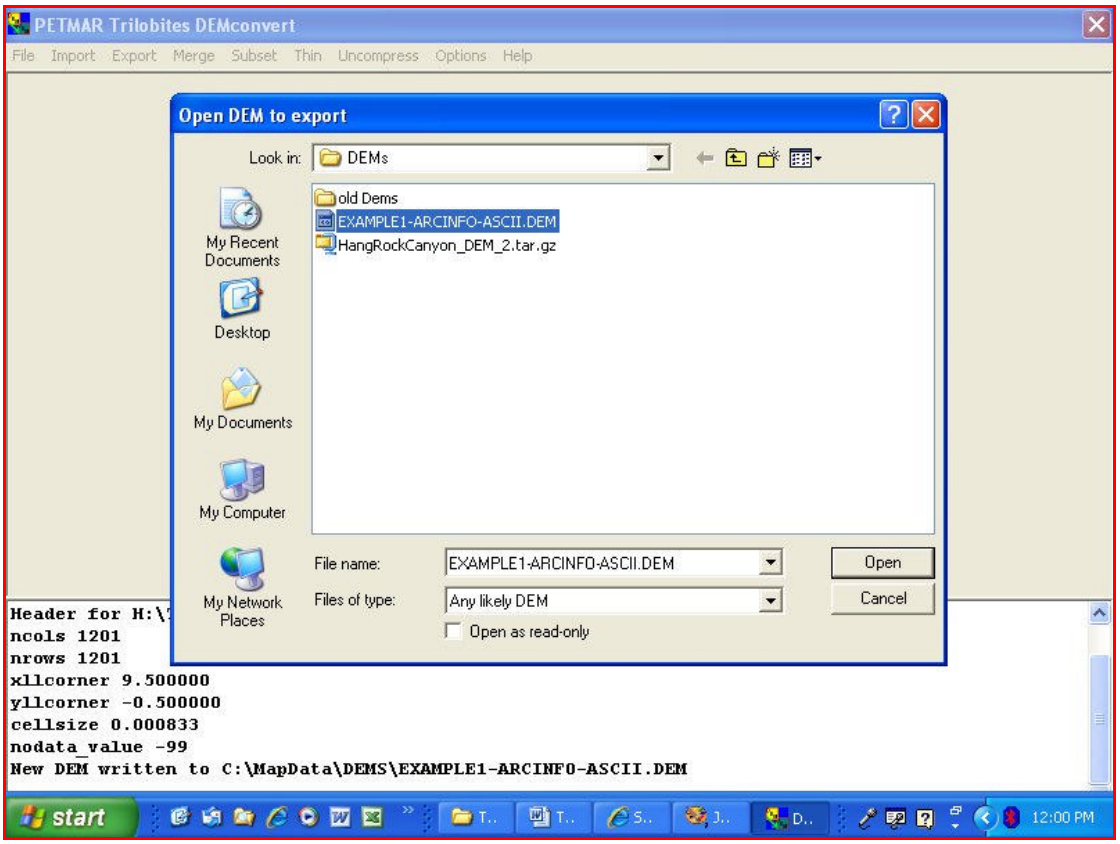
Large view of the Dialog

Now click on **OK** to close the dialog.

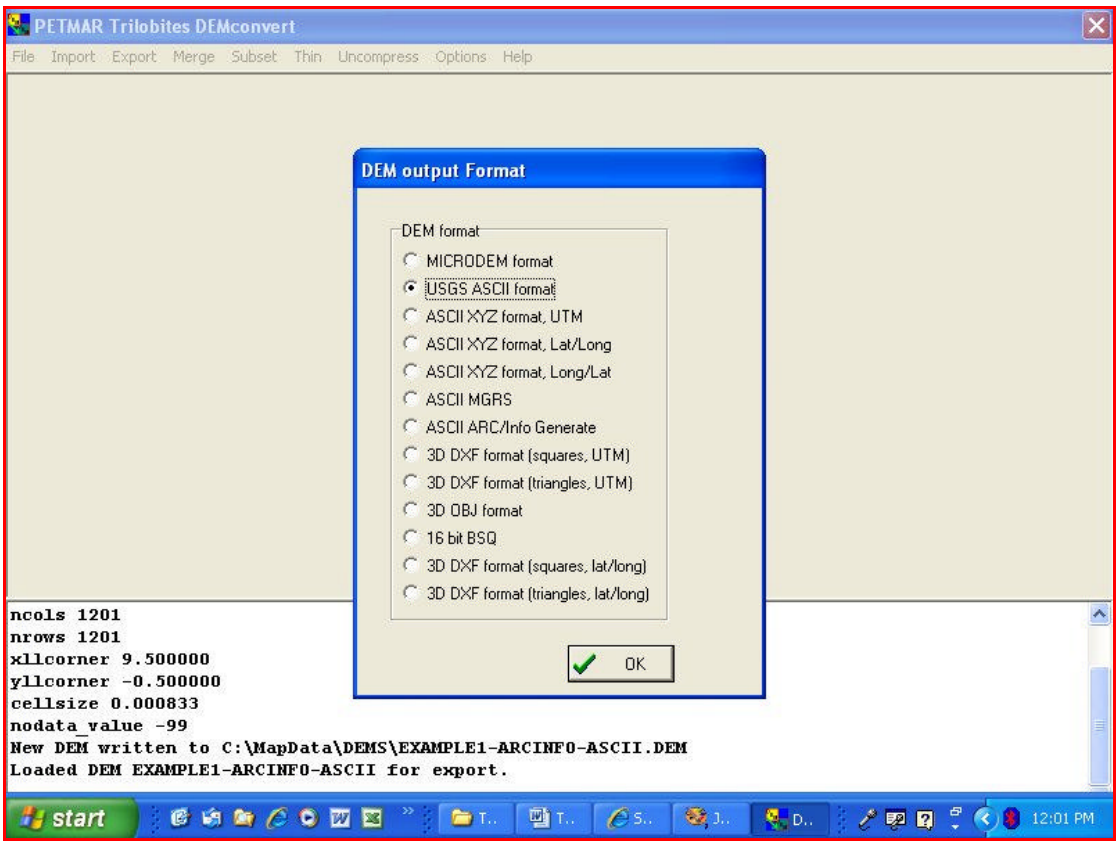
To the message "**Feet input**" select **No**.
At the next message click OK and close the Dem.
You should have something like the following, directories may be different.



Now select **Export->Dem** This will/should default to the directory C:\MapData\DEMs.
Select your new DEM. It will be called "**EXAMPLE1-ARCINFO-ASCII.DEM**.
Once the file is selected press the OPEN button.

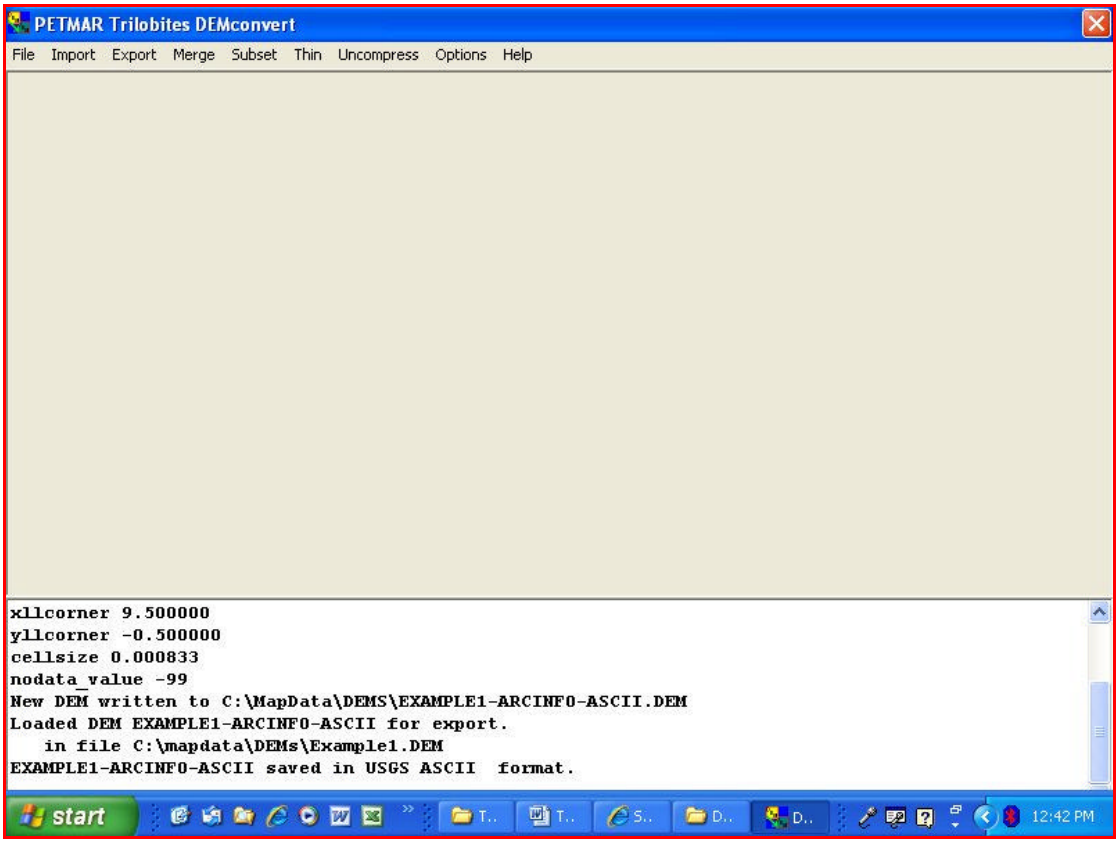


A dialog will appear
Select the output format of USGS ASCII Format.



Select Ok and provide a new name for this export dem. Do not use the same file name. Writing over the old file may cause problems.

In this example I will use the name **`Example1.DEM`**.

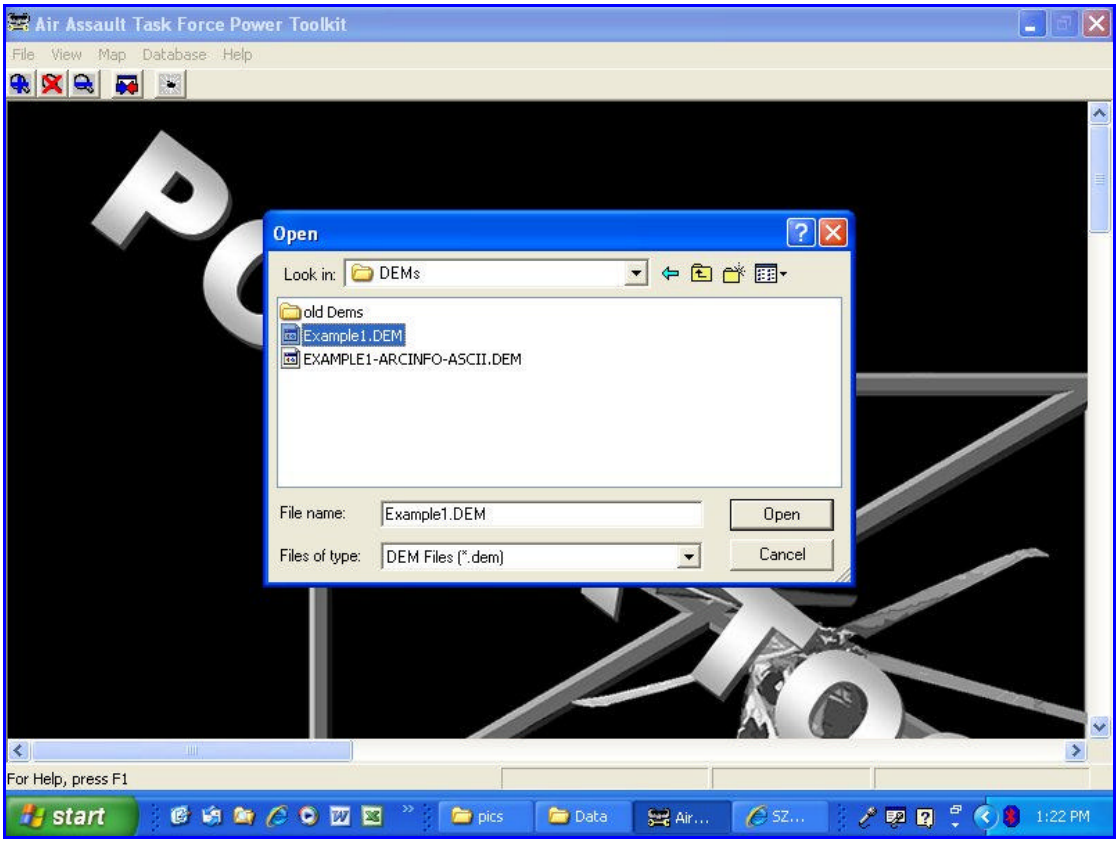


The dem file is now ready to load into the ATF/AATF power Toolkit.

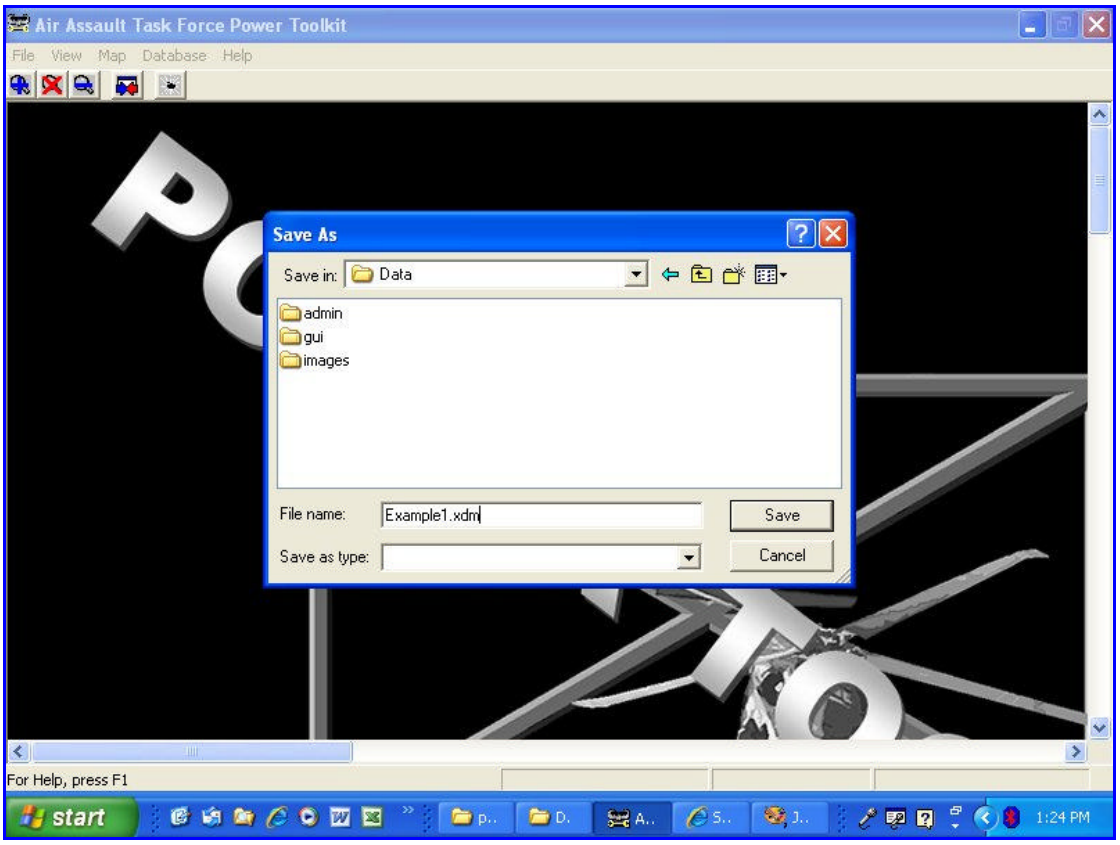
STEP6 – The Power Toolkit

Open the power tool kit and load the dem created by DEMCON, in this case the Example1.DEM. You need to load the USGS ASCII dem file. The Example1.dem is in the directory C:\MapData\DEMs

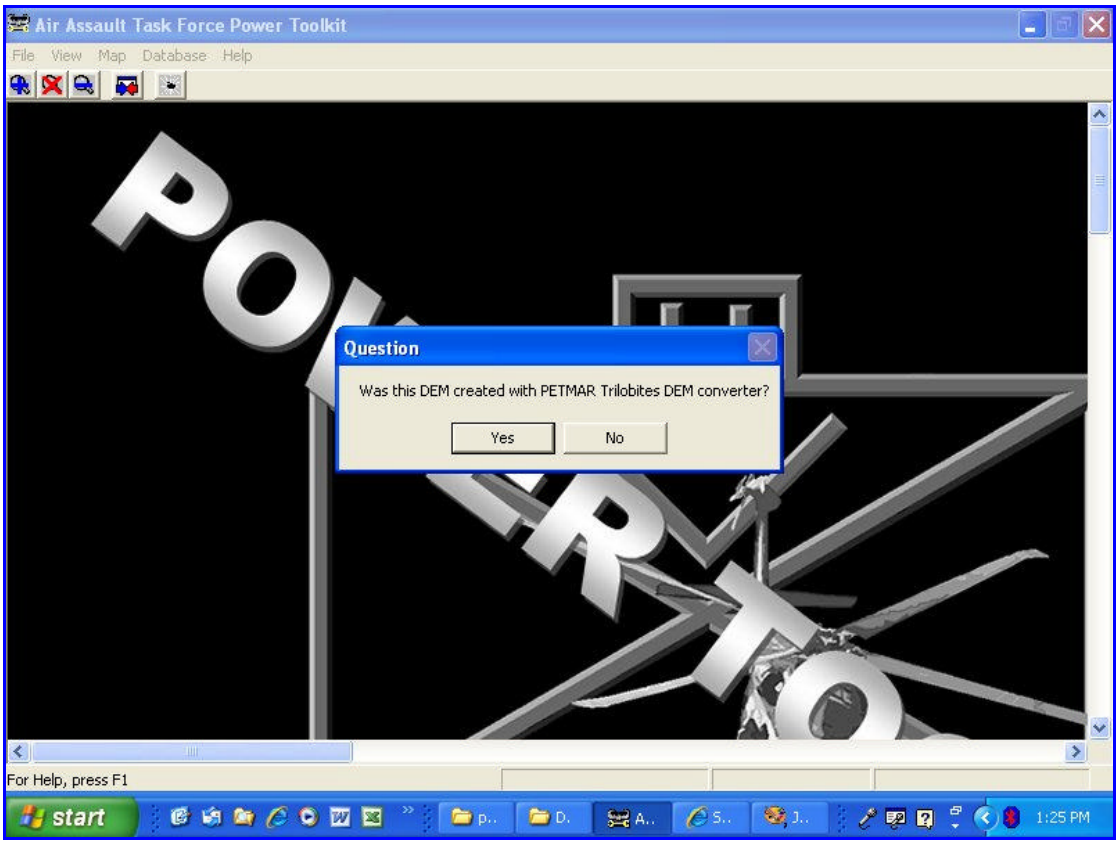
To do this, select the "**Map->New->New Elevation Map**" menu
Also set the file filter to '`*.dem`' not '`*.xdm`'.



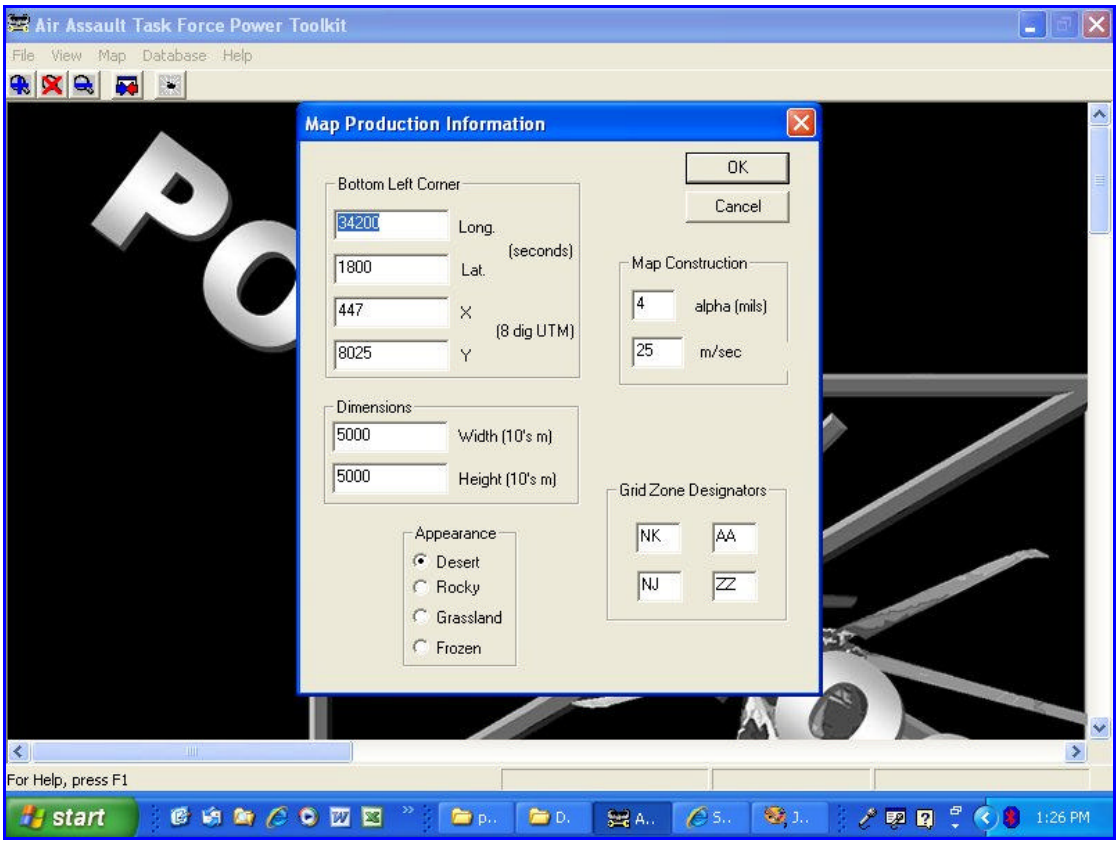
Save the file as an `.xdm`. Also save the `.xdm` file in the **data directory in the ATF/AATF game directory**.



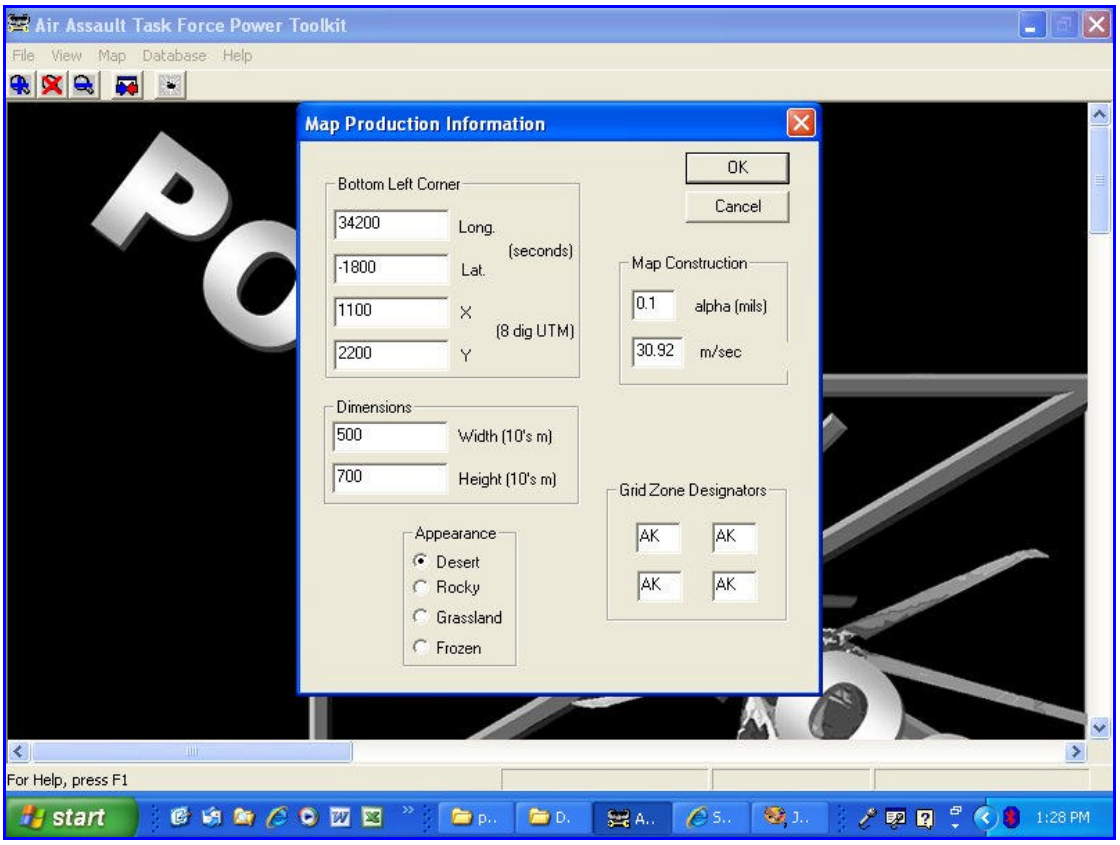
To this message respond with Yes.



The next dialog will be the map Production Dialog.
The two boxes, Lat and Long should have the correct lat and long values. If not correct them.

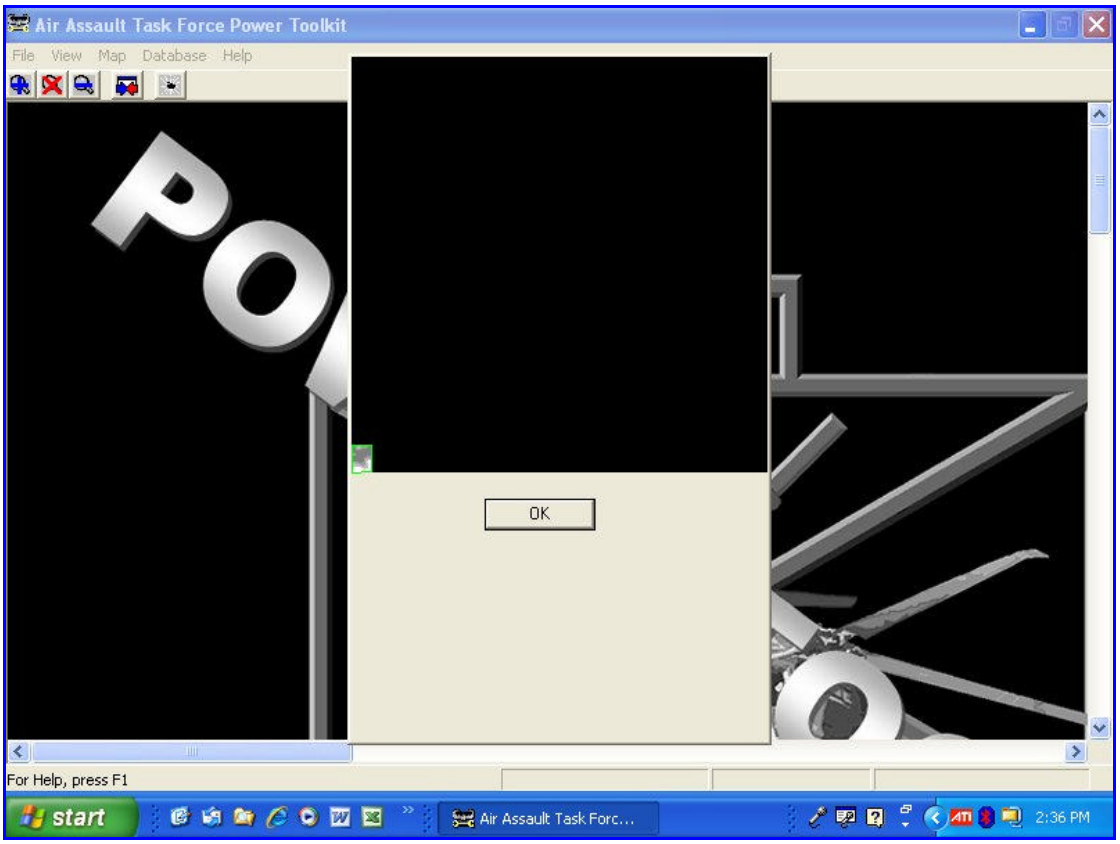


This should to be completed as per the next picture.



A few points here:
The grid zones should all be the same unless you want the map to cross zones.
The UTM values I used are simple enough to be able to translate in to values to track any anomalies back to eh “Edit Grids” table in TDR Tbuild.

When the dilog is complete click on Ok and you will get the next dialog:



If for some reason there is not a green outline on the map just click on the little map bit and it should get a green outline. This has more to do with the Power Toolkit than anything else.

The rest of the material in building a ATF/AATF map is covered in the tutorial "How to Create a New Map" found at
http://www.prosimco.com/atf/tutorial/5_new_map.htm

MICRODEM

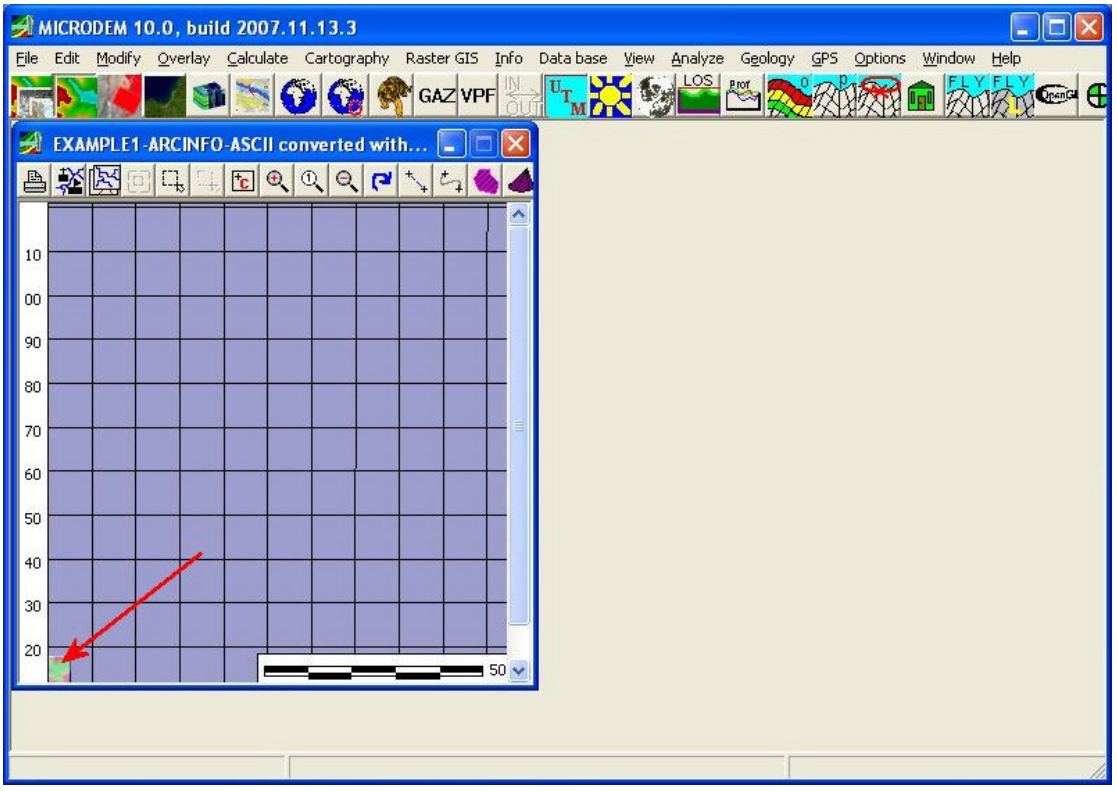
The DEM you create with DEMCON is a USGS ASCII DEM and can be opened with a program called Mirodem. Microdem and DEMCON are made by the same person.

Microdem can be obtained at the following web site:
http://www.usna.edu/Users/oceano/pguth/website/microdem.htm

Note:

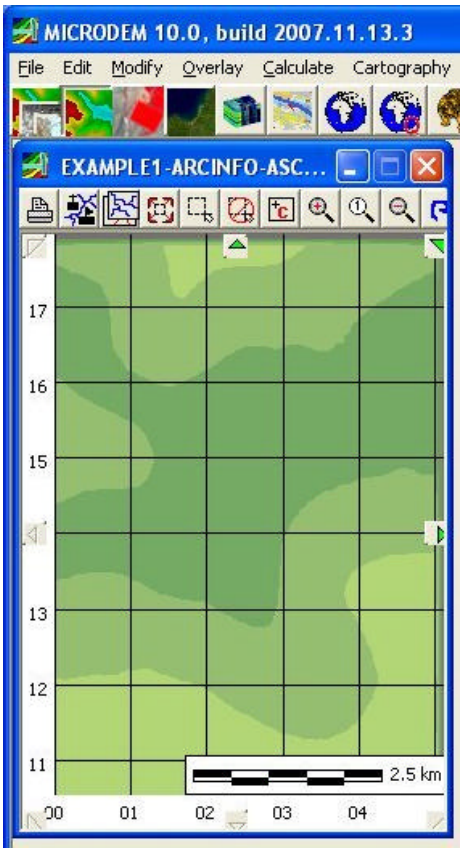
Microdem will not open an arcinfo-ascii format file.

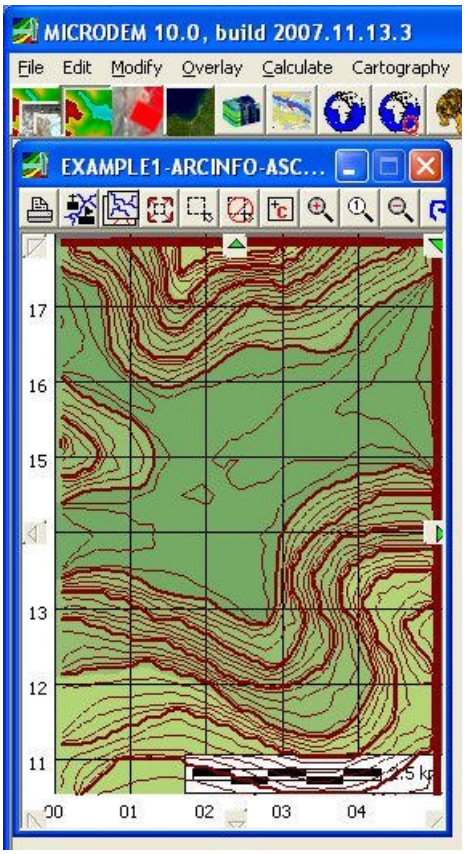
Microdem is handy to look at your map before you load it all through the Power Toolkit.
I will not give a run down on how to use the program but just provide some views to help show it usefulness to map building.

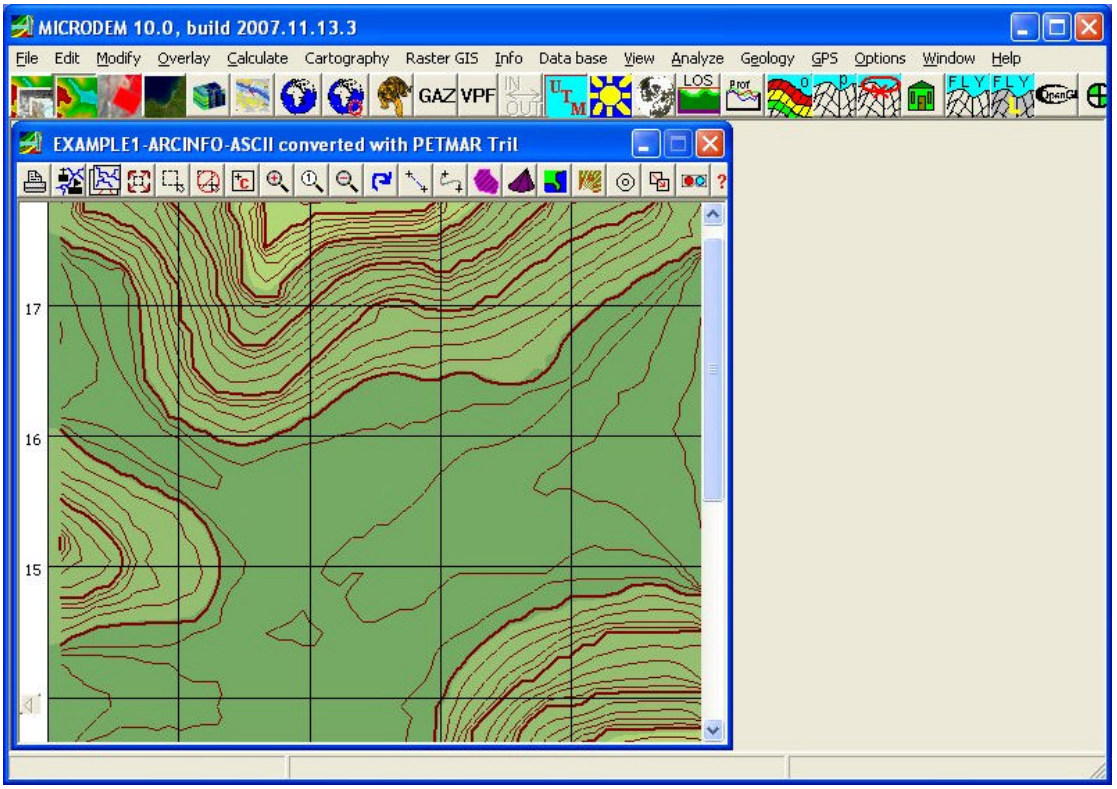


The above picture shows the screen after loading your created DEM. The large amount of blue is the empty section of the file. Down in the bottom left corner is the actual elevation map you created.
To see it you will have to magnify the image, use the magnify glass icon in the menu. It has a red plus sign in it, “Zoom In”.

You can change the elevation display colours and also display contour line.







To Do List:

Like all things there is still a small to do collection.

1. Provide for SEA/beach/shore lines. These are somewhat integrated.

2. Provide a save of the generate elevation data so it can be reloaded and as a minimum edited in the Edit Grids tab.

3. Remove the bulky DLL and a probable update to the interface.

There are possibly a few other things that can be added but much will depend on the use of the programs.

The program has the potential to deliver a range of mapping goodies to help in making ATF./AATF maps. How far it is developed depends on users and their needs.

14/08/2008