



Converting MDB into MTX

By Ivan Isaak

Recently I've received a question about how an MDB file can be converted into the matrix inside HYPACK®. The MDB is the Microsoft Data Base format and it is used in the Microsoft Access program. It is compatible with Excel.

MDB TO XYZ

1. **Open the MDB file in Excel.**
2. **Delete unnecessary columns.** We'll need just three: Lat/Lon/Depth.
3. **Delete the first row with the column headers** (Lat/Lon/Depth).

FIGURE 1. Preparing the Database—Before (left) and After (right)

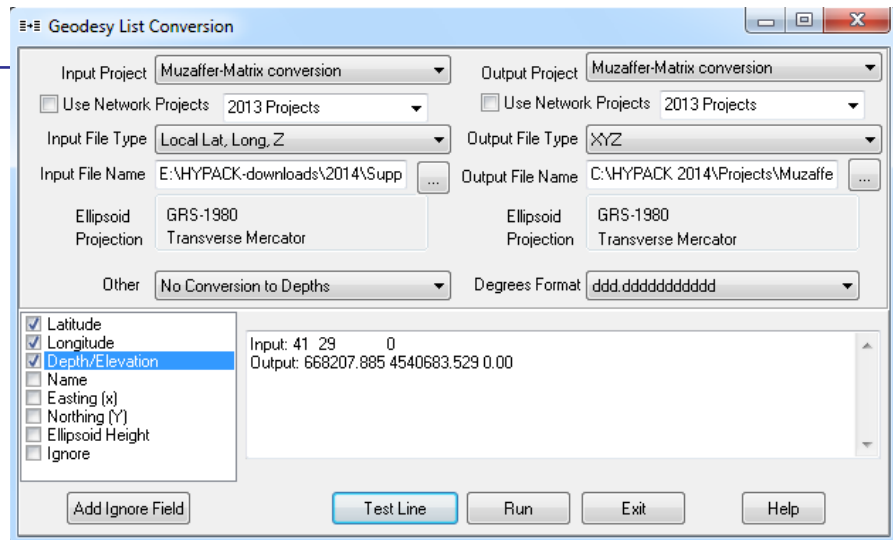
	A	B	C	D	E	F	G	H
1	lat	lon	alt	speed	gpstime	systime	depth	temp
2	41	29	0	0	1/1/2001	10/9/2008	0	28.5
3	41	29	0	0	1/1/2001	10/9/2008	0	28.5
4	41	29	0	0	1/1/2001	10/9/2008	0	28.5
5	41	29	0	0	1/1/2001	10/9/2008	0	28.5
6	41.001558	29.001987	0	0	1/1/2001	10/9/2008	0	28.5
7	41.003107	29.003677	0	0	1/1/2001	10/9/2008	0	28.5
8	41.005068	29.006607	0	0	1/1/2001	10/9/2008	0	28.5
9	41.008166	29.009152	0	0	1/1/2001	10/9/2008	0	28.5
10	41.010272	29.012207	0	0	1/1/2001	10/9/2008	0	28.5
11	41.012707	29.014947	0	0	1/1/2001	10/9/2008	0	28.5
12	41.015993	29.017829	0	0	1/1/2001	10/9/2008	0	28.5
13	41.019222	29.020809	0	0	1/1/2001	10/9/2008	0	28.5
14	41.022084	29.022795	0	0	1/1/2001	10/9/2008	0	28.5
15	41.025169	29.025738	0	0	1/1/2001	10/9/2008	0	28.5
16	41.02755	29.029796	0	0	1/1/2001	10/9/2008	0	28.5
17	41.030087	29.031924	0	0	1/1/2001	10/9/2008	0	28.5
18	41.032158	29.035119	0	0	1/1/2001	10/9/2008	0	28.5

	A	B	C
1	lat	lon	depth
2	41	29	0
3	41	29	0
4	41	29	0
5	41	29	0
6	41.001558	29.001987	0
7	41.003107	29.003677	0
8	41.005068	29.006607	0
9	41.008166	29.009152	0
10	41.010272	29.012207	0
11	41.012707	29.014947	0
12	41.015993	29.017829	0
13	41.019222	29.020809	0
14	41.022084	29.022795	0
15	41.025169	29.025738	0
16	41.02755	29.029796	0
17	41.030087	29.031924	0
18	41.032158	29.035119	0
19	41.03659	29.038491	0
20	41.038369	29.040907	0
21	41.041091	29.043729	0

4. **Save the data as a tab-delimited text file.**
5. **In HYPACK®, select UTILITIES – GEODESY – GEODETIC LIST CONVERSION and enter your conversion settings:**

FIGURE 2. Geodesy List Conversion

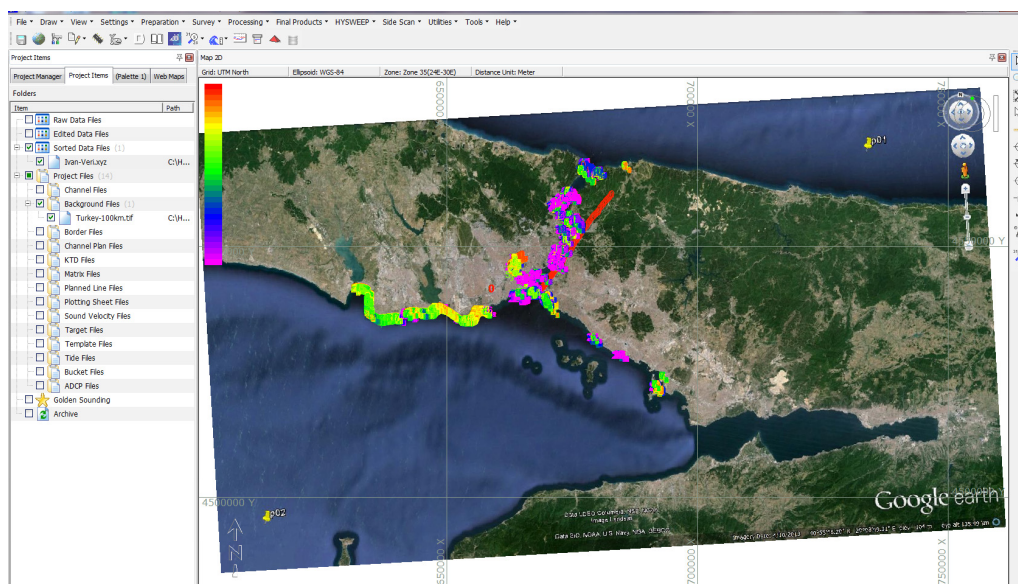
- **Input Project and Output Project:** Select a working project.
 - **Input File Type:** Select the correct type (Local Lat, Lon, Z in this case).
 - **Output File Type** is XYZ.
 - **Degrees Format:** In this case, it is ddd.ddddd.
 - Check **Latitude**, **Longitude** and **Depth** in the list of items in the table to the left and move them as shown with the left click and drag.
6. Click **[Test Line]** to see if the settings are correct.
 7. Click **[Run]** to perform conversion. Program should show the number of lines converted.
 8. **Enable the resulting XYZ file in the project** and verify it is in correct location.



CLIPPING THE XYZ TO FIT YOUR PROJECT AREA

1. **Clip to fit your area of interest, if necessary.** In this case, an XYZ file covers almost all of Bosphorus and parts of the Mediterranean North coast of Turkey. I think it is too much. For example, you will perform a dredging in this small area.

FIGURE 3. Clipping the XYZ to your Area of Interest



2. **Clip the XYZ data to the area of interest.**
 - a. **Zoom to the area of interest.**
 - b. **In the BORDER EDITOR, create a border file to fit your project area.**

FIGURE 4. Creating the Border File

- i. Click a series of waypoints to define the area perimeter.
 - ii. Right-click inside the polygon.
 - iii. Save the border file (*.BRD).
- c. **Right-click on the XYZ file in the list and select “Clip to Border File” option.**

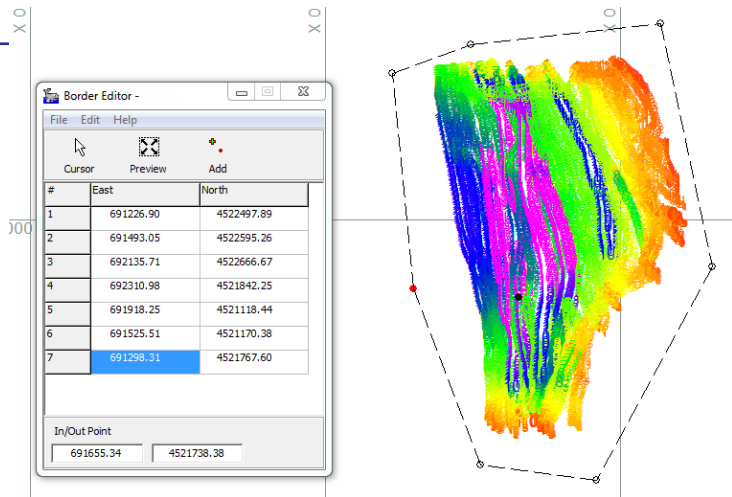
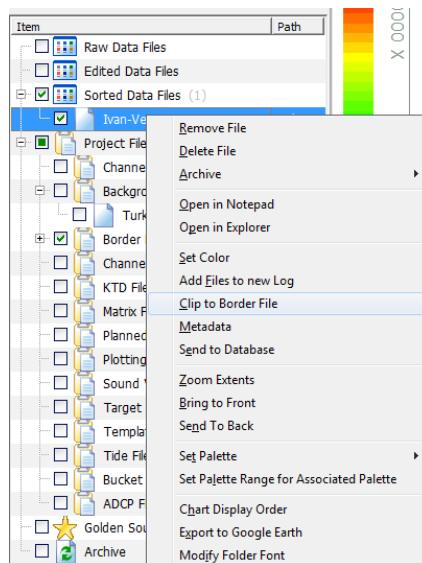


FIGURE 5.

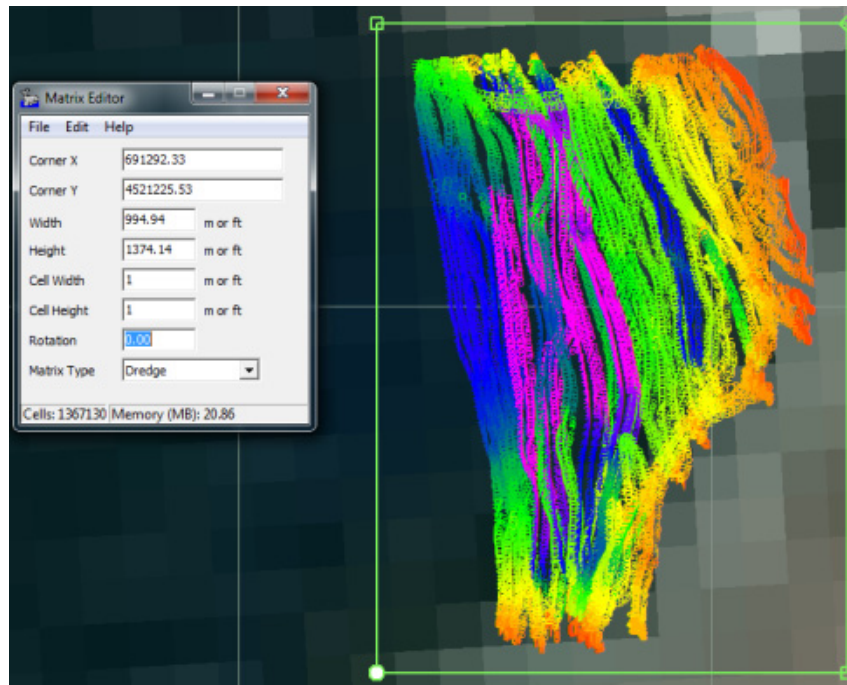


- d. **Save the new XYZ file.**

XYZ TO MTX

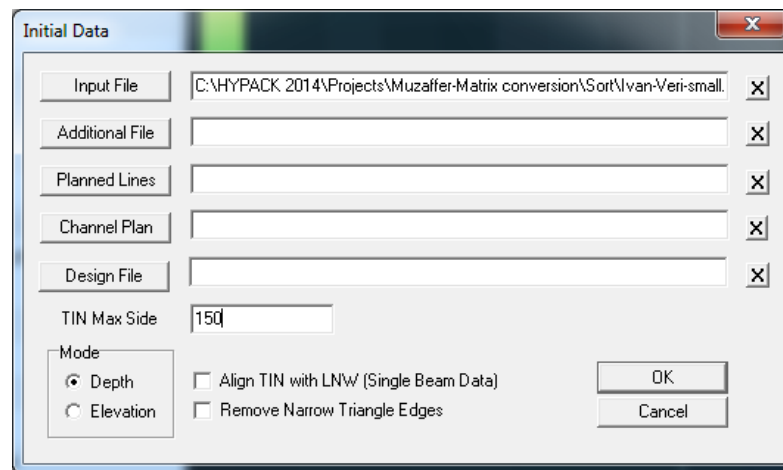
1. **Use the MATRIX EDITOR to create an empty matrix in the area.**

FIGURE 6. *Creating a Border Around your Project Area*



2. **Use TIN MODEL to create a model of the XYZ data.**
 - **Input File:** The XYZ file.
 - The **TIN Max Side**, in this example, it is 150 meters.

FIGURE 7. *Generating a TIN Model of your XYZ Data*



3. **Check the 3D Model.** Open one of the 3D Model windows in TIN MODEL to verify the model accurately represents your dataset.

FIGURE 8. The 3D Color Solid Model Shows no Gaps or Joined, but Unrelated Points

4. **Export the model to a matrix file.**

- Select EXPORT-MATRIX.
- Click [Input Matrix] and set empty matrix.
- Set cell size (small matrix, 1m is good).
- Click [Output Matrix] and give the new, filled matrix a name.
- Click [Export] and see how the program fills it.

Tip: If the matrix is big, it may take too much time to wait to draw it on the screen. In this case, **deselect** the **Show Picture** option.

FIGURE 9. Exporting the TIN Data to an XYZ File

