

Two more file formats into HYPACK

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During the past few months, two new file formats have been added, allowing you to process these third party file formats. HYPACK® can now handle LAS data, converting it to XYZ. It can also extract SegY data from a JSF file.

LAS PROCESSING

LAS format data stores 3-dimensional point cloud records from LIDAR sensors. The data will generally be put into this format from software provided by sensor hardware.

In a program called HYPACK® Utilities, there is an option to extract XYZ data from LAS data files. This will allow you to use MBMAX, or CLOUD to edit and view the data, and TIN MODEL to create contours.

To get the XYZ files:

- 1. **Run the HYPACK Utility program.** Found in the HYPACK® install folder, it is run as an external program through the Tools menu.
- 2. Add files to the project. This can be done using the Add button, and browsing for files. Currently, the program can handle the LAS 1.2 files. (Alternatively, you can open the Windows® Explorer, find the files you want, and drag & drop them onto the project window.)
- 3. Select one or more files and the operation buttons will be enabled.
- 4. **Click the button for the operation you wish to perform.** In this case, select LAS to XYZ. There are no settings needed for this operation. The output file has the same name as the input file, with the XYZ extension.

FIGURE 1. HYPACK® Utility Program

| 🔏 Untitled - HypackUtility | Apple allow allows. | |
|-----------------------------|-------------------------|--------------|
| File Edit View Help | | |
| D 🞽 🖬 🖇 ь 🛍 🖨 🎯 🗸 | | |
| Files in project | | |
| C:\data\LAS\2398_400.las | XYZUtil | XYZSelect |
| | | |
| | Data Extract | LAS to XYZ |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 1 | | |
| Add Remove Select All Clear | | |
| Ready | | CAP NUM SCRL |

A dialog box to shows the status of each line, and any errors that are seen inside the file.

FIGURE 2. The Operation Results shows the status of each line and any errors.

| Operation results | × |
|--|-------------------|
| 1 successful; 0 errors | |
| Successfully extracted LAS data from file 'C: \data\LAS\2398_400.las' and wr | ote to 'C:\data\L |
| ₹ <u></u> ₩ | Close |

A space delineated XYZ file is created. Note the negative sign of the Z value.

293999.950000 3219406.510000 -25.550000 293999.900000 3219406.560000 -25.530000 293999.770000 3219406.670000 -25.530000 293999.720000 3219406.710000 -25.530000 A few images of LAS data:





FIGURE 4. TIN MODEL with Contours



FIGURE 5. Beach Profile, seen in CLOUD. (Note the small feature by the shore. It is 1.8 meters high. Perhaps someone walking on the beach).



SUB-BOTTOM PROCESSING

The other new feature is building on our Sub-Bottom processing. The data input for the SUB-BOTTOM PROCESSING program (SBD.exe) is a SegY file, generated by HYPACK® during data acquisition. Recently added is the ability to extract SegY data from a JSF file and import these files directly into the SUB-BOTTOM PROCESSING program.

The JSF file can store side scan, sub-bottom and bathymetry. The HSX Converter can now handle the sub-bottom portion. (The side scan and bathymetry have been done for a while now.) Testing is still being done, and the updated dll will be available next month.

FIGURE 6. Sub bottom data extracted from a JSF file and shown in HYPACK Subbottom processing program

