NAME

mb7k2jstar – extracts subbottom profiler and/or sidescan sonar data from Reson 7k format data files into Edgetech Jstar format data files.

VERSION

Version 5.0

SYNOPSIS

mb7k2jstar [**–I***file* **–A***type* **–B***bottompickmode/bottompickthreshold* **–C** **–F***format* **–L***startline/lineroot* **–M** **–O***outfile* **–R***routefile* **–X** **–H** **–V**]

DESCRIPTION

MB7k2jstar is a utility that extracts Edgetech subbottom profiler and sidescan data from Reson 7k format (MBIO format 88) data and outputs in the Edgetech Jstar format (MBIO formats 132 and 133). By default, **mb7k2jstar** extracts all channels of sonar data from the Reson 7k file to the Edgetech Jstar file. Edgetech sonar systems may include dual frequency sidescans and a subbottom profiler. Users may use the **–A** option to specify which channels are extracted. **MB7k2jstar** operates on single input files or on datalists. By default there will be a separate output file for every input file, but if the **–O** option is used to specify an output file, data from all input files will be directed to that single output file.

The extracted Jstar data file(s) can be organized three ways. If the **–O** option is used to specify a single Jstar output file, then all of the Jstar data will be output to that single file. If the **–R** option is used to specify a survey route file that includes the waypoints covered while collecting the data file(s) referenced by **–I***file*, then the output Jstar data will be broken up by the sequential lines defined by the waypoints. In this case each output Jstar file will be named using the line root name specified by **–L***startline/lineroot* with a sequential line number starting from *startline*. If neither the **–O** or **–L** options are used, each input swath file will have a corresponding Jstar output file.

When the user specifies that all Edgetech sidescan and subbottom data be extracted but does not specify the output file name, the output files will have the "*.jsf" suffix recognized by Edgetech software. If the **–A***1* option is used to specify that only low frequency sidescan be extracted, the output files will have an "*.mb132" suffix. If the **–A***1* option is used to specify that only high frequency sidescan be extracted, the output files will have an "*.mb133" suffix.

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OPTIONS

–A *mode*
This option sets the types of data to be extracted and output. If **–A***1* is given, then any low frequency sidescan in the input will be extracted to the output. If **–A***2* is given, then any high frequency sidescan records are extracted. The **–A***3* option causes subbottom profiler records to be extracted. Default: All Edgetech sidescan and subbottom profiler records are extracted.

–B *bottompickmode/bottompickthreshold*
This option sets the source of the sonar first arrival time embedded into the Jstar format trace headers. This value can be used for laying out sidescan on the seafloor. If *bottompickmode* = 1, then **mb7k2jstar** will use the altitude value associated with platform navigation. If *bottompickmode* = 2, then **mb7k2jstar** will extract the first arrival time from multibeam bathymetry in the 7k data stream. If *bottompickmode* = 3, then **mb7k2jstar** will pick the first arrival time in the sidescan

sonar data by looking for the first sample with an amplitude > *bottompickthreshold* times the maximum amplitude in the trace. Default: *bottompickmode* = 1.

–C
This option causes **mb7k2jstar** to print out any comment records encountered in the input Reson 7k data.

–F *format*
Sets the data format used if the input is read from stdin or from a file. If *format* < 0, then the input file specified with the **–I** option will actually contain a list of input swath sonar data files. This program only reads Reson 7k format data files (**MBIO** format 88).

–H This "help" flag cause the program to print out a description of its operation and then exit immediately.

–I *infile*
Sets the input file path. If *format* > 0 (set with the **–f** option or **mbdefaults**) then the swath sonar data contained in *infile* is read and processed. If *format* < 0, then *infile* is assumed to be an ascii file containing a list of the input swath sonar data files to be processed and their formats. The program will read the data in each one of these files. In the *infile* file, each data file should be followed by a data format identifier, e.g.:

    datafile1 88
    datafile2 88

This program only reads Reson 7k format data files (**MBIO** format 88).

–L *startline/lineroot*
This option sets the starting line number and the output filename root used when **–R** is specified so that data are output according to planned survey lines. Default: *startline* = 1; *lineroot* = "jstar".

–M
This option causes **mb7k2jstar** to omit data during turns when extracting into line files according to a specified set of waypoints (**–R** option). The traces will not be output until the heading is within 15 degrees of the next survey line's bearing.

–O
This option sets the output Edgetech Jstar (**MBIO** format 132/133) format file path. If **–O** is not invoked, the output jstar filename (or files if a datalist is being processed) will be the input swath filename with the ".s7k" or ".mb88" suffix replaced by a new suffix. An ".jsf" suffix is used when all Edgetech record types are extracted to the output, ".mb132" is used when the low frequency sidescan records are extracted, and ".mb133" is used when the high frequency sidescan records are extracted. The record types to be extracted are set using the **–A** option.

–R *routefile*
This option specifies an **mbgrdviz** route file containing the intended waypoints of the survey. If *routefile* is specified, **mb7k2jstar** will output Jstar data in files corresponding to the planned survey lines. The output Jstar file names will be based on *lineroot* and will include the line number starting with *starline*, both of which are specified using the **–L** options. If neither **–O** nore **–R** are invoked, the output Jstar filename (or files if a datalist is being processed) will be the input swath filename with an appropriate suffix appended (".jsf" for mixed Jstar files, ".mb132" for low frequency sidescan only files, and ".mb133" for high frequency sidescan only files).

–V This option increases the verbosity of **mb7k2jstar**, causing it to print out messages regarding its progress to stdout.

–X This option switches port and starboard sidescan channels.

EXAMPLES

Suppose that one has collected a Reson 7k datafile incorporating multibeam sonar data, sidescan data, and subbottom profiler data, and that the filename is:

    20050418_150155.s7k

In order to extract all of the Edgetech sonar data into a Jstar file, one can use **mb7k2jstar** with no special arguments:

mb7k2jstar –I 20040722_152111.s7k

which yields the following output:

```
Data records read from: 20050418_150155.s7k
     Survey:        990
     File Header:   1
     Bluefin CTD:   989
     Bluefin Nav:   760
     Subbottom:     989
     Low Sidescan:  990
     High Sidescan: 989
Data records written to: 20050418_150155.jsf
     Subbottom:     989
     Low Sidescan:  990
     High Sidescan: 989
```

One may also extract just the low frequency sidescan by using the **–A***1* option:

mb7k2jstar –I 20040722_152111.s7k –A1

which yields the following output:

```
Data records read from: 20050418_150155.s7k
     Survey:        990
     File Header:   1
     Bluefin CTD:   989
     Bluefin Nav:   760
     Subbottom:     989
     Low Sidescan:  990
     High Sidescan: 989
Data records written to: 20050418_150155.mb132
     Subbottom:     0
     Low Sidescan:  990
     High Sidescan: 0
```

One may also extract just the high frequency sidescan by using the **–A***2* option:

mb7k2jstar –I 20040722_152111.s7k –A2

which yields the following output:

```
Data records read from: 20050418_150155.s7k
     Survey:        990
     File Header:   1
     Bluefin CTD:   989
     Bluefin Nav:   760
     Subbottom:     989
     Low Sidescan:  990
     High Sidescan: 989
Data records written to: 20050418_150155.mb132
     Subbottom:     0
     Low Sidescan:  990
     High Sidescan: 0

2527 records output to segy file 20040722_154429.s7k.segy
```

Users may process multiple Reson 7k files by inputting a datalist, or list of swath data files. All of the extracted data records can be output to a single file by specifying the output file with the **−O** option. For example, if one has a datalist file called datalistp.mb-1 that references three Reson 7k files:

    20050418_150155p.mb88 88
    20050418_151812p.mb88 88

and one wants all the low frequency sidescan data collated into a single Jstar data file called 20050418_sslow.mb132, then use the following command:

    mb7k2jstar −A1 −I datalistp.mb-1 −O 20050418_sslow.mb132

which yields the following output:

```
Data records to extract:
    Low Sidescan

Data records read from: 20050418_150155p.mb88
    Survey:         990
    File Header:    2
    Bluefin CTD:    989
    Bluefin Nav:    760
    Subbottom:      989
    Low Sidescan:   990
    High Sidescan: 989
Data records written to: 20050418_sslow.mb132
    Subbottom:      0
    Low Sidescan:   990
    High Sidescan: 0

Data records read from: 20050418_151812p.mb88
    Survey:         741
    File Header:    2
    Bluefin CTD:    741
    Bluefin Nav:    563
    Subbottom:      741
    Low Sidescan:   742
    High Sidescan: 741
Data records written to: 20050418_sslow.mb132
    Subbottom:      0
    Low Sidescan:   742
    High Sidescan: 0

Total data records read from: 20050418_151812p.mb88
    Survey:         1731
    File Header:    4
    Bluefin CTD:    1730
    Bluefin Nav:    1323
    Subbottom:      1730
    Low Sidescan:   1732
    High Sidescan: 1730
Total data records written to: 20050418_sslow.mb132
    Subbottom:      0
    Low Sidescan:   1732
    High Sidescan: 0
```

SEE ALSO

mbsystem(1), **mbformat**(1), **mbinfo**(1)

BUGS

No doubt.