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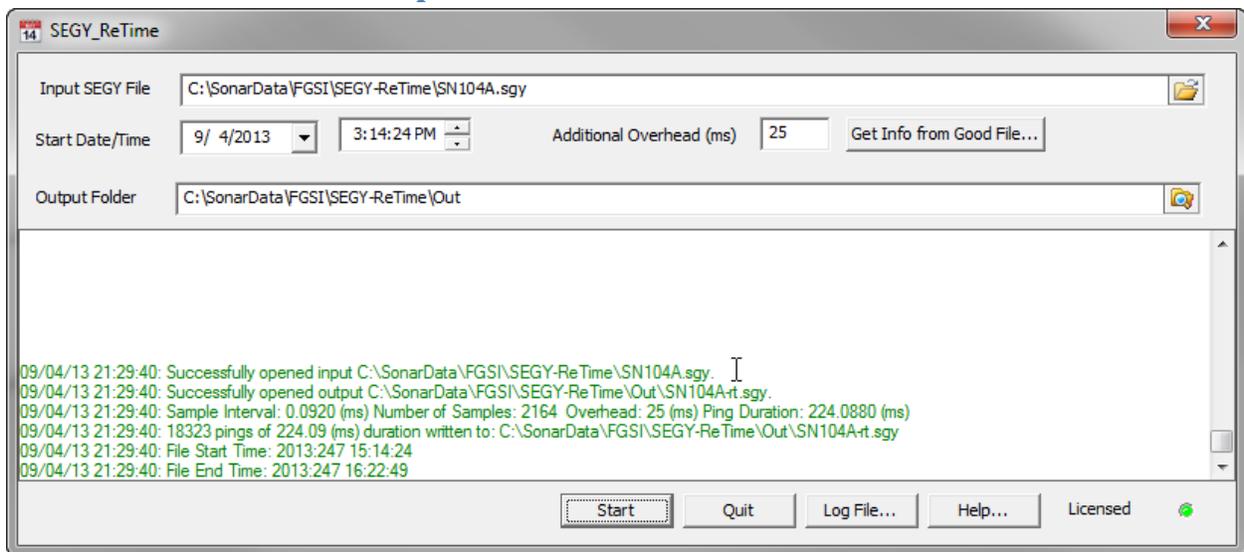
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1 SEGY Re-Time Utility – SEGY_ReTime.exe

1.1 User Interface Description



The Chesapeake Technology Re-Time utility is a tool that can be used to assign a complete date and time stamp to each SEG-Y trace in a conforming SEG-Y file. The interval between pings will be estimated, based upon the sample duration. The sample duration will be computed as trace header bytes 117-118 (SAMPLE INTERVAL in microseconds) x trace header bytes. E.g. 100 usecs x 2500 samples = 250 msecs, or a 4 hz ping rate. To slow down the ping rate, add “Additional Overhead” in msecs.

1.2 User Input Fields

Input SEG-Y File – Browse for and select a single file to use as the input file. This file will not be changed, but a second output file will be created, if the SEGY_ReTime.exe run is successful. The utility looks for a SEG-Y file with the SGY extension in file-name format *.SGY.

Start Date/Time-The user must enter the start date and time for the first trace of the file. The utility then will increment each trace by the two way acoustic travel time detected by multiplying the number of samples in the trace by the time interval between each sample.

Additional Overhead (ms)-Some digital systems do not actually ping at the two way travel time defined by the sample count and sample interval. The Edgetech Chirp profiler for example will always add additional time between transmit pulses. The amount of overhead is determined by the selected pulse in the chirp system but is constant for a given selected pulse. Use this parameter to add overhead time to each ping to match the recorded ping rate.

Get Info from Good File-This button allows users to read a 'good' segy file with valid time stamps and a similar record length as the problem file for the purposes of working out what the Additional Overhead in seconds should be. The Additional Overhead is computed by reading a few hundred pings and observing what the actual ping interval is and then subtracting out the two way travel time. This function then updates the Addition Overhead field automatically.

Output Folder-Specify an output folder where (new) SEG-Y files will be written. The re-timed SEG-Y files will always be named the same as the original file but with the "-rt" for re-timed suffix appended to the file name.

1.3 Example 1 – Sample Data Set 5 – Englebright Lake SEG file

This example SEG file comes from the www.chestech-support.com Sample Data area, and you can experiment with it yourself. Using the free utility SEISEE, you can see that the initial file contents show a 3-hz ping rate, sample interval (SI column) of 100 usec, and 2500 (NSMP column) samples per trace (works out to 250 msec per trace). A ping rate of 333 msec inter-ping-interval was what was actually used in the recording, and you can see the SCE column showing 3 secs in a row with the same value.

stech\SampleData\SampleDataSet5_SEG_EnglebrightLake\Engle1-50-4.5-50ms.seg

View | Change

Search Trace# = 1

Trace#	SRCX	SRCY	GRPX	GRPY	UNITS	DELRECT	NSMP	SI	SLEN	DAY	HOURL	MINUTE	SCE
1	-43656775	14129404	-43656775	14129404	2	0	2500	100	0	262	22	16	59
2	-43656775	14129404	-43656775	14129404	2	0	2500	100	0	262	22	16	59
3	-43656775	14129404	-43656775	14129404	2	0	2500	100	0	262	22	17	0
4	-43656778	14129407	-43656778	14129407	2	0	2500	100	0	262	22	17	0
5	-43656778	14129407	-43656778	14129407	2	0	2500	100	0	262	22	17	0
6	-43656778	14129407	-43656778	14129407	2	0	2500	100	0	262	22	17	1
7	-43656780	14129411	-43656780	14129411	2	0	2500	100	0	262	22	17	1
8	-43656780	14129411	-43656780	14129411	2	0	2500	100	0	262	22	17	1
9	-43656780	14129411	-43656780	14129411	2	0	2500	100	0	262	22	17	2
10	-43656782	14129415	-43656782	14129415	2	0	2500	100	0	262	22	17	2
11	-43656782	14129415	-43656782	14129415	2	0	2500	100	0	262	22	17	2
12	-43656784	14129419	-43656784	14129419	2	0	2500	100	0	262	22	17	3
13	-43656784	14129419	-43656784	14129419	2	0	2500	100	0	262	22	17	3
14	-43656784	14129419	-43656784	14129419	2	0	2500	100	0	262	22	17	3
15	-43656787	14129422	-43656787	14129422	2	0	2500	100	0	262	22	17	4
16	-43656787	14129422	-43656787	14129422	2	0	2500	100	0	262	22	17	4
17	-43656787	14129422	-43656787	14129422	2	0	2500	100	0	262	22	17	4
18	-43656788	14129426	-43656788	14129426	2	0	2500	100	0	262	22	17	5
19	-43656788	14129426	-43656788	14129426	2	0	2500	100	0	262	22	17	5
20	-43656788	14129426	-43656788	14129426	2	0	2500	100	0	262	22	17	5
21	-43656788	14129426	-43656788	14129426	2	0	2500	100	0	262	22	17	6
22	-43656791	14129429	-43656791	14129429	2	0	2500	100	0	262	22	17	6
23	-43656791	14129429	-43656791	14129429	2	0	2500	100	0	262	22	17	6
24	-43656791	14129429	-43656791	14129429	2	0	2500	100	0	262	22	17	7
25	-43656793	14129433	-43656793	14129433	2	0	2500	100	0	262	22	17	7
26	-43656793	14129433	-43656793	14129433	2	0	2500	100	0	262	22	17	7
27	-43656793	14129433	-43656793	14129433	2	0	2500	100	0	262	22	17	8
28	-43656795	14129437	-43656795	14129437	2	0	2500	100	0	262	22	17	8
29	-43656795	14129437	-43656795	14129437	2	0	2500	100	0	262	22	17	8

Here's an example **SEGY_ReTime** run on this file, using these settings. We'll set the start date to 1/1/2013, 10pm.

14 SEGY_ReTime

Input SEGY File: D:\UserSteve\Chestech\SampleData\SampleDataSet5_SEG_EnglebrightLake\Engle1-50-4.5-50ms.sgy

Start Date/Time: 1/ 1/2013 10:00:00 PM Additional Overhead (ms): 0 Get Info from Good File...

Output Folder: D:\UserSteve\Chestech\SampleData\SampleDataSet5_SEG_EnglebrightLake

```

11/19/13 14:40:44: Successfully opened input D:\UserSteve\Chestech\SampleData\SampleDataSet5_SEG_EnglebrightLake\Engle1-50-4.5-50ms.sgy.
11/19/13 14:40:44: Successfully opened output D:\UserSteve\Chestech\SampleData\SampleDataSet5_SEG_EnglebrightLake\Engle1-50-4.5-50ms.rtg.
11/19/13 14:40:44: Sample Interval: 0.1000 (ms) Number of Samples: 2500 Overhead: 0 (ms) Ping Duration: 250.0000 (ms)
11/19/13 14:40:44: 8218 pings of 250.00 (ms) duration written to:
D:\UserSteve\Chestech\SampleData\SampleDataSet5_SEG_EnglebrightLake\Engle1-50-4.5-50ms-rt.sgy
11/19/13 14:40:45: File Start Time: 2013:001 22:00:00 Ping:1
11/19/13 14:40:45: File End Time: 2013:001 22:34:14 Ping:8218
    
```

Start Quit Log File... Help... Licensed

The results, and we will just show the date/time columns, are like this, when viewed in SEISEE. The file Engle1-50-4.5-50ms-rt.SGY has been written:

	Trace#	NSMP	SI	YEAR	DAY	HOUR	MINUTE	SCE
<input type="checkbox"/> (95- 96) Uphole time at source	1	2500	100	2013	1	22	0	0
<input type="checkbox"/> (97- 98) Uphole time at group	2	2500	100	2013	1	22	0	0
<input type="checkbox"/> (99-100) Source static correction	3	2500	100	2013	1	22	0	0
<input type="checkbox"/> (101-102) Group static correction	4	2500	100	2013	1	22	0	0
<input type="checkbox"/> (103-104) Total static applied	5	2500	100	2013	1	22	0	1
<input type="checkbox"/> (105-106) Lag time A	6	2500	100	2013	1	22	0	1
<input type="checkbox"/> (107-108) Lag time B	7	2500	100	2013	1	22	0	1
<input type="checkbox"/> (109-110) Delay Recording time	8	2500	100	2013	1	22	0	1
<input type="checkbox"/> (111-112) Mute time start	9	2500	100	2013	1	22	0	2
<input type="checkbox"/> (113-114) Mute time end	10	2500	100	2013	1	22	0	2
<input checked="" type="checkbox"/> (115-116) * Number of samples in this	11	2500	100	2013	1	22	0	2
<input checked="" type="checkbox"/> (117-118) * Sample interval in ms for	12	2500	100	2013	1	22	0	2
<input type="checkbox"/> (119-120) Gain type of field instrum	13	2500	100	2013	1	22	0	3
<input type="checkbox"/> (121-122) Instrument gain	14	2500	100	2013	1	22	0	3
<input type="checkbox"/> (123-124) Instrument gain constant	15	2500	100	2013	1	22	0	3
<input type="checkbox"/> (125-126) Correlated (1=yes / 2=no)	16	2500	100	2013	1	22	0	4
<input type="checkbox"/> (127-128) Sweep frequency at start	17	2500	100	2013	1	22	0	4
<input type="checkbox"/> (129-130) Sweep frequency at end	18	2500	100	2013	1	22	0	4
<input type="checkbox"/> (131-132) Sweep lenth in ms	19	2500	100	2013	1	22	0	4
<input type="checkbox"/> (133-134) Sweep type 1-lin,2-parab	20	2500	100	2013	1	22	0	4
<input type="checkbox"/> (135-136) Sweep trace taper length	21	2500	100	2013	1	22	0	5
<input type="checkbox"/> (137-138) Sweep trace taper length	22	2500	100	2013	1	22	0	5
<input type="checkbox"/> (139-140) Taper type 1-lin,2-cos2,3	23	2500	100	2013	1	22	0	5
<input type="checkbox"/> (141-142) Alias filter frequency, i	24	2500	100	2013	1	22	0	5
<input type="checkbox"/> (143-144) Alias filter slope	25	2500	100	2013	1	22	0	6
<input type="checkbox"/> (149-150) Low cut frequency, if us	26	2500	100	2013	1	22	0	6
<input type="checkbox"/> (151-152) High cut frequency, if us	27	2500	100	2013	1	22	0	6
<input type="checkbox"/> (153-154) Low cut slope								
<input type="checkbox"/> (155-156) High cut slope								
<input checked="" type="checkbox"/> (157-158) Year data recorded								
<input checked="" type="checkbox"/> (159-160) Day of year								
<input checked="" type="checkbox"/> (161-162) Hour of day								
<input checked="" type="checkbox"/> (163-164) Minute of hour								
<input checked="" type="checkbox"/> (165-166) Second of minute								

Note that because we did not ass any “additional overhead”, the 250 msec/ping translated into an output ping rate of 4 hz. If we wanted to reduce this to 3 hz again, we could add 80 msec or so to the transform and do it again. Note that DAY=1 now, HOUR = 22 (10pm), and all the year, day, time etc fields have been re-written.