



A Quick Way to Check the Timing in HYPACK® Data Files

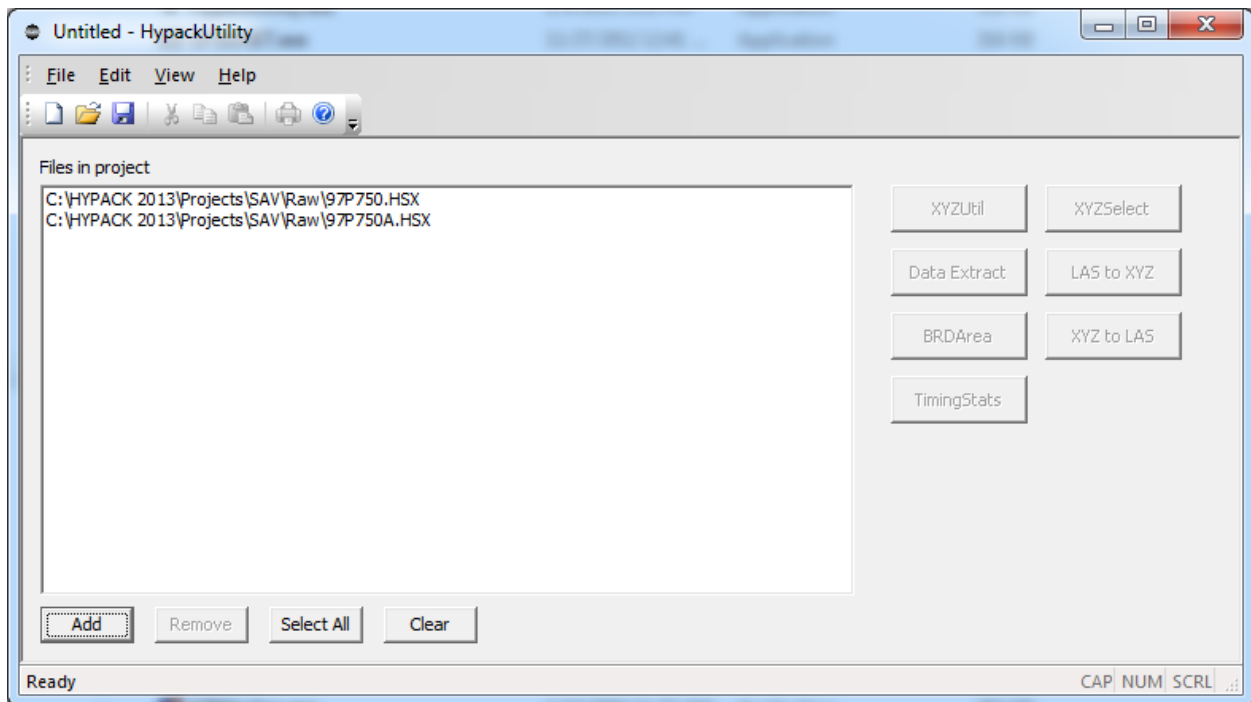
By Harold Orlinsky

HYPACK® files are able to handle high rates of logging – 100hz, or 0.01 seconds. More typically are the 5 to 20 Hz, which pretty well handles the full spectrum of sensors.

But how accurate are the times? When connected via serial port, the time stamp from the veritime clock model is at the receipt of the first character of the data. When connected via a network port, the time tag is generated by the sensor's clock, and all we do is store that time. (We'll do a conversion to seconds, but that's just a format thing.)

In a program called HYPACKUtility.exe (in the HYPACK\Support\ folder) we can start to look at these times, and get a few statistics about what the data is really doing.

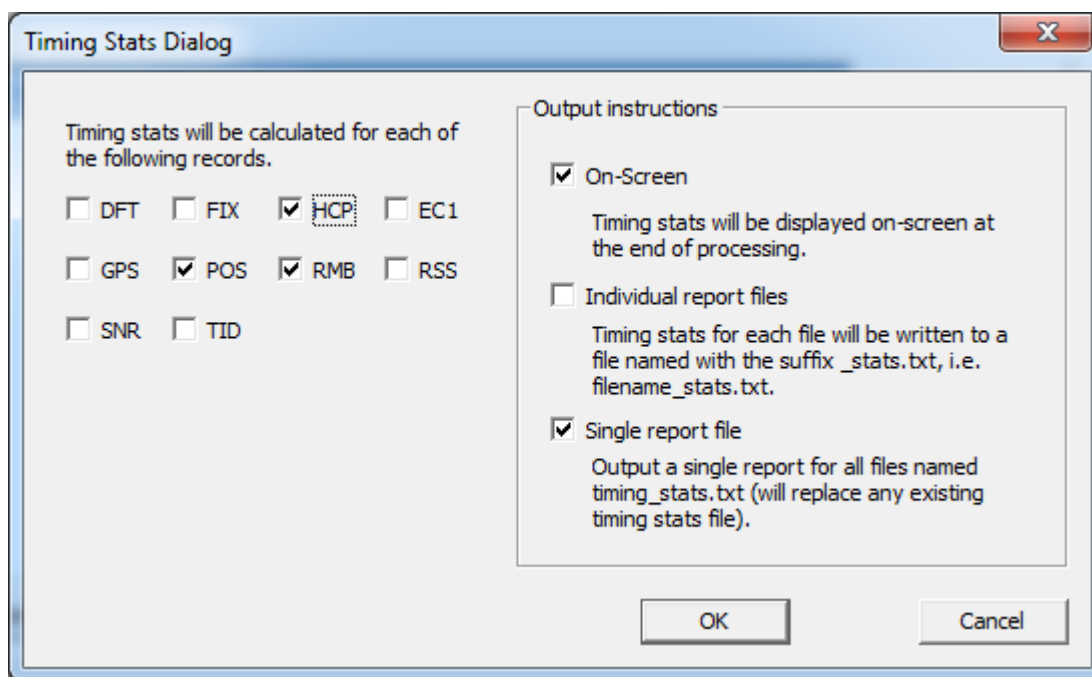
FIGURE 1. HYPACKUtility Program



TIMING STATISTICS

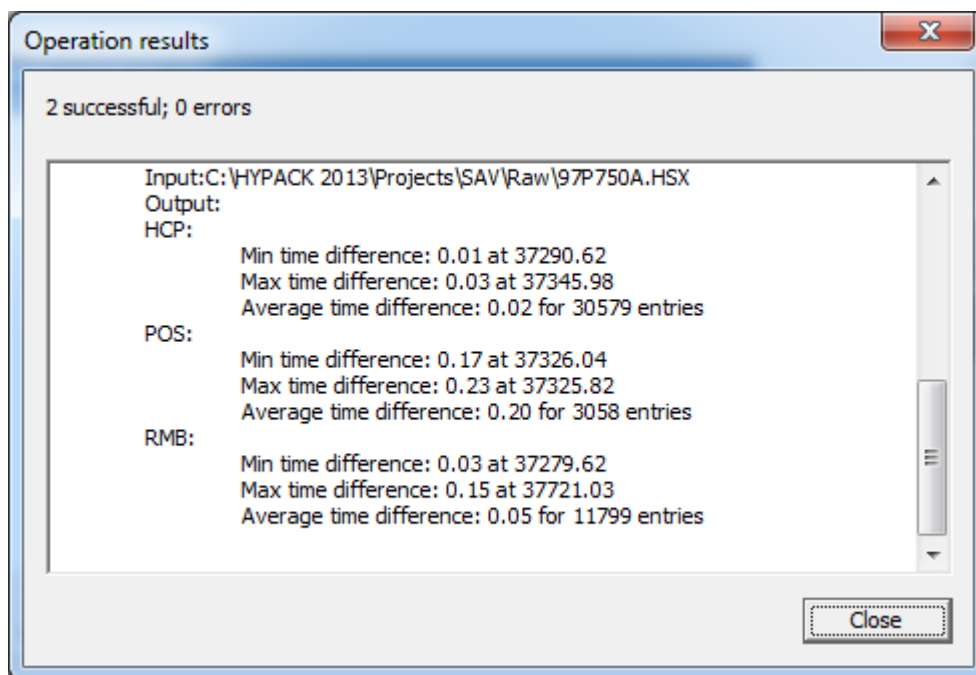
1. **Open the HYPACKUtility program, and add HSX or RAW files.** Multiple files work fine.
2. **Click [TimingStats].**

FIGURE 2. *Timing Statistics Dialog*



3. **Select your output options.** The program option enables you to choose which sensor identifier you wish to examine. In this case, I selected POS (position), HCP (motion) and RMB (bathy). You can output the results both on screen, and to a text file.

FIGURE 3. *Resulting Statistical Report*



The output shows the minimum and maximum time differences between updates (with their time of occurrence), and the average time difference for all the entries. The last number will give you an idea of how well the actual output rate matches your setting. For example, if you are running the GPS at 5 Hz, the average should be 0.20. In the sample file used above, that was the value I got. With the motion sensor at 50hz, I would expect 0.02 seconds for the update, again, in line with the reported values.

DATAEXTRACT

The DataExtract utility will strip out all the sensor data and enable you to examine the data in a spreadsheet program such as Excel. This program saves you the step of importing the data to Excel and doing statistics on the values.

The TimingStats feature in HYPACKUtility is helpful for finding that one bad point in the file with a time tag that is not correct.

The HYPACKUtility program is included in HYPACK® 2013. If you have any questions, or comments to make the program better, send me an e-mail at Harold@hypack.com